



November 11, 2014

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Florida Department of Environmental Protection
Office of Permitting and Compliance
Division of Air Resources Management
2600 Blair Stone Road, MS # 5505
Tallahassee, Florida 32399-2400

**Re: NSPS, KKKK Applicability Determination for Combustion Turbine Improvements
for Unit 3 at Manatee Plant Florida Power & Light (FPL)
Permit No. 0810010-020-AC/PSD-FL-328D**

In accordance with the Permit No. 0810010-020-AC/PSD-FL-328D Section 3, Condition 4, FPL is providing the required information regarding NOx Emission Rate Change due to Combustion Turbine Improvements for Unit 3.

FPL is using Continuous Emission Monitoring System (CEMS) data for determining the short-term NOx emission rates (in pounds per hour), while operating in the normal combined cycle mode (140-175 MW) and burning natural gas.

Reviewing the data for Units 3A, 3B, 3C and 3D prior to and after improvements, the post change data indicates a slight decrease or no change in NOx emissions on all four units.

Unit 3B was chosen for the NSPS, KKKK Applicability Determination since it showed the least downward trend in NOx emissions.

The result of such testing for unit 3B using the 8 tests (three (3) hours per each test) average of the NOx data prior to and after the permitted improvements shows that NOx emissions are statistically unchanged with 95% confidence. The number (n) of runs used in the testing was 24 runs, each run of one (1) hour duration.

Please see below the Table 1, NOx Emissions Summary Data.

Table 1. NOx Emissions Summary for Unit 3B

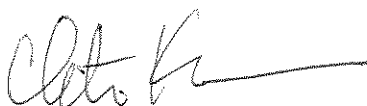
Date of the Testing	NOx (lbs/hr)Average of 8 Tests (3 hr each)	MWh Average of 8 Tests	NOx (lbs/MWh)
August of 2013	13.6	157.0	0.09
August of 2014	13.6	163.0	0.08

As you can see, the NOx emissions (lbs/MWh) average of 24 hours for August 2013 and August 2014 is well below the NSPS, Subpart KKKK, NOx emissions limit of 0.43 lb/MWh. for a modified or reconstructed turbine firing natural gas.

Therefore, based on FPL analysis of the post change NOx emissions data, these units are not subject to Subpart KKKK.

If you have any question or need additional information, please contact me at your convenience.

Sincerely,



Christian Kiernan
PGD Technical Services Environmental General Manger
Florida Power & Light Company
561-691-2781-office

Cc via email:

Mr. Ken Nusche, FPL (ken.nusche@fpl.com)
Mr. Kevin Washington, FPL (kevin_washington@fpl.com)
Ms. Kelley Boatwright, SWD (kelly.boatwright@dep.state.fl.us)
Ms. Cindy Mulkey, DEP Siting Office (cindy.mulkey@dep.state.fl.us)
Ms. Heather Ceron, EPA Region 4 (ceron.heather@epa.gov)

Attachment

NOx Emissions for Unit 3B at FPL Manatee Plant for 2013 vs. 2014

Manatee KKKK Applicability - 3B

GE7FA.03

Run	Date	Time	Nox lb/hr	MW	3 hr Avg. Nox lb/hr	3 hr Avg. MW	3 hr Avg. Nox lb/MW
1	8/27/2013	16:00	13.4	156.6	13.5	157.4	0.09
	8/27/2013	17:00	13.5	156.5			
	8/27/2013	18:00	13.5	159.0			
2	8/27/2013	19:00	13.7	159.9	13.6	159.4	0.09
	8/27/2013	20:00	13.5	159.5			
	8/27/2013	21:00	13.5	158.8			
3	8/28/2013	20:00	13.0	139.8	13.3	152.1	0.09
	8/28/2013	21:00	13.4	158.1			
	8/28/2013	22:00	13.6	158.5			
4	8/29/2013	0:00	14.7	159.3	14.0	159.5	0.09
	8/29/2013	1:00	13.6	159.5			
	8/29/2013	2:00	13.6	159.6			
5	8/29/2013	4:00	13.4	158.1	13.5	158.7	0.09
	8/29/2013	5:00	13.6	158.9			
	8/29/2013	6:00	13.6	159.0			
6	8/29/2013	8:00	13.5	156.6	13.8	156.5	0.09
	8/29/2013	9:00	13.4	157.2			
	8/29/2013	10:00	14.4	155.8			
7	8/30/2013	8:00	13.2	153.3	13.3	153.3	0.09
	8/30/2013	9:00	13.4	153.7			
	8/30/2013	10:00	13.3	152.8			
8	8/30/2013	22:00	13.6	158.7	13.9	158.9	0.09
	8/30/2013	23:00	13.7	158.8			
	8/31/2013	0:00	14.3	159.2			
Average of 8 runs			13.6	157.0	13.6	157.0	0.09

