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CLOSURE AND POST-CLOSURE CARE PLAN

BYPRODUCT STORAGE AREA, C.D. MCINTOSH POWER PLANT

Prepared for

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Prepared by

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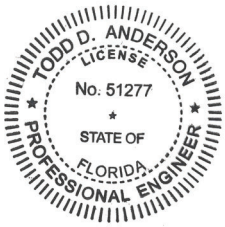
Project FR3715D

September 1, 2022

PROFESSIONAL ENGINEER CERTIFICATION

I, Todd Anderson, being a Registered Professional Engineer, in accordance with the Florida Professional Engineer's Registration, do hereby certify to the best of my knowledge, information, and belief, that the information included in this Closure and Post-Closure Care Plan dated September 1, 2022, meets the requirements of §257.102 and §257.104, that this certification is true and correct, and has been prepared in accordance with generally accepted good engineering practices.



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Todd D. Anderson, P.E.

State of Florida Licensed Professional Engineer, No. 51277

Project Number: FR3715D

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1. OVERVIEW

On behalf of Lakeland Electric ("LE"), Geosyntec Consultants, Inc. ("Geosyntec") has prepared this Coal Combustion Residuals (CCR) Landfill Closure and Post-Closure Care Plan for the Byproduct Storage Area ("BSA") at the C.D. McIntosh Power Plant ("MPP" or "Site"). This plan was prepared in accordance with Title 40, Part 257, Subpart D of the Code of Federal Regulations to meet the requirements of §257.102(b) for closure of coal combustion residual ("CCR") landfills. LE will use the information contained in this plan for the closure of the BSA.

The MPP and associated facilities are operated by LE on a 530-acre site located at 3030 East Lake Parker Drive in Lakeland, Florida as indicated on Figure 1. The Site is bordered by undeveloped lakes and marsh land to the north and east and Lake Parker to the south and west. The undeveloped lakes and marsh land were created from phosphate mining in the late 1960s to early 1970s.

LE operates one fossil fuel fired steam generator and two gas turbines at MPP capable of producing a combined nominal 510 Megawatts. An additional coal burning electric generating unit at MPP was retired on April 4, 2021. CCR produced by the former coal burning unit prior is stored in the BSA. The BSA encompasses approximately 44 acres and contains approximately 2.91 million cubic yards of CCR.

CLOSURE PLAN

1.1 Closure Approach

The BSA will be closed by leaving CCR in place and installing a final cover system, as required by §257.102(a). The final cover system will be a geomembrane-artificial turf system (i.e., ClosureTurf®, hereafter referred to as ClosureTurf). The BSA final cover system will control the post-closure release of CCR and to minimize the need for long term maintenance. Closure will be conducted in accordance with this Closure Plan and the State of Florida Conditions of Certification for MPP and the Combustion By-Product Storage Facility Operations Manual. This Closure Plan may be amended in accordance with the requirements of §257.102(b)(3) should there be a change in operation or unanticipated events that would substantially affect the written Closure Plan.

The steps necessary to complete the closure of the BSA are:

- Prepare the construction documents;
- Secure a contractor to perform the work;
- Secure ClosureTurf materials;
- Secure a professional engineer to provide construction quality assurance and closure certification;
- Construct the final cover system; and
- Complete the construction certification.

1.1.1 Estimated Maximum Inventory of CCR

The current BSA design provided for approximately 3.6 million cubic yards of CCR storage capacity and the BSA currently contains approximately 2.91 million cubic yards of CCR. This volume was derived using electronic computer aided design ("CAD") files with a bottom elevation of approximately 140 ft-NGVD and the estimated final elevations of the CCR.

1.1.2 Largest Area Requiring Cover System

The BSA footprint requiring a final cover system is approximately 44 acres. However, Closure Turf will also be used to line the stormwater ditches to reduce long-term maintenance costs. The total area with ditches is approximately 53 acres.

1.2 Final Cover System

The final cover system for the BSA will be an alternative final cover system using the ClosureTurf system, patented by WatershedGeo, with a three-layered system [WatershedGeo, 2019] that consist of:

- Structured geomembrane;

- Nonwoven geotextile with high density polyethylene ("HDPE") glass blades (i.e., engineered turf); and
- Sand infill ballast.

The permeability of the final cover system will be less than or equal to the permeability of the material at the bottom of the BSA. Each ClosureTurf component will be customized to achieve the required engineering properties (i.e., interface shear strength, infill erosion resistance, etc.) and satisfy aesthetic requirements (i.e., engineered turf color). The final cover system for the BSA will meet the requirements of §257.102(d)(3).

