

Annual CCR Landfill Inspection

Edgewater I-43 Ash Disposal Facility

Prepared for:

Wisconsin Power and Light Company
Edgewater Generating Station
3739 Lakeshore Drive
Sheboygan, Wisconsin 53081

SCS ENGINEERS

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2830 Dairy Drive
Madison, WI 53718-6751
608-224-2830


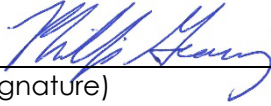
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PE CERTIFICATION

	<p>I, Phillip E. Gearing, hereby certify that this Annual CCR Landfill Inspection Report meets the requirements of 40 CFR 257.84(b)(2), was prepared by me or under my direct supervision, and that I am a duly licensed Professional Engineer under the laws of the State of Wisconsin.</p>
 (signature)	12/19/2023 (date)
<p>Phillip E. Gearing (printed or typed name)</p>	
<p>License number <u> E-45115 </u> My license renewal date is July 31, 2024.</p>	
<p>Pages or sheets covered by this seal: All – Annual CCR Landfill Inspection – Edgewater I43 Ash Disposal Facility</p>	

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1.0 INTRODUCTION

1.1 PURPOSE

SCS Engineers (SCS) completed an annual inspection of the Wisconsin Power and Light Company (WPL) Edgewater I-43 Ash Disposal Facility (I-43) in Sheboygan, Wisconsin. The annual inspection was completed on July 24, 2023, in accordance with the U.S. Environmental Protection Agency (U.S. EPA) Coal Combustion Residuals (CCR) rule, 40 CFR 257 Subpart D, in particular 257.84(b)(1). According to 40 CFR 257.84(b)(1), an annual inspection by a qualified professional engineer is required for all existing and new CCR landfills and any lateral expansion of a CCR landfill. The purpose of the annual inspection is to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards. The inspection must, at a minimum, include:

- A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record (e.g., the results of inspections by a qualified person and results of previous annual inspections); and
- A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit.

This report has been prepared in accordance with 40 CFR 257.84(b)(2) to document the annual inspection.

1.2 BACKGROUND

The I-43 facility includes a closed CCR landfill, which consists of disposal Phase 1 and Phase 2, and an active CCR landfill, which currently consists of an existing CCR unit in disposal Phase 3 and Phase 4. The two landfills are located on the same property, but are not contiguous. The U.S. EPA CCR Rule does not apply to Phase 1 and Phase 2 because they were closed before the effective date of the CCR Rule.

The active CCR landfill at I-43 includes the following modules:

- Phase 3, Module 1
- Phase 3, Module 2
- Phase 4, Module 1

These phases were previously described as separate existing CCR landfills, although they are managed as a single landfill by the facility and by the Wisconsin Department of Natural Resources. WPL previously clarified that Phase 3, Module 1; Phase 3, Module 2; and Phase 4, Module 1 are one existing CCR landfill under the federal CCR Rule, and this report reflects WPL's clarification.

The modules are used to describe the location of items observed during the inspection. The inspection requirements in 40 CFR 257.84(b)(1) apply to the existing (active) CCR unit.

At the time of the inspection, the active CCR landfill modules were in various stages of development and use as described in the table below.

Unit	CCR Rule Status	Basis for Status
Existing Active Landfill (Includes Phase 3, Module 1; Phase 3, Module 2; Phase 4, Module 1)	Existing CCR Landfill. Currently accepting CCR.	Filling is occurring in Phase 3, Module 2 and overlay from Phase 3, Module 2 is currently occurring on Phase 3, Module 1. Final or interim waste grades have been reached in some areas, and final or intermediate cover is present on portions of the CCR unit. Final closure per 257.102 will not be completed until final grades are reached throughout the CCR unit.

2.0 SUMMARY OF RESULTS AND RECOMMENDATIONS

SCS identified no deficiencies or releases during the annual inspection of the CCR unit at I-43. Deficiencies and releases must be remedied by the owner or operator as soon as feasible and the remedy documented.

SCS did identify conditions during the annual inspection that are not considered deficiencies but have the potential to become a deficiency if left unaddressed. Each condition and the recommendations provided by SCS to address them are summarized in the table below. Based on correspondence with WPL in follow-up to the visual inspection, the recommended maintenance was performed and will continue to be performed during routine landfill maintenance.

