

**CLECO POWER LLC**  
**BRAME ENERGY CENTER**  
**LENA, RAPIDES PARISH, LOUISIANA**



**CCR COMPLIANT**  
**CLOSURE PLAN**

**ASH MANAGEMENT LANDFILL**  
**CELL 4**

**AGENCY INTEREST NO. 2922**

**D-079-0390/P-0379-R1-M3**

**DECEMBER 2023**

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## 1.0 INTRODUCTION

On April 17, 2015, the Environmental Protection Agency (EPA) issued the final version of the federal Coal Combustion Residual Rule (CCR Rule) to regulate the disposal of coal combustion residual (CCR) materials generated at coal-fired units. The rule will be administered as part of the Resource Conservation and Recovery Act ([RCRA, 42 United States Code [(U.S.C)] §6901 et seq.]), using the Subtitle D approach.

Cleco Power LLC (Cleco) operates an existing coal combustion residuals (CCR) landfill referred to as the Ash Management Landfill at the Brame Energy Center (BEC) located near Boyce, Rapides Parish, Louisiana. The landfill is considered a Type I Industrial Facility by the Louisiana Department of Environmental Quality and operates under solid waste permit P-0379-R1-M3. Cells 1-3 of the Ash Management Landfill were active prior to the effective date of the CCR Rule. On October 11, 2021, the Louisiana Department of Environmental Quality (LDEQ) approved a minor modification for design changes to Cell 4 to comply with CCR design requirements. These changes included raising the excavation grades in Cell 4, changes to final waste grades, raising the perimeter levee elevations, and reorientation of the leachate collection trenches. Cleco contracted and completed the design and construction of the lateral expansion for Cell 4 of the Ash Management Landfill.

The new CCR unit at Cleco Power LLC's (Cleco) BEC is subject to the CCR Rule and as such Cleco is required to develop a Closure Plan per 40 Code of Federal Regulations (CFR) §257.102.

This closure plan is in addition to, not in place of, any other applicable site permits, environmental standards, or work safety practices.

## 2.0 PLAN OBJECTIVES

Per 40 CFR §257.102, the Closure Plan must contain the following:

- A description of how the CCR unit will be closed
  - For closure through leaving CCR in place:
    - A description of the final cover system and methods used to install the final cover, including methods for achieving performance standards specified in 40 CFR §257.102(d).
- An estimate of the maximum inventory of CCR material ever stored in the CCR unit over its active life.
- An estimate of the largest area of the CCR unit ever requiring a final cover.
- A schedule for completing closure activities, including the anticipated year of closure and major milestones for permitting and construction activities.

Additionally, Cleco is required to develop a Post-Closure plan per 40 CFR §257.104, which will be covered in a separate document. Per 40 CFR §257.102(b)(4), Cleco must obtain certification from a qualified professional engineer that the closure plan included in **Appendix A**, and subsequent updates to the plan, meet the requirements of 40 CFR §257.102. This sealed document serves as that certification.

### 3.0 CLOSURE METHOD

Cell 4 consists of 13.8 acres with a disposal capacity of 831,857 cubic yards (CY). Per the solid waste permit, the largest area that should ever require a final cover at any given point in time for the entire landfill is 80.6 acres. To comply with this requirement, an engineered cap meeting the CCR Rule's permeability performance standard will be installed in stages throughout the operating life of the landfill. Cell 4 will be closed by leaving the CCR material in place and designed to meet the requirements of §257.102. A description of the final cover system, methods and procedures for final cover installation and cover performance design described in detail here.

#### 3.1 Final Cover System

In accordance with the CCR Rule, the final cover system will be designed and constructed to meet the following criteria pursuant to 40 CFR §257.102(d):

- Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than  $1 \times 10^{-5}$  centimeters per second (cm/sec), whichever is less.
- The infiltration of liquids through the closed CCR unit must be minimized by the use of an infiltration layer that contains a minimum of 18 inches of earthen material.
- The erosion of the final cover system must be minimized by the use of an erosion layer that contains a minimum of six inches of earthen material that is capable of sustaining native plant growth.
- The distribution of the integrity of the final cover system must be minimized through a design that accommodates settling and subsidence.
- The owner or operator may select an alternative final cover system design, provided the alternative final cover system [meets the above requirements].

Once the final grades on Cell 4 are established, the final cover system will be placed over the closure extents to minimize infiltration into the consolidated waste material and minimize erosion of the cap. Per 40 §257.102(d), the final cover system will consist of, at minimum, an 18-inch infiltration layer and 6-inch erosion layer. The permeability of the final cover system will be equal to that of the bottom liner system and natural subsoils present, or no greater than  $1 \times 10^{-5}$  cm/sec, whichever is less. Per the current permit, Cleco may select an alternative final cover system design, provided the alternative cover system is designed and constructed to meet the criteria of the CCR Rule and is approved by LDEQ.

During installation of the cover soils, proper quality control methods will be used to ensure the following:

- The selected cover material is suitable;
- The material meets the minimum federal and state thickness and permeability requirements;
- The material is properly placed and compacted; and
- The material is properly protected before, during, and after construction.

