DEMONSTRATION OF UNSTABLE AREA

BYPRODUCT STORAGE AREA

FINAL - REVISION 1

LAKELAND ELECTRIC

C.D. McINTOSH POWER PLANT

LAKELAND, FLORIDA

Prepared For:
City of Lakeland
Department of Electric Utilities
501 East Lemon Street
Lakeland, Florida 33801

Prepared By:
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August 23, 2018

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August 23, 2018

Steve Marshall
Lakeland Electric – McIntosh Power Plant
3030 East Lake Parker Drive
Lakeland, FL 33805-9513

Sent via email to: **steve.marshall@lakelandelectric.com**

Subject: **Lakeland Electric, CD McIntosh Power Plant CCR Disposal Area – 40 CFR 257.64 – Unstable Area**

Dear Steve:

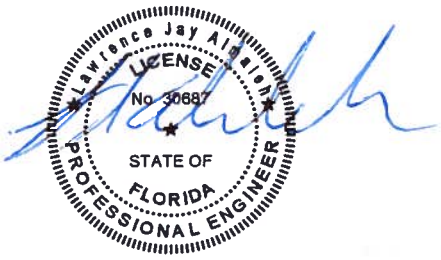
The City of Lakeland – Lakeland Electric (Lakeland) operates the coal-fired generator Unit 3 at the C.D. McIntosh Power Plant located at 3030 East Lake Parker Drive, Lakeland, Florida. The Coal Combustion Residual (CCR) byproducts are stored in a landfill at the plant. The landfill receives fly ash, bottom ash, and synthetic gypsum produced by Unit 3. The combustion by-products are stored separately within the landfill area and sold for beneficial reuse.

This document serves as Lakeland's certification of the demonstration that the existing CCR landfill is not located in an unstable area. The recent regulatory restrictions found in 40 C.F.R. Sections 257.60 through 257.63 related to placement above the uppermost aquifer, wetlands, fault areas, and seismic impact zones do not apply since the facility is an existing CCR landfill as defined in Section 257.53.

Additionally, per 40 C.F.R Section 257.50(d), McIntosh's North Landfill is exempt from the provisions of 40 C.F.R. Section 257 since it ceased receiving CCR materials before October 19, 2015.

CERTIFICATION

In accordance with the Code of Federal Regulation Title 40, Part 257, Subpart D, Section 257.64, this letter certifies that the C.D. McIntosh Power Plant's Byproduct Storage Area is not in an unstable area. Good engineering practices have been incorporated into the design of the existing Lakeland CCR landfill to ensure the integrity of the structural components will not be disrupted.



Larry Almaleh P.E

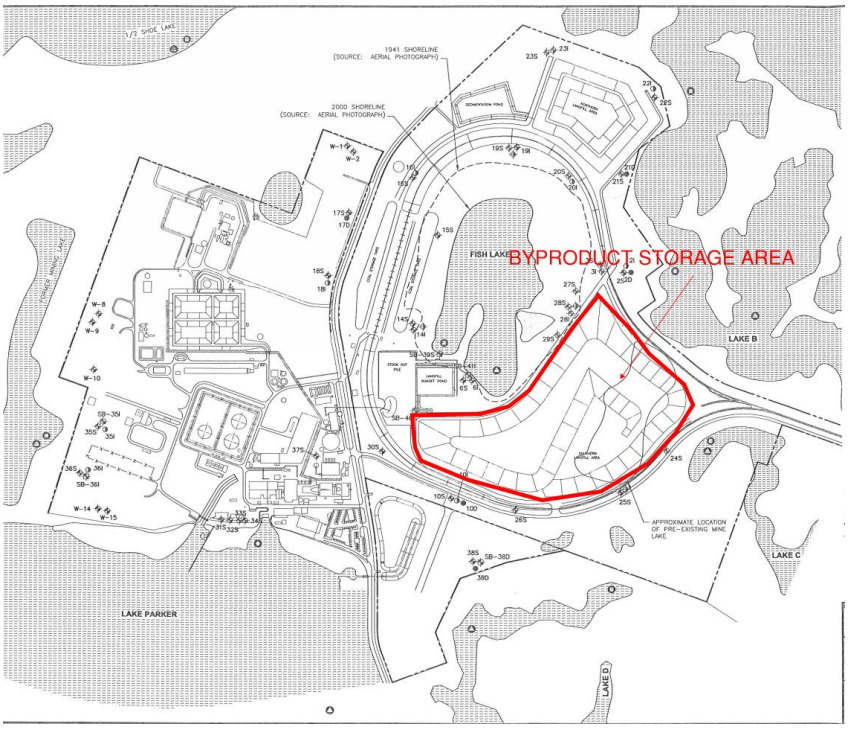
1.0 INTRODUCTION

The C.D. McIntosh Power Plant is owned and operated by the City of Lakeland Department of Electric Utilities. The main entrance to the plant is located at 3030 East Lake Parker Drive, Lakeland, Florida. The plant encompasses 530 acres.

1.1 Byproduct Storage Area Location

Unit 3 is the only coal fired generator within the power plant. Coal combustion residual (CCR) materials from the plant are stored within the Byproduct Storage Area (BSA). The BSA is located on the southeast corner of the power plant area. See Figure 1.

Figure 1 LOCATION OF BYPRODUCT STORAGE AREA



The BSA facility was certified to open in 1981.

1.2 Byproduct Materials

The C.D. McIntosh Power Plant uses an electrostatic precipitator and a forced oxidation system to remove fly ash and sulfur dioxides from the steam generator exhaust gases. The resulting fly ash, bottom ash, and gypsum are stored separately and sold for beneficial reuse.

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2.0 DEMONSTRATION OF UNSTABLE AREA

In accordance with 40 CFR 257.64, the following factors must be considered when determining if an area is unstable, local soil conditions, local geologic features, and local human-made features. Engineering judgement related to environmental, geologic, or geotechnical conditions are based on best available data and actual conditions and may vary from those encountered at the at the locations were data are obtained despite the use of due care.

2.1 On-site Local Soil Conditions

The BSA is within a footprint of a former phosphate mine that consisted of very loose to loose cast overburden fill sand with silt or clay lenses overlying the remnant phosphate matrix. A test fill had been placed in the pit during construction and the material used to fill the pit was fine sand classified as SP/SM in accordance with ASTM D2487. The material was end-dumped into water to fill the pit and compacted with a bulldozer when fill was immediately above the water table. The groundwater below the landfill is shallow and varies with climatic and seasonal changes. The on-site soil conditions do not indicate the area is unstable.

2.2 On-site Local Geologic Features

Below the sand fill are thin discontinuous silt and clay lenses. The silt and clay lenses overlie the remnant phosphate matrix that was not removed during the mining operation. Below the phosphate is the dense, hard calcareous silt and clay with decomposed limerock layers of the Hawthorne Formation. The on-site local geologic conditions do not indicate the area is unstable.

2.3 On-site Local Human-made Features

The BSA is on a former phosphate mine and sand fill was used to raise the grade above the groundwater table to allow the mine to be constructed. A comparison of cone penetration test results in the fill and in the native soil borings showed the engineering properties of the fill were similar to the native soils. The on-site local human-made features do not indicate the area is unstable.