



Farzie Shelton, chE; REM

Manager of Environmental Affairs

September 24, 2001

Clair H. Fancy, P.E., Chief
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399

**RE: C.D. McIntosh, Jr. Power Plant, Unit No. 3
Request to Revise Permit No. PSD-FL-008
Use of Harvested Biomass as Fuel**

Dear Mr. Fancy:

On July 8, 1999, in a letter accompanied with a permit application to the Department Lakeland Electric requested modification to the above referenced PSD permit to accommodate the use of harvested biomass as fuel. Since we are not actively pursuing utilization of biomass presently, therefore, we are writing to request the withdrawal of our PSD permit modification application. However, we reserve the right to submit a PSD permit modification application for this activity if Lakeland Electric decide to pursue the utilization of this fuel in the future.

If you should have a question, please do not hesitate to contact me.

Sincerely

Farzie Shelton

City of Lakeland ☉ Department of Electric Utilities

501 East Lemon Street ☉ Lakeland, FL 33801-5050 ☉ (863) 834-6603 ☉ Fax (863) 834-8187 ☉ Message System 834-6592

farzie.shelton@lakelandgov.net

Florida Department of
Environmental Protection

Memorandum

Date: August 9, 2001

To: Bill Proses, P.E.
District Air Compliance Supervisor

Through: Gerald Kissel, P.E. *GK*
District Air Permitting Supervisor

From: Ann Quillian, P.E. *AQ*
Air Permit Engineer

cc: Al Linero, P.E., P.E. Administrator, New Source Review

Subject: Lakeland Electric
C.D. McIntosh Power Plant, Unit #3 (E.U. No. 006)
Permit Nos. 1050004-003-AV (Title V Permit Revision Project No. 1050004-009-AV)
1050004-002-AC/PSD-FL-008(B)

RECEIVED

AUG 13 2001

BUREAU OF AIR REGULATION

Background

On May 4, 2001, the Department received a letter (see Attachment A) from Lakeland Electric regarding five years of annual testing for sulfuric acid mist (SAM) as related to Condition E.43 of the Revision to the Title V Operation Permit No. 1050004-003-AV (Title V Permit Revision Project File No. 1050004-009-AV) and Condition 9 of PSD-FL-008(B). Condition E.43 states:

*E.43. The City shall maintain and submit to the Department on an annual basis for a period of five years from the date that the unit is initially co-fired with petroleum coke, information demonstration in accordance with 40 CFR 52.21(b)(33) and 40 CFR 52.21(b)(21)(v) that the operational changes did not result in emissions increases of carbon monoxide, nitrogen oxides, or sulfuric acid mist.
[PSD-FL-008(B)]*

The federal requirements referenced in Condition E.43 are as follows

40 CFR 52.21(b)(21)(v):

For an electric utility steam generating unit (other than a new unit or the replacement of an existing unit) actual emissions of the unit following the physical or operational change shall equal the representative actual annual emissions of the unit, provided the source owner or operator maintains and submits to the Administrator on an annual basis for a period of 5 years from the date the unit resumes regular operation, information demonstrating that the physical or operational change did not result in an emissions increase....

40 CFR 52.21(b)(33):

Representative actual annual emissions means the average rate, in tons per year, at which the source is projected to emit a pollutant for the two year period after a physical change or change in the method of operation of a unit, (or a different consecutive two year period within 10 years after that change, where the Administrator determines that such period is more representative of normal source operations), considering the effect any such change will have on increasing or decreasing the hourly emissions rate and on projected capacity utilization....

Findings

Review of the test reports from 1996 until 2001 indicates that tests for the purpose of meeting this requirement were conducted as follows:

Testing for Compliance with Condition E.43 (Title V Permit) and Condition 9 (PSD-FL-008(B)):

	1996	1997 *	1998	1999	2000	2001
Sulfuric Acid Mist (SAM)	X	X	X	X		X
Carbon Monoxide (CO)	X	X				
Nitrogen Oxides (NO _x)	X	X				

*Two tests were performed in 1997. One was in February and the other in September, 1997.

