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BUREAU OF AIR REGULATION

CERTIFIED MAIL

April 1, 2009

Jonathan Holtom, P.E.
Permitting Administrator
Bureau of Air Regulation
Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RE: Larsen Power Plant – Permit 1050003-014-AV

Subject: Annual Certification of Condition C.31.

Dear Mr. Holtom:

Please find the enclosed report from Environmental Consulting & Technology, Inc. to demonstrate compliance with Specific Condition C. 31 of Permit No. 1050003-014-AV that requires an annual representation of normal post-change operations of Unit 8 within 10 years after the turbine seal improvement. As show in the attached table, the Unit 8 improvements did not exceed the PSD significant emission rates in 2008 relative to pre-modification values in 2003. This is the fifth and final emission analysis regarding the improvements on Unit 8 and satisfies all requirements of S.C. C. 31. Also attached is the Responsible Official certification from Mr. Tim Bachand. A copy of this report has been submitted to the Southwest District compliance office.

If you have any questions, please do not hesitate to contact me at (863) 834-8180.

Sincerely,

Bret Galbraith, E.I.
Environmental Permitting
Bret.Galbraith@lakelandelectric.com

Enclosures: Annual Unit 8 PSD review; P.E. certification (T. Davis); R.O. certification (T. Bachand)

Responsible Official Certification

1. Responsible Official Name :

Timothy Bachand, P.E., Manager of Engineering

2. Responsible Official Mailing Address...

Organization/Firm: **Lakeland Electric**

Street Address: **501 E. Lemon St.**

City: **Lakeland**

State: **FL**

Zip Code: **33801-5079**

3. Owner/Authorized Representative Telephone Numbers...

Telephone: **(863) 834-6633**

ext.


Fax: **(863) 834-5670**

4. Responsible Official Email Address: **TIMOTHY.BACHAND@LAKELANDELECTRIC.COM**

5. Responsible Official Statement:

I, the undersigned, am a responsible official of the Title V source addressed in this submittal. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this submission are true, accurate and complete. The air pollutant emissions units and air pollution control equipment described in this submittal will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this submittal to which the Title V source is subject. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in any compliance plan(s) previously submitted.

Item(s) Certified: Charles Larsen Memorial Power Plant Unit 8 PSD Review Submittal


Signature

3/5/09
Date



Environmental Consulting & Technology, Inc.

March 2, 2009

Mr. Bret Galbraith
Environmental Permitting
Lakeland Electric
501 E. Lemon St.
Lakeland, FL 33801-5079

**RE: Charles Larsen Memorial Power Plant
Final Permit No.: 1050003-014-AV
Condition C.31. - Unit 8 Emissions Analysis and Certification for 2008**

Dear Mr. Galbraith:

As required by Florida Department of Environmental Protection (FDEP) Final Title V Air Operation Permit No. 1050003-014-AV Condition C.31., this letter provides an analysis and Professional Engineer's certification regarding the 2008 annual emissions increases associated with the turbine upgrades and peak firing for Charles Larsen Memorial Power Plant Unit 8.

Unit 8 at the Charles Larsen Memorial Power Plant was modified to include turbine upgrades and peak firing. The turbine upgrades for Unit 8 involved enhancements to the compressor discharge (high pressure brush seal) that limited the amount of air leakage. The Unit 8 upgrades potentially resulted in slight increases in heat input and power output. The Unit 8 modifications were authorized by the FDEP as a minor modification to Prevention of Significant Deterioration (PSD) Permit No.: PSD-FL-166(D) and by Construction Permit No.: 1050003-012-AC. As a minor modification, emission increases associated with the Unit 8 modification project were estimated to be below the PSD significance emission rate (SER) thresholds specified in Rule 62-210.200(243), F.A.C.

Final Permit No.: 1050003-014-AV Condition C.31. requires an annual assessment of PSD applicability for the Unit 8 modification project; i.e., an annual analysis of actual emission rates to determine whether the modification project resulted in a significant emission rate increase. Specifically, Condition C.31. states:

C.31. Future Emissions. The owner or operator shall submit to the Permitting Authority on an annual basis, for a period of 5 years representative of normal post-change operations of the emissions unit and within the period not longer than 10 years following the change, information demonstrating that the physical or operational change did not result in an emissions increase. The definition of "representative actual annual emissions" found in 40 CFR 52.21(b)(33), adopted and incorporated by reference in Rule 62-204.800, F.A.C.
[1050003-012-AC/PSD-FL-166D, issued 12/09/2003; 1050003-014-AV; and Rule 62-210.200(Definitions), F.A.C.]

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32606

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FAX (352)
332-6722

Mr. Bret Galbraith
March 2, 2009
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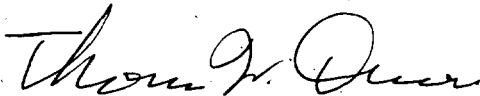
The assessment of whether the Unit 8 modification resulted in a significant emission rate increase for 2008 was conducted by evaluating prior permit application data and comparing pre- and post-modification stack test data. The results of the actual emission rate comparisons for 2008 are provided in Table 1.

As shown in Table 1., the Unit 8 modification project did not exceed the PSD SER's in 2008 relative to the pre-modification values in 2003.

Please contact me at (352) 248-3351 if there are any questions regarding this analysis.

Sincerely,

ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.