GE7FA.04

Run	Date	Time	Nox lb/hr	MW	3 hr Avg. Nox lb/hr	3 hr Avg. MW	3 hr Avg. Nox lb/MW
1	8/22/2014	0:00	13.9	168.5	13.8	168.4	0.08
	8/22/2014	1:00	13.8	168.4			
	8/22/2014	2:00	13.8	168.3			
2	8/22/2014	3:00	13.8	168.4	13.8	168.6	0.08
	8/22/2014	4:00	13.8	168.7			
	8/22/2014	5:00	13.8	168.7			
3	8/22/2014	6:00	13.8	168.6	13.9	168.2	0.08
	8/22/2014	7:00	13.9	168.3			
	8/22/2014	8:00	14.0	167.8			
4	8/22/2014	22:00	12.5	143.7	13.1	151.1	0.09
	8/22/2014	23:00	13.1	154.5			
	8/23/2014	0:00	13.8	155.1			
5	8/23/2014	2:00	14.0	169.8	13.2	158.2	0.08
	8/23/2014	3:00	13.1	156.9			
	8/23/2014	4:00	12.6	147.9			
6	8/24/2014	21:00	12.8	151.0	13.4	159.1	0.08
	8/24/2014	22:00	13.7	160.5			
	8/24/2014	23:00	13.7	165.8			
7	8/25/2014	1:00	13.9	166.2	13.7	164.7	0.08
	8/25/2014	2:00	13.5	163.0			
	8/25/2014	3:00	13.7	164.9			
8	8/25/2014	4:00	13.8	166.4	13.7	165.3	0.08
	8/25/2014	5:00	13.8	166.1			
	8/25/2014	6:00	13.6	163.5			
Average of 8 runs			13.6	163.0	13.6	163.0	0.08

UNIT 3B

Two-Sample T-Test and CI: 3B 2013 Nox lb/hr, 3B 2014 Nox lb/hr

Two-sample T for 3B 2013 Nox lb/hr vs 3B 2014 Nox lb/hr

	N	Mean	StDev	SE Mean
3B 2013 Nox lb/hr	24	13.600	0.374	0.076
3B 2014 Nox lb/hr	24	13.592	0.434	0.089

Difference = μ (3B 2013 Nox lb/hr) - μ (3B 2014 Nox lb/hr)

Estimate for difference: 0.008

95% upper bound for difference: 0.205

T-Test of difference = 0 (vs <): T-Value = 0.07 P-Value = 0.528 DF = 45

P > 0.05 indicating that assuming the null hypothesis true, this is an observed sample size that supports the null as plausible

2013

Date	Time	2013 Nox lb/hr
8/27/2013	16:00	13.4
8/27/2013	17:00	13.5
8/27/2013	18:00	13.5
8/27/2013	19:00	13.7
8/27/2013	20:00	13.5
8/27/2013	21:00	13.5
8/28/2013	20:00	13.0
8/28/2013	21:00	13.4
8/28/2013	22:00	13.6
8/29/2013	0:00	14.7
8/29/2013	1:00	13.6
8/29/2013	2:00	13.6
8/29/2013	4:00	13.4
8/29/2013	5:00	13.6
8/29/2013	6:00	13.6
8/29/2013	8:00	13.5
8/29/2013	9:00	13.4
8/29/2013	10:00	14.4
8/30/2013	8:00	13.2
8/30/2013	9:00	13.4
8/30/2013	10:00	13.3
8/30/2013	22:00	13.6
8/30/2013	23:00	13.7
8/31/2013	0:00	14.3

2014

Date_1	Time_1	2014 Nox lb/hr
8/22/2014	0:00	13.9
8/22/2014	1:00	13.8
8/22/2014	2:00	13.8
8/22/2014	3:00	13.8
8/22/2014	4:00	13.8
8/22/2014	5:00	13.8
8/22/2014	6:00	13.8
8/22/2014	7:00	13.9
8/22/2014	8:00	14.0
8/22/2014	22:00	12.5
8/22/2014	23:00	13.1
8/23/2014	0:00	13.8
8/23/2014	2:00	14.0
8/23/2014	3:00	13.1
8/23/2014	4:00	12.6
8/24/2014	21:00	12.8
8/24/2014	22:00	13.7
8/24/2014	23:00	13.7
8/25/2014	1:00	13.9
8/25/2014	2:00	13.5
8/25/2014	3:00	13.7
8/25/2014	4:00	13.8
8/25/2014	5:00	13.8
8/25/2014	6:00	13.6