Settling and subsidence of the final cover system is expected to be minimal. The underlying natural subsoils at the site are over consolidated clays and silts that are not prone to long-term settlement. Settlement would potentially be caused by consolidation of the CCR material or general fill material under new loads from construction activities; however, this settlement will occur for the duration of site grading activities and is expected to be minimal after the cover soil is installed. General fill, if necessary, will be installed in a controlled manner to minimize post-fill installation settlement.

### 3.2 Geometry and Stormwater Management

The geometry and stormwater management controls of the closed Cell 4 will allow the CCR unit to meet the following requirements as outlines in 40 CFR §257.102(d) of the CCR Rule:

- Control, minimize or eliminate, to the maximum extent feasible, post-closure infiltration of liquids into the waste and releases of CCR, leachate, or contaminated run-off to the ground or surface waters or to the atmosphere.
- Prevent future impoundment of water.
- Provide for slope stability to protect against sloughing or movement of the final cover system.

The closure system will be designed to provide adequate drainage during storm events. Material will be graded in order to promote stability of the cover system, to prevent the collection of standing water, to limit the velocity of storm water runoff, and to reduce the potential for soil erosion.

## 5.0 CLOSURE SCHEDULE

Providence created a closure schedule (See Table 1) outlining the critical scope and timeline necessary for the closure of Cell 4. Per 40 CFR §257.102(f) of the CCR Rule, closure must be completed within six months of initiating closure activities. At this time, the anticipated closure trigger for Cell 4 is the final receipt of waste. The anticipated year of closure for Cell for is no sooner than 2034, with the actual closure date dependent on plant operations.

Task Description	Estimated Duration
Permitting/Design	120 days
Submit Notification of Intent to Close to LDEQ	20 days
Design documents issued for bid	0 days
Bid Period	15 days
Bid Evaluation	10 days
Contract Award	20 days
Final Placement of CCR material	0 days
Commence construction/mobilization	30 days
Insect/rodent inspection	1 day
Grading/compaction of landfilled material	15 days
Install infiltration layer	50 days
Install erosion layer (topsoil)	20 days
Seeding	20 days
Modification of Runoff Diversion System (if necessary)	5 days

<b>Task Description</b>	<b>Estimated Duration</b>
LDEQ inspection	20 days
Site clean-up/demobilization	10 days
Submit Notification of Completion of Closure	20 days

Closure of the existing CCR unit will commence no later than 30 days after the known final receipt of waste. No later than the date Cleco initiates closure of Cell 4, a Notification of Intent to Close the CCR unit certified by a qualified professional engineer will be placed on Cleco's CCR public website within 30 days. For the purposes of this Closure Plan, closure of Cell 4 is considered complete after the erosion layer has been seeded and stabilized. From there, the Post-Closure Care Period for Cell 4 will begin. Within 30 days of completion of closure of the CCR unit, a Notification of Closure of the CCR unit will be prepared and placed in the facility's CCR Operating Record and on Cleco's CCR public website. This notification will include certification by a qualified professional engineer in the State of Louisiana verifying closure has been completed in accordance with this Closure Plan and the requirements of 40 CFR §257.102.

## **6.0 REVISIONS AND AMENDMENTS**

The initial Closure Plan will be placed in the CCR Operating Record. The plan will be amended whenever there is a change in operation of the CCR unit that affects the current or planned closure operations. The Closure Plan will be amended 60 days prior to a planned change in operation, or within 60 days following an unplanned change in operation. If a written Closure Plan is revised after closure activities have commenced, the written Closure Plan will be amended no later than 30 days following the triggering event. The initial Closure Plan and any amendment will be certified by a qualified professional engineer in the State of Louisiana for meeting the requirements of 40 CFR §257.102 of the CCR Rule. Amendments and revisions will be placed on the CCR public website within 30 days following placement in the facility's CCR Operating Record.

**APPENDIX A**  
**CERTIFICATION**

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**CERTIFICATION**

I certify that this Closure Plan fulfills the minimum requirements of 40 CFR 257.102, as applicable. This certification is based on my review of the Closure Plan and operational information about the CCR unit.

**Gary J. Leonards, P.E.**

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Name

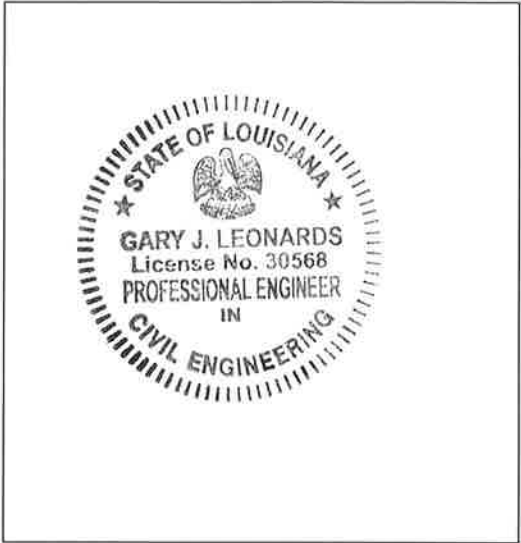
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**Louisiana**

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