Annual CCR Landfill Inspection

Lansing Landfill
2320 Power Plant Drive
Lansing, Iowa 52151

Prepared for:

Interstate Power and Light Company
Lansing Generating Station
2320 Power Plant Drive
Lansing, Iowa 52151

SCS ENGINEERS

25222070.00 | December 19, 2022

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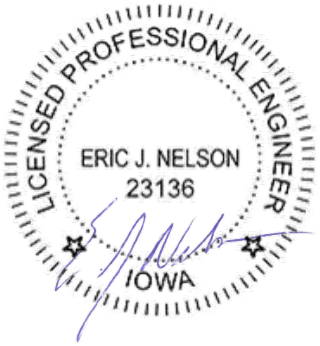
PE CERTIFICATION



I, Eric J. Nelson, 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 Iowa.

(signature) December 19, 2022 (date)

Eric J. Nelson

(printed or typed name)

License number 23136

My license renewal date is December 31, 2022.

Pages or sheets covered by this seal:

All - Annual CCR Landfill Inspection - Lansing Landfill

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1.0 INTRODUCTION

SCS Engineers (SCS) completed an annual inspection of the Interstate Power and Light Company (IPL) Lansing (LAN) Landfill in Lansing, Iowa. The annual inspection was completed in accordance with the U.S. Environmental Protection Agency (U.S. EPA) Coal Combustion Residuals (CCR) rule, 40 Code of Federal Regulations (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.

1.1 BACKGROUND

The LAN facility includes an active CCR landfill, which currently consists of a single CCR unit. The LAN Landfill has received CCR both before and after the effective date of the CCR Rule.

The inspection requirements in 40 CFR 257.84(b)(1) apply to the existing (active) CCR unit listed above.

2.0 SUMMARY OF RESULTS AND RECOMMENDATIONS

SCS identified no deficiencies or releases during the annual inspection of the LAN Landfill. 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. These conditions and remedial recommendations are described in further detail in Section 4.0.

Condition	CCR Unit	Recommendation(s)	Report Section
Localized areas of contact water runoff pattern disruption or limited freeboard in runoff features, risking proper contact water runoff.	Landfill	• Monitor during 7-day inspections • Regrade or repair as needed if contact water features are interrupting proper drainage	4.3.5
Dry and dusty conditions. Dust in the landfill proper was minimal. Even controlling vehicle speeds well below 10 mph generated fugitive dust due to CCR on the road and dry conditions.	Landfill Access Road	• Continue to implement dust control measures and remove tracked material from haul roads per the fugitive dust plan • Monitor during 7-day inspections	4.4.2.1
Rill erosion in gulley repair area adjacent to the landfill.	Landfill	• Monitor during 7-day inspections • Repair if erosion continues	4.4.2.2

3.0 ANNUAL INSPECTION

Mr. Eric Nelson of SCS completed an annual inspection of the LAN Landfill on August 23, 2022. Mr. Nelson is a licensed professional engineer in Iowa and holds a Bachelor of Science degree in Geological Engineering. He has over 20 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 the LAN Landfill, in addition to the visual inspection discussed in Section 3.2. Information reviewed by SCS included operating record materials provided by IPL and the information posted on Alliant Energy's CCR Rule Compliance Data and Information website for the LAN facility, as of the date of the inspection.

3.2 VISUAL INSPECTION

SCS completed a visual inspection of the LAN 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, final cover areas, and exterior non-CCR berms or slopes.
- Contact water run-off management features including internal contact water drainage features and discharges to the LAN Upper Ash Pond.
- Non-contact storm water run-on and run-off control features including swales located adjacent to active fill areas.

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 at the facility. All changes in geometry observed during the annual inspection were the result of planned CCR filling activities.

At the time of the visual inspection, active CCR placement was evident based on exposed and recently graded CCR fill surfaces. The final cover is in place along nearly the entire south and east slopes, as it was during previous annual inspections beginning in 2018 with the remaining landfill areas being open.