In the above table, you will note that Lakeland has not performed testing for Carbon Monoxide (CO) nor Nitrogen Oxides (NO_x) to meet the requirement in Condition E.43 (Title V Permit) or Condition 9 (PSD-FL-008(B)), since 1997. No testing was performed in the year 2000. However according to the permittee and the permittee's consultant, Lakeland did not burn enough pet-coke to perform an emission test in the year 2000.

On February 28, 2001, the Department received a copy of a correspondence from Ken Kosky, Golder Associates to Farzie Shelton, Lakeland Electric (see Attachment B). In this correspondence, Mr. Kosky makes the conclusion that no significant increase in emissions has occurred with the burning of pet-coke. However, Mr. Kosky bases his conclusions using tests from 1996 and 1997 as well as AP-42 emission factors. He extrapolated the 1996 and 1997 emission test results to the year 2000, based on the lower amount of pet-coke combusted.

Conclusions

1. Lakeland Electric did not fully meet the requirements of Condition E.43 of the Title V Permit nor Condition 9, PSD-FL-008(B) to demonstrate that no significant increase in emissions of CO, NO_x, or SAM would occur as a result of burning pet-coke.
 - a. Information provided by Ken Kosky, Golder Associates through Lakeland Electric does not fully meet the requirement to demonstrate that the operational changes did not result in emissions increases. The data presented in the test reports of 1996 and 1997 are too variable to make a conclusion, which Ken Kosky mentions in his June 29, 2001 fax to Ann Quillian, FDEP (see Attachment C). However, Mr. Kosky uses this information to extrapolate to the year 2000 to reach his conclusion that no significant emissions increase had occurred.
 - b. According to the sulfuric acid mist (SAM) test results (1996 - 2001), it appears that SAM emissions increased as a result of burning pet-coke.
2. Lakeland Electric failed to test this emission unit for CO and NO_x for the purpose of meeting this requirement, since 1997.

Note: This staff assessment is preliminary and is designed to assist in the review of the information provided prior to final agency action. The comments provided herein are not the final position of the Department and may be subject to revision pursuant to additional information and further review.



Farzie Shelton, chE; REM

Manager of Environmental Affairs

D.E.P.

ATTACHMENT A

April 30, 2001

MAY 04 2001
Southwest District Tampa

Mr. William C. Thomas P.E.
Administrator
Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, Florida 33619

RE: C.D. McIntosh Power Plant
Permit No. 1050004-009-AV
Unit #3 - E.U. 006

Dear Bill:

In accordance with the above referenced Title V permit condition E.43, Unit Number 3 shall be tested for sulfuric acid mist (SAM) annually for a period of five years. Our last test, performed in January of 2001, completed the five years of testing requirement for SAM. All test reports, annually, and certifications were submitted to your office for the Department's review.

Therefore, we are writing to notify you of the completion of this five-year testing obligation and that Unit #3 will forgo any future testing for SAM unless the Department notifies us otherwise.

Thank you for your consideration in this matter. Please feel free to contact me should you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Farzie Shelton', is written over a horizontal line.

Farzie Shelton

Cc Mr. Clair Fancy P.E.
Chief of the Bureau of Air Management
Division of Air Resources Management

City of Lakeland • Department of Electric Utilities

501 East Lemon Street • Lakeland, FL 33801-5050 • (863) 834-6603 • Fax (863) 603-5670 • Message System 834-6592

farzie.shelton@lakelandgov.net



Farzie Shelton, chE; REM
Manager of Environmental Affairs

VIA
ATTACHMENT B

D.E.P.

FEB 28 2001

Southwest District Tampa

February 27, 2001

Mr. William C. Thomas P.E.
Administrator
Department of Environmental Protection
3804 Coconut Palm Drive
Tampa Fl 33619

Re: C. D. McIntosh Jr. Power Plant
Unit No. 3 PSD-FL-008 (B) Condition 9 and Title V Permit No.: 105004-009-AV - E.U. ID No. 006
Condition E.43

Dear Mr. Thomas:

In compliance with the above referenced permits, we are submitting for your review the stack testing result conducted by the Catalyst Air Management, Inc. on February 9, 2001. Additionally, we are enclosing a letter signed and sealed by Mr. Ken Kosky P.E. of Golder Associates analyzing the data and demonstrating that the utilization of petroleum coke for this unit does not increase the emission of CO, NOX, and sulfuric acid mist (SAM). Also enclosed you will find a certification by Mr. Roger D. Haar (City Manager) our Responsible Official.