These conditions, recommendations, and maintenance performed are described in further detail in **Section 4.0**.

Condition	CCR Unit / Location	Recommendation(s)	Report Section
Vegetation growth in berm drainage material	Separation berm between Phase 3, Module 2 and contact water swale.	Remove vegetation, especially woody and deep-rooted vegetation, before it becomes established. Monitor during 7-day inspections. Continue to inspect and remove vegetation growth in drainage layer material and other areas during general maintenance.	4.3.2

Condition	CCR Unit / Location	Recommendation(s)	Report Section
Vegetation grown in drainage layer material	Phase 3, Module 2 drainage layer material (Southwest corner)	Remove vegetation, especially woody and deep-rooted vegetation, before it becomes established. Monitor during 7-day inspections. Continue to inspect and remove vegetation growth in drainage layer material and other areas during general maintenance.	4.3.2

3.0 ANNUAL INSPECTION

Mr. Phillip Gearing of SCS completed an annual inspection of the active CCR landfill at I-43 on July 24, 2023. Mr. Gearing is a licensed professional engineer in Wisconsin and holds a Bachelor of Science degree in Geological Engineering. He has over 17 years of experience in the design, construction, and operation of solid waste disposal facilities. The scope of the annual inspection is described in **Sections 3.1** and **3.2**. The results of the annual inspection are discussed in **Section 4.0**.

3.1 OPERATING RECORD REVIEW

SCS reviewed the available information in the operating record for I-43. Information reviewed by SCS included operating record materials provided by WPL and the information posted on Alliant Energy's CCR Rule Compliance Data and Information website for the I-43 facility.

3.2 VISUAL INSPECTION

SCS completed a visual inspection of the I-43 landfill to identify signs of distress or malfunction of the CCR unit.

The visual inspection included observations of the following:

- CCR placement areas including active filling areas, intermediate cover areas, final cover areas, and exterior non-CCR berms or slopes.
- Leachate collection and removal system components including visible leachate drainage layer materials.
- Leachate and contact water run-off management features including swales, the storage basin, and the storage basin pumping system.
- Non-contact storm water run-on and run-off control features, including swales located adjacent to active fill areas but outside the landfill limits and the on-site storm water management basin.

4.0 INSPECTION RESULTS

The results of the annual inspection, along with a description of any deficiencies or releases identified during the visual inspection, are summarized in the following sections.

4.1 CHANGES IN GEOMETRY

No apparent changes in geometry were noted that would indicate distress or malfunction of the CCR unit since the previous annual inspection at the I-43 facility completed under 40 CFR 257.84(b)(1). All changes in geometry observed during the annual inspection were the result of planned CCR filling.

At the time of the visual inspection, CCR placement was ongoing in Phase 3, Module 2 and overlay from Phase 3, Module 2 is currently occurring on Phase 3, Module 1. Final or interim waste grades have been reached in some areas through the unit. Final cover exists in areas where final waste grades have been reached and intermediate cover exists in remaining interim grade areas that are awaiting future CCR placement.

4.2 CCR VOLUMES

The approximate volume of CCR contained in the CCR unit at the time of the inspection is summarized below. A description of how the estimate was developed and the sources used are also summarized below.

Unit	Estimated Volume of CCR in Place	Basis for Estimate and Source
Existing Active Landfill (Includes Phase 3, Module 1; Phase 3, Module 2; Phase 4, Module 1)	478,600 cubic yards	Estimated volume based on the updated August 23, 2023, existing conditions and survey compared to approved base grades in Phase 3, Module 1 and documented drainage layer grades in Phase 3, Module 2. Estimated volume excludes final cover or intermediate cover material installed at time of survey. Estimated volume considers vertical boundary at the module limits.

4.3 APPEARANCE OF STRUCTURAL WEAKNESS

The inspection included a review of the appearance of actual or potential structural weakness of the CCR unit. The visual inspection included a review of CCR fill areas including the top slopes, internal side slopes, external side slopes, and internal ramps/haul roads for the presence of the following conditions:

- Signs of surface movement or instability:
 - Sloughing, slumping, or sliding
 - Surface cracking
 - Slopes in excess of three horizontal to one vertical (3H:1V)
 - Toe of slope bench movement
 - Evidence of inadequate compaction of exposed CCR
- Inappropriate vegetation growth

- Animal burrows
- Erosion damage
- Unusual surface damage caused by vehicle traffic

4.3.1 Signs of Surface Movement or Instability

No signs of surface movement or instability were noted during the inspection of the landfill.