Thomas W. Davis, P.E.
Principal Engineer
Florida Professional Engineer License 36777

**Table 1. Lakeland Electric - Charles Larsen Memorial Power Plant Unit 8
Assessment of PSD Applicability - Calendar Year 2008**

Unit 8 2008 Heat Input	959,224	MMBtu/yr - gas
	20,245	MMBtu/yr - oil
Unit 8 2008 Peak Firing	8.0	hr/yr - gas
	8.8	hr/yr - oil
Unit 8 Turbine Upgrade Base Load Heat Input Increase	1.9	% (permit data)
Unit 8 Turbine Upgrade Peak Load Heat Input Increase	19.8	MMBtu/hr - increase in peak vs. base load (permit data)

A. NO_x - December 2008 Stack Test Data

Units	2003 - Base		2008 - Base		2008 - Peak		Base 2008-2003	
	Gas NO _x	Oil NO _x	Gas NO _x	Oil NO _x	Gas NO _x	Oil NO _x	Gas NO _x	Oil NO _x
MMBtu/hr	911.4	994.1	914.1	881.9	1,018.9	979.0		
lb/hr	58.0	127.6	55.4	118.7	59.2	126.8		
lb/MMBtu	0.064	0.128	0.061	0.135	0.058	0.130	-0.0030	0.0062
Change in Emissions - 2008 vs. 2003	-1.4	ton/yr - base						
Totals	0.0159	ton/yr - peak						
	-1.4	ton/yr						
PSD SER	40	ton/yr						
Exceed PSD SER	N							

B. CO - December 2008 Stack Test Data

Units	2003 - Base		2008 - Base		2008 - Peak		Base 2008-2003	
	Gas CO	Oil CO	Gas CO	Oil CO	Gas CO	Oil CO	Gas CO	Oil CO
MMBtu/hr	911.4	994.1	914.1	881.9	1,018.9	979.0		
lb/hr	30.4	10.8	23.7	4.2	6.6	2.8		
lb/MMBtu	0.033	0.011	0.026	0.0048	0.0065	0.0029	-0.0074	-0.0061
Change in Emissions - 2008 vs. 2003	-3.6	ton/yr - base						
Totals	0.00076	ton/yr - peak						
	-3.6	ton/yr						
PSD SER	100	ton/yr						
Exceed PSD SER	N							

C. PM₁₀, NO_x, SO₂, CO, VOC - Permit Data

Units	PM ₁₀		NO _x		SO ₂		CO		VOC	
	Gas	Oil	Gas	Oil	Gas	Oil	Gas	Oil	Gas	Oil
Base Load										
lb/MMBtu ¹	0.0060	0.0250	0.0995	0.1692	0.0028	0.0209	0.0550	0.0567	0.0018	0.0087
MMBtu/yr ²	18,225	385	18,225	385	18,225	385	18,225	385	18,225	385
ton/yr ³	0.055	0.005	0.907	0.033	0.026	0.039	0.501	0.011	0.016	0.002
Peak Load										
lb/MMBtu ¹	0.0060	0.0250	0.0995	0.1692	0.0028	0.0209	0.0550	0.0567	0.0018	0.0087
MMBtu/yr ²	159	174	159	174	159	174	159	174	159	174
ton/yr ³	0.00048	0.00217	0.0079	0.0147	0.00022	0.0176	0.0044	0.0049	0.00014	0.00076
Totals										
ton/yr	0.062		0.962		0.082		0.521		0.019	
PSD SER	15		40		40		100		40	
Exceed PSD SER	N		N		N		N		N	

¹ Maximum emission factor from PSD and Title V permits.

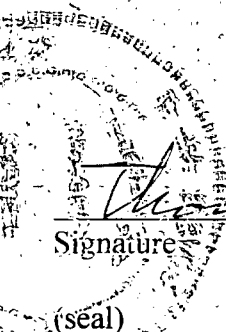
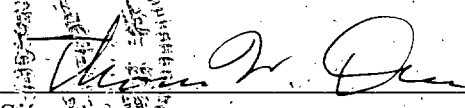
² Increase in heat input due to Unit 8 turbine upgrades.

³ Increase in annual emissions for 2008 due to Unit 8 turbine upgrades.

**CITY OF LAKELAND -- LAKELAND ELECTRIC
CHARLES LARSEN MEMORIAL POWER PLANT
FACILITY ID 1050003**

UNIT 8 PSD APPLICABILITY CERTIFICATION - 2008

Professional Engineer Certification

1. Professional Engineer Name: Thomas W. Davis Registration Number: 36777
2. Professional Engineer Mailing Address: Organization/Firm: Environmental Consulting & Technology, Inc. Street Address: 3701 NW 98th Street City: Gainesville State: FL Zip Code: 32606
3. Professional Engineer Telephone Numbers: Telephone: (352) 332-6230 ext. 351 Fax: (352) 332-6722
4. Professional Engineer Email Address: tdavis@ectinc.com
5. Professional Engineer Statement: <p><i>I, the undersigned, hereby certify that to the best of my knowledge, based on the information and belief formed after reasonable inquiry, that the statements made and data contained in the Charles Larsen Memorial Power Plan Unit 8 assessment of PSD applicability are true, accurate, and complete.</i></p> <div style="display: flex; justify-content: space-between; align-items: flex-end; margin-top: 20px;"><div style="text-align: center;">  _____ Signature (seal)</div><div style="text-align: right;"><div style="text-align: center;"><u>3/2/09</u> Date</div></div></div>