If you should have any questions, please do not hesitate to contact me.

Sincerely

Farzie Shelton

Enc.

City of Lakeland ● Department of Electric

Golder Associates Inc.

6241 NW 23rd Street, Suite 500
Gainesville, FL 32653-1500
Telephone (352) 336-5600
Fax (352) 336-6603



D.E.P.

FEB 28 2001

0037548

Southwest District Tampa

February 26, 2001

Lakeland Electric – Power Supply
City of Lakeland
501 East Lemon Street
Lakeland, Florida 33801

Attention: Ms. Farzie Shelton, Manager Environmental Affairs

RE: C. D. MCINTOSH, JR. POWER PLANT – UNIT 3
PSD-FL-008(B) CONDITION 9 AND TITLE V PERMIT 1050004-009-AV
CONDITION E. 43

Dear Farzie:

This correspondence and certification address the requirements of Condition 9 of PSD-FL-008(B) and Condition E. 43. of Title V Permit 1050004-009-AV regarding co-firing of Petroleum Coke with Coal. The conditions state: "The City shall maintain and submit to the Department on an annual basis for a period of 5 years from the date the unit is initially co-fired with petroleum coke, information demonstration in accordance with 40 CFR 52.21(b)(33) and 40 CFR 52.21(b)(21)(v) that the operational changes did not result in emission increases of carbon monoxide (CO), nitrogen oxides (NO_x), or sulfuric acid mist (SAM)."

During 2000, the City reported 6,575.4 tons of petroleum coke co-fired with coal. This represents 32,876.8 tons of a mixture of 20-percent petroleum coke with 80-percent coal. The total reported amount of coal burned in 2000 was 967,248.9 tons. The amount of petroleum coke fired in 2000 was about 0.7 percent of the total coal fired in 2000, and the co-fired mixture at 20-percent petroleum coke was about 3.4 percent of the total coal fired in 2000. Given the small amount of petroleum coke co-fired with coal, testing could not be performed. Therefore, the evaluation of Conditions 9 and E.43 will be based on a conservative calculation from previous test data. These test data were based on co-firing 20-percent petroleum coke with coal.

The previous CO test data determined an emission rate of 0.26 lb/ton when co-firing petroleum coke with coal and 0.12 lb/mmBtu when firing coal. This represents a difference in emission rates of 0.14 lb/mmBtu. When firing 32,876.8 tons of 20-percent petroleum coke with coal the emissions for co-firing are 4.3 tons, while the emissions for coal are 2.0 tons. While the difference is a calculated increase of 2.3 tons, this is much less than the PSD significant emission rate of 100 tons as provided in Rule 62-212.400 and 40 CFR 52.21. It should be noted that the AP-42 emission factors for coal firing alone is 0.5 lb/ton, which is higher than either the co-firing or coal only tests.

The previous test data for NO_x determined an emission rate of 11.6 lb/ton when co-firing petroleum coke with coal and 12.8 lb/mmBtu when firing coal. This represents a difference in emission rates of 1.2 lb/mmBtu. When firing 32,876.8 tons of 20-percent petroleum coke with coal the emissions for co-firing are 190.6 tons, while the emissions for coal are 209.8 tons. The difference is a decrease of 19.2 tons. Therefore, no increase occurred in emissions of NO_x.

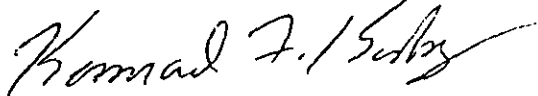
The previous test data for SAM determined an emission rate of 0.475 lb/ton when co-firing petroleum coke with coal and 0.355 lb/mmBtu when firing coal. This represents a difference in emission rates of 0.12 lb/mmBtu. When firing 32,876.8 tons of 20-percent petroleum coke with coal the emissions for co-firing are 7.8 tons while the emissions for coal are 5.8 tons. While the difference is a calculated increase of 2 tons, this is much less than the PSD significant emission rate of 100 tons as provided in Rule 62-212.400 and 40 CFR 52.21. Similar to the results for CO, the AP-42 emission factors for SAM when firing only is about 0.55 lb/ton, which is higher than either the co-firing or coal only tests.