4.3.2 Inappropriate Vegetation Growth

No inappropriate vegetation growth impacting the CCR unit was noted during the inspection, except as observed below:

- Vegetation growth was observed in the separation berm drainage layer material between Phase 3, Module 2 and the contact water swale. SCS recommends the removal of vegetation, especially woody and deep-rooted vegetation before it becomes established, and these areas be monitored during the 7-day inspections. Vegetation growth in the drainage layer and other areas should continue to be inspected and removed during general maintenance.
- Vegetation growth was observed in the drainage layer material in Phase 3, Module 2 Southwest corner. SCS recommends the removal of vegetation, especially woody and deep-rooted vegetation before it becomes established, and these areas be monitored during the 7-day inspections. Vegetation growth in the drainage layer and other areas should continue to be inspected and removed during general maintenance.
- Dense vegetation growth in the exterior drainage swales and around features (toe drains, cleanouts, discharge structures, etc.) makes access for inspection more difficult. Regular vegetation maintenance is likely to aid in the identification of issues before they become significant. Additional vegetation maintenance could be beneficial for future weekly and annual inspections. This condition is not considered an operating deficiency, but SCS recommends woody vegetation and dense vegetation be spot removed, and these areas monitored during the 7-day inspections.

Based on correspondence with WPL in follow-up to the visual inspection, the recommended vegetation maintenance was performed.

4.3.3 Animal Burrows

No animal burrows were noted during the inspection of the CCR unit.

4.3.4 Erosion Damage

No erosion damage was noted during the inspection of the CCR unit.

4.3.5 Unusual Surface Damage Caused by Vehicle Traffic

No unusual surface damage caused by vehicle traffic was noted during the inspection of the CCR unit.

4.4 DISRUPTIVE CONDITIONS

4.4.1 Existing Disruptive Conditions

4.4.1.1 Current Inspection

No existing conditions that were disrupting the operation and safety of the CCR unit were noted during the annual inspection.

4.4.1.2 Previous Inspection

No existing conditions that were disrupting the operation and safety of the CCR unit were noted during the previous inspection.

4.4.2 Potentially Disruptive Conditions

4.4.2.1 Current Inspection

No potentially disruptive conditions to operation and safety of the CCR unit were noted during the annual inspection.

4.4.2.2 Previous Inspections

CCR tracking on haul roads was observed during the previous inspection and noted as a potentially disruptive condition. The condition was not observed during the current annual inspection. Landfill staff were maintaining access roads as described in the fugitive dust control plan. SCS recommends that tracking and accumulation of CCR on the landfill haul roads continue to be monitored during the 7-day inspections.

4.5 OTHER CHANGES SINCE PREVIOUS ANNUAL INSPECTION

No site changes were noted during the inspection of Phase 3, Module 1; Phase 3, Module 2; and Phase 4, Module 1 when comparing to the previous annual inspection.

5.0 FUTURE INSPECTIONS

5.1 EXISTING CCR LANDFILL

As stated in 40 CFR 257.84(b)(4), the owner or operator of the CCR unit must conduct the inspection required by paragraphs (b)(1) and (2) of this section on an annual basis. The date of completing the inspection report is the basis for establishing the deadline to complete the next subsequent inspection. Any required inspection may be conducted prior to the required deadline, provided the owner or operator places the completed inspection report into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing subsequent inspection reports is based on the date of completing the previous inspection report. The owner or operator has completed an inspection when the inspection report has been placed in the facility's operating record.

The next annual inspection of the existing landfill unit must be completed within 1 year of the placement of this inspection report in the operating record for the facility.

5.2 NEW CCR LANDFILLS AND LATERAL EXPANSIONS

The initial annual inspection for modules constructed in the future must be completed within 14 months of the initial receipt of CCR in the module per 40 CFR 257.84(b)(3)(ii).

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