4.2 CCR VOLUMES

The approximate volume of CCR contained in the landfill at the time of inspection is 426,631 cubic yards (cy). This estimate is based on a design capacity of 446,900 cy less the approximate capacity remaining (22,133 cy) as of August 9, 2022; and the estimated volume of CCR placed between August 9, 2022, and the inspection date (August 23, 2022). The approximate capacity remaining as of August 9, 2022, is based on a topographic survey completed by Ames Construction and airspace calculations completed by SCS. An estimated 1,864 cy of CCR has been placed since the August 9, 2022, topographic survey, based on a CCR disposal rate of 133 cy per day calculated using disposal data provided by IPL.

4.3 APPEARANCE OF STRUCTURAL WEAKNESS

The inspection included a review of the appearance of an 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 3 horizontal to 1 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.

4.3.2 Inappropriate Vegetation Growth

No inappropriate vegetation growth impacting the CCR unit was noted during the inspection.

4.3.3 Animal Burrows

No animal burrows were noted during the inspection.

4.3.4 Erosion Damage

No erosion damage was noted during the inspection.

4.3.5 Unusual Surface Damage Caused by Vehicle Traffic

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

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

The following potentially disruptive conditions were observed during the current inspection.

- Tracking of CCR onto landfill haul road. The tracking of CCR onto the landfill access road was noted as a potentially disruptive condition. Tracking of CCR onto the shared landfill access road from the adjacent CCR surface impoundment construction activities was observed during the current inspection. The tracking and accumulation of CCR on the access road has the potential to produce fugitive dust if not addressed through maintenance of the roads as described in the fugitive dust control plan. During the site inspection, dry and dusty conditions on the landfill haul road were observed. Dust in the landfill proper was minimal. Even with vehicle speeds controlled well below 10 miles per hour, fugitive dust was generated due to CCR on the road and dry conditions. Prevailing winds at the time prevented dust from leaving the site. IPL should remove CCR from the roads and implement dust control measures as indicated in the fugitive dust control plan on an as-needed basis.

  The tracking and accumulation of CCR on the landfill access road is not currently considered an operating deficiency since IPL has maintained, and plans to continue

maintaining, the access roads as described in the fugitive dust control plan. The observed tracking and accumulation of CCR on the landfill access road can be addressed through regular housekeeping practices described in the fugitive dust control plan. Monitoring of tracking and accumulation of CCR on the landfill access road during 7-day inspections is recommended.

- **Potential disruption of contact water flow or limited freeboard**. Localized areas of contact water runoff pattern disruption or limited freeboard in runoff features due to adjacent CCR grading within the landfill, risking proper contact water runoff, were observed in various locations along the boundary between the final cover and active landfill and the landfill access road. These areas have been recently graded, so this observation may be a temporary condition, and no signs of uncontrolled contact water discharges were observed during the inspection. Contact water is ultimately routed to the Upper Ash Pond as intended and that routing is unaffected by these observed conditions; however, flow may be hindered and redirected away from planned contact water management features within the landfill and flow in an unplanned way to the Upper Ash Pond. SCS recommends IPL monitor the contact water features during their 7-day inspections and regrade/repair features as needed if proper drainage is being interrupted.

No other potentially disruptive conditions were noted during the annual inspection.

4.4.2.2 Previous Inspection

The following potentially disruptive conditions were observed during the previous inspection.

- **A small area of erosion on the final cover** was observed in the perimeter ditch along the south side of the landfill. The erosion formed where the soil cover in the perimeter ditch meets the riprap pad at the northwest end of the ditch. This area appeared stable during the current inspection. Continued monitoring of this area during 7-day inspections is recommended.

- **Erosion was observed in a drainage gulley** located between the landfill and the radio tower access road to the south of the landfill. Continued monitoring of this area was, and is still, recommended. As discussed in the previous inspection report, IPL completed initial interim actions to maintain the stability of the gully. Vegetation has been established in the 2021 repair areas, but rill erosion was observed in the repair areas during the current inspection that should be monitored during 7-day inspections. Potential repair options should be identified/considered for implementation if erosion continues.

4.5 OTHER CHANGES SINCE PREVIOUS ANNUAL INSPECTION

No other changes to site conditions that appear to have the potential to affect the stability or operation of the facility were noted during the 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 LAN must be completed within 1 year of the placement of this inspection report in the operating record for the LAN facility.

5.2 NEW CCR LANDFILLS AND LATERAL EXPANSIONS

The initial annual inspection for any lateral expansion 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).