The amount of petroleum coke co-fired with coal did not result in a significant net increase emissions as required by Conditions 9 and E.43 of the PSD and Title V permits, respectively.

Please call me at (352) 336-5600 if you have any questions.

Sincerely,

GOLDER ASSOCIATES INC.



Kennard F. Kosky, P.E.
Principal
Florida Professional Engineer No. 14996



KFK/jkw/jkw

Fax

ATTACHMENT C

To: Ann Quillian, P.E.

Fax Number: (813) 744-6458

Company: FDEP-Southwest District

Date: June 29, 2001

From: Kennard F. Kosky, P.E.

E-mail: kkosky@golder.com

Project No: 9837510-0500

Voice Mail: (352)336-5600

RE: Lakeland Electric McIntosh Unit 3

Total Pages (including cover): 1

Hard copy to follow x

MESSAGE

Ann: This is the information requested in your fax dated June 11, 2001. The "previous test data" referenced in my February 26, 2001 letter was data taken in 1996 and 1997. During these years testing was conducted for both coal only and co-firing petroleum coke (PC) with coal. During the most recent year (i.e., 2000) that petroleum coke was co-fired the timeframe was too short to schedule and obtain valid tests. As a result I had to rely on the previously available test data. The most current test data I had was for 1996 and 1997 and was as follows:

Fuel	Year	Fuel Input (tons/hr)	CO (lb/hr)	NOx (lb/hr)	H2SO4 (lb/hr)
Coal	1996	136.49	7.30	1,812	59.87
PC/Coal	1996	133.91	18.9	1,571	70.53
Coal	1997	128.41	24.38	1,572	34.81
PC/Coal	1997	128.86	48.77	1,477	54.64

These data were used to calculate the lb/ton emission factor noted in my correspondence. Please note that I had a typo in labeling some of the emission factors as lb/MMBtu when they should have been lb/ton. Due to the small amount of petroleum coke used in 2000 it would not be possible to exceed the PSD significant emission rates using only the lb/ton emission factors. In previous determinations made for 1996 and 1997, EPA emission factors were also used, since the individual tests for both CO and sulfuric acid mist considerable variability. The emission factors used were based on AP-42 and only used to determine coal only emissions.

I did not have a copy of the complete test reports but I will get copies of the relevant information and send. Please call if you have any questions.

Regards, Ken Kosky

cc: Farzie Shelton, Lakeland Electric



Golder Associates

6241 NW 23rd St., Suite 500

Gainesville, FL 32653

U.S.A.

Telephone: (352) 336-5600

Fax: (352) 336-6603

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Permit #:1050004-006-AC PATS: Issue:29-JAN-1999 Expire:29-JAN-2004

Project #/Name	Owner/Company	Type/Sub	Receive
001/AMENDMENTS TO PERMIT PSD-	LAKELAND ELECTRIC	AC /M1	08-DEC-1994
002/PETROLEUM COKE AS FUEL RE	LAKELAND ELECTRIC	AC /M1	19-OCT-1995
003/MCINTOSH POWER PLANT	LAKELAND ELECTRIC	AV /00	14-JUN-1996
004/MCINTOSH POWER PLANT FACI	LAKELAND ELECTRIC	AC /1A	08-DEC-1997
005/MCINTOSH POWER PLANT EARL	LAKELAND ELECTRIC	AV /02	31-AUG-1998
006/CITY OF LAKELAND-MCINTOSH	LAKELAND ELECTRIC	AC /M2	27-JAN-1999
007/CITY OF LAKELAND - UNIT #	LAKELAND ELECTRIC	AC /M1	09-JUL-1999
008/CITY OF LAKELAND - UNIT 5	LAKELAND ELECTRIC	AC /M1	21-SEP-1999
009/C.D. MCINTOSH POWER PLANT	LAKELAND ELECTRIC	AV /02	24-APR-2000
010/C.D. MCINTOSH, JR.,UNIT N	LAKELAND ELECTRIC	AC /M1	29-JUL-2000
/STEAM GENERATOR	LAKELAND ELECTRIC	A0 /2A	23-NOV-1988
/PEAKING UNIT #3, FUEL OIL	LAKELAND ELECTRIC	A0 /2B	15-DEC-1988
/PEAKING UNIT #1, FUEL OIL	LAKELAND ELECTRIC	A0 /2B	15-DEC-1988
/STEAM GENERATOR	LAKELAND ELECTRIC	A0 /2A	20-DEC-1988