Very little if any settlement is anticipated due to the CCR materials and the way they were placed in the BSA. The final cover system will accommodate differential settlements that may occur during post closure care.

1.3 Stormwater Management System

The final stormwater system for the BSA will direct runoff from the BSA to Fish Lake. The top deck will be graded and berms installed to direct water to the west into channels and ultimately into the perimeter ditch system that drains into fish lake. The mid-height bench will also be used to direct water into channels that lead to the perimeter ditch system.

1.4 Schedule

The BSA will be closed in accordance with the requirements of §257.102(e) and (f). Closure activities for the BSA are outlined in Table 1, below. Closure milestones and activities are approximate and certain activities will overlap.

Table 1. BSA Closure Schedule

Activity	Timeframe	Status	Regulatory Reference
Notice to Intent to Initiate Closure	22Q4	Ongoing	§257.102(g)
Closure Permitting	22Q3	Ongoing	§62-701.805, F.A.C.
Pre-Closure Activities	22Q1	Ongoing	Not applicable
Start Closure Construction	23Q2		Not applicable
Closure Completion	23Q4		§257.102.(f)
Deed Notation	24Q1		§257.102(h)

1.5 Closure Care Plan Amendment

The closure plan will be amended if necessary, according to 257.102(b).

2. POST CLOSURE CARE PLAN

2.1 Overview

Post-closure care for the BSA CCR unit will be conducted in accordance with §257.104 [as adopted by reference in subsection §62-701.804(3), F.A.C.].

The post-closure care period for the BSA is 30 years, unless at the end of the post-closure care period the CCR unit is operating under assessment monitoring in accordance with §257.95. Under such circumstances, the CCR unit must remain in post closure until the CCR unit returns to detection monitoring in accordance with §257.95.

This section describes LE's plan for post-closure care of the BSA CCR unit by detailing the monitoring and maintenance requirements, point of contact, site access control, planned property use during the post-closure care period, and amendment provisions.

2.2 Inspection and Maintenance Activities

LE will maintain the integrity and effectiveness of the final cover system, including making repairs to the final cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and prevent run-on and run-off from eroding or otherwise damaging the final cover.

LE will monitor and maintain the BSA final cover system and stormwater management system. During post-closure care, the final cover system and the stormwater management system will be inspected on a quarterly basis (at a minimum) and the BSA-area groundwater quality will be monitored on a semi-annual basis.

Final cover monitoring will be conducted on a quarterly basis, but may be conducted more frequently (e.g., following a major storm event). The final cover will be inspected for signs of final cover system deformations (e.g., depressions and expansions), loss of sand infill ballast, and impaired stormwater management infrastructure. Observed deficiencies or concerns noted during post-closure care inspections will be documented and addressed as soon as feasible. LE will maintain the integrity and effectiveness of the final cover system by repairing observed deficiencies.

2.3 Groundwater Monitoring Activities

Maintaining the groundwater monitoring system and monitoring the groundwater in accordance with the requirements of §257.90.

2.4 Point of Contact

During the post-closure care period, the following person(s) or office can be contacted about the facility:

City of Lakeland - Lakeland Electric
C.D. McIntosh Jr. Power Plant – Plant Manager
3030 East Lake Parker Drive
Lakeland, FL 33805
863-834-9535
customerservice@lakelandelectric.com

2.5 Planned Property Use During Post-Closure

At the present time, there is no planned use of the facility after closure. If current plans change, an amendment to this post-closure care plan will be prepared and submitted as required by §257.104(d)(3). Future property after closure will incorporate maintenance of the integrity of the final cover system and other components of the containment system. Furthermore, the functionality of the groundwater monitoring system will be maintained.

2.6 Post-Closure Care Plan Amendment

The post-closure care plan will be amended if necessary, according to §254.102(d)(3).

2.7 Notification of Completion of Post-Closure Care

Within 60 days of completion of post-closure care, LE will prepare a notification of post-closure care completion which will be certified by a qualified professional engineer verifying that the post-closure care has been completed in accordance with the closure plan that meets the requirements of §257.104. The notice will be placed in LE's operating record, FDEP will be notified of post-closure care completion, and the notice will be placed on its publicly accessible internet site as specified in §257.104 [as adopted by reference in §62-701.804(3), F.A.C.].

3. REFERENCES

WatershedGeo (2019), "ClosureTurf Design Guidelines Manual", prepared by Watershed Geosynthetics, May 2019.