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## Department of Environmental Protection

Jeb Bush Governor Twin Towers Office Building 2600 Blair Stone Road Tallahassee, Florida 32399-2400

David B. Struhs Secretary

October 8, 2002

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Keith Hulbert General Manager Lakeland Utilities 501 East Lemon Street Lakeland, Fl 33801-5079

Re: DEP File No. PSD-FL-245, PA 74-06 Lakeland McIntosh Unit No. 5

Dear Mr. Hulbert:

The Department reviewed your request to modify the PSD Permit relative to start-up emissions. The Department has additionally reviewed the May 24, 2002 summary provided by Ms. Farzie Shelton and Mr. Timothy Bachand concerning actual emissions data during Unit 5 start-up periods. As a result of this review, the Department has concluded that a permit modification may be granted. Accordingly, this request is acceptable as indicated herein.

## Permit PSD-FL-245 is hereby modified as follows:

- 17. The permittee shall <u>install</u> design the stationary gas turbine, ducting, possible future heat recovery steam generator, and stack(s) to accommodate installation of SCR equipment and/or <u>install</u> an oxidation catalyst. The oxidation catalyst shall be designed for a minimum 90% destruction efficiency at base load in the event that the ULN technology fails to achieve the NOX limits given in Specific Condition No. 20 and 21 or the earbon monoxide (CO) limits given in Specific Condition 22 are not met. [Rule 62-4.070, F.A.C.]
- 22. Carbon Monoxide (CO) emissions: Prior to May 1, 2002, the concentration of CO (@15% O2 in the exhaust gas when firing natural gas shall not exceed 25 ppmvd when firing natural gas and 90 ppmvd when firing fuel oil as measured by EPA Method 10. CO emissions (at ISO conditions) shall not exceed 145 lb/hr (gas) and 539 lb/hr (oil). [Rule 62-212.400, F.A.C.]

Prior to August 1, 2003 CO emissions shall be minimized through the use of best operating practices and properly tuned combustors.

After July 31, 2003 May 1, 2002, the concentration of CO in the exhaust gas shall be additionally controlled by the use of an oxidation catalyst with a minimum of 90% CO removal efficiency (based upon design at base load). The CO emissions shall be tested annually at full load and shall not exceed 2 ppmvd when firing natural gas as measured by EPA Method 10. The oxidation catalyst shall be maintained according to manufacturers recommendations, however in the event that CO emissions exceed 2 ppmvd (as demonstrated by annual testing above) the permittee shall implement a remedy and re-test within 90 days of operation. Should the re-test result in CO emissions exceeding 2 ppmvd the remedy shall be to completely replace the oxidation catalyst. when firing natural gas shall not exceed 25 ppmvd when firing natural gas and 90 ppmvd when firing fuel oil as measured by EPA Method 10. CO emissions (at ISO conditions) shall not exceed 106 lb/hr (gas) and 386 lb/hr (oil). [Rule 62-212.400, F.A.C.]

25. Volatile Organic Compounds (VOC) Emissions: The concentration of VOC in the exhaust gas when firing natural gas shall not exceed 4 ppmvd when firing natural gas and 10 ppmvd when firing fuel oil as assured

by EPA Methods 18, and/or 25 A. VOC emissions (at ISO conditions) shall not exceed 10 lb/hr (gas) and 25 lb/hr (oil). [Rule 62-212.400, F.A.C.]

Prior to August 1, 2003 VOC emissions shall be minimized through the use of best operating practices and properly tuned combustors.

After July 31, 2003 VOC emissions shall be additionally controlled through the use of an oxidation catalyst. CO emissions shall be employed as a surrogate for VOC emissions and no further annual testing will be required.

26. Excess emissions resulting from startup, shutdown, malfunction or fuel switching shall be permitted provided that best operational practices are adhered to and the duration of excess emissions shall be minimized. Excess emissions occurrences shall in no case exceed four hours in any 24-hour period for cold startup or two hours in any 24-hour period for other reasons unless specifically authorized by DEP for longer duration.

During any calendar day in which a start-up, shutdown, or fuel change occurs, the following alternative NO<sub>x</sub> limit applies:

100 lb/hr on the basis of a 24-hour average

200 lb/hr on the basis of a 24-hour average if fuel oil is fired during a start-up or shut-down within the 24-hour period

20. The following table is a summary of the BACT determination and is followed by the applicable specific conditions. Values for NO<sub>X</sub> are corrected to 15% O<sub>2</sub>. Values for CO are corrected to 15% O<sub>2</sub>. [Rule 62-212.400, F.A.C.]

Operational Mode	NO <sub>X</sub> (ppm)	CO (ppm)	VOC (ppm)	PM/Visibility (% Opacity)	Technology and Comments
Simple Cycle	25 NG (basis) 237 lb/hr (24-hr avg) 42 - FO (3 hr avg)	25 – NG or 10 – Ox Cat 90 – FO	4 NG 10 FO	10	DLN on gas, WI on oil. Applies until 05/1/2002 - Clean fuels, good combustion
Simple Cycle	9-NG (basis) 85 lb/hr (24-hr avg) 42-FO (3-hr avg)	25 - NG or 10 - Ox Cat 90 - FO	4-NG 10-FO	<del>10</del>	ULN on gas, WI on oil. Applies after 05/1/2002 Clean fuels, good combustion
Simple Cycle	9 NG (3 hr avg) 15 FO (3 hr avg)	25 - NG or 10 - Ox Cat 90 - FO	4 - NG 10 - FO	10	Hot SCR. Applies not later than 05/1/2002 if 9 ppm NO <sub>X</sub> not achievable by ULN. Clean fuels, good combustion.
Combined Cycle	7.5 - NG (3 hr avg) 15 - FO (3-hr avg)	25 NG or 10 Ox Cat 90 FO Oxidation Catalyst (annual test 2 ppm criteria at full load firing natural gas.)	4—NG 10—FO Oxidation Catalyst	10	Conventional SCR with Oxidation Catalyst. unless simple cycle limits are achieved on or before 05/01/2002. Clean fuels, good combustion

No other changes to the permit are authorized by this action.

A copy of this letter shall be filed with the referenced permit and shall become part of the permit. This permit modification is issued pursuant to Chapter 403, Florida Statutes. Any party to this order (permit modification) has the right to seek judicial review of it under Section 120.68, F.S., by the filing of a Notice of Appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the Clerk of the Department of Environmental Protection in the Office of General Counsel, Mail Station 35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000, and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within (thirty) days after this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

Howard L. Rhodes, Director Division of Air Resources

Management

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this fixent to Issue PSD Permit Modification (including the Public Notice of Intent to Issue PSD Permit Modification and the Praft permit) was sent by certified mail (\*) and copies were mailed by U.S. Mail before the close of business on /0/8/02 person(s) listed:

Mr. Keith Hulbert, Lakeland Utilities \*

Ms. Farzie Shelton, Lakeland Utilities

Mr. Gregg Worley, EPA

Mr. John Bunyak, NPS

Mr. Bill Thomas, SWD

Mr. Buck Oven, DEP

Mr. Joe King, Polk County

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

rie Tibem October 8, 2002