Press [NXTBLK] for summary information.
 Count: 14 v

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Permit #:1050003-007-AC PATS:

Issue:30-MAY-2000 Expire:30-MAY-2005

Project #/Name	Owner/Company	Type/Sub	Receive
001/CUSTOM FUEL MONITOR/ISO/L	LAKELAND ELECTRIC	AC /M1	27-JUN-1995
002/LARSEN 8 REV'S	LAKELAND ELECTRIC	AO /MM	23-OCT-1995
003/REVISE TEST DATES - UNITS	LAKELAND ELECTRIC	AO /MM	18-MAR-1996
004/LARSEN POWER STATION	LAKELAND ELECTRIC	AV /00	14-JUN-1996
005/LAKELAND ELECTRIC/WATER U	LAKELAND ELECTRIC	AC /M1	20-MAR-1997
006/LAKELAND/LARSEN ADMIN COR	LAKELAND ELECTRIC	AV /03	26-OCT-1999
007/LAKELAND-LARSEN MEMORIAL	LAKELAND ELECTRIC	AC /M1	25-FEB-2000
008/LAKELAND/LARSEN ADMIN COR	LAKELAND ELECTRIC	AV /03	16-MAR-2000
/LARSEN MEMORIAL UNIT 5	LAKELAND ELECTRIC	AO /99	01-FEB-1985
/STEAM GENERATOR NO. 7	LAKELAND ELECTRIC	AO /99	04-APR-1985
/LARSON MEMORIAL POWER PLA	LAKELAND ELECTRIC	AO /99	04-APR-1985
/LARSEN PLANT--GAS TURBINE	LAKELAND ELECTRIC	AO /00	07-JUN-1988
/LARSON MEMORIAL POWER PLA	LAKELAND ELECTRIC	AO /2A	05-FEB-1990
/LARSON MEMORIAL POWER PLA	LAKELAND ELECTRIC	AO /2A	05-FEB-1990

Press [NXTBLK] for summary information.
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Jeb Bush
Governor

Department of Environmental Protection

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

David B. Struhs
Secretary

May 26, 2000

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Ms. Farzie Shelton, Manager
Environmental Licensing and Planning
Lakeland Electric and Water Utilities Department
501 East Lemon Street
Lakeland, Florida 33801-5079

Re: DEP File No. 1050004³-007-AC (PSD-FL-008C)
C.D McIntosh Jr. Power Plant, Unit 3
Use of Harvested Biomass as Fuel

Dear Ms. Shelton:

This letter is to advise you that the 90-day permit processing clock remains stopped in accordance with your letter dated November 9, 1999 and our letter to you dated November 30.

The November 30 letter included a Preliminary Draft PSD permit modification, for the referenced project at the C. D. McIntosh, Jr Power Plant located at 3030 East Lake Parker Drive, Lakeland, Polk County. We request final resolution of the issues by July 31 so we may proceed to take an official action (such as actually issuing an Intent).

If you have any questions regarding this matter, please call Teresa Heron at 850/921-9529.

Sincerely,

A. A. Linero, P.E. Administrator
New Source Review Section

AAL/al

• Enclosures

Cc: Ron Tomlin, City of Lakeland
• Buck Oven, DEP PPSO

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<p>1. Article Addressed to:</p> <p><i>Jarzie Shelton, Mgr.</i> <i>Lakeland Electric &</i> <i>Water Utilities</i> <i>501 E. Lemon St.</i> <i>Lakeland, FL</i> <i>33801-5079</i></p>	<p>D. Is delivery address different from item? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If YES, enter delivery address below:</p> <p>3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>
<p>2. Article Number (Copy from service label)</p>	<p><i>Z 341 355 299</i></p>
<p>PS Form 3811, July 1999</p>	<p>Domestic Return Receipt 102595-99-M-1789</p>

Z 341 355 299

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Return Receipt Showing to Whom, Date, & Addressee's Address	
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<i>1050004-007-AC</i>	
<i>PSD-FI-008C</i>	

PS Form 3800, April 1995