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DIVISION OF AIR  
RESOURCE MANAGEMENT

August 26, 2014

Jeff Koerner, Program Administrator  
Florida Department of Environmental Protection  
Division of Resource Management  
Office of Permitting and Compliance  
2600 Blair Stone Road  
Mail Station #5505  
Tallahassee, Florida 32399-2400

Re: Florida Power & Light – Martin Power Plant – Unit 8  
21900 SW Warfield Blvd.  
Indiantown, Florida 34956  
Actual Emissions Reporting – Revised

Dear Mr. Koerner:

In accordance with the requirements of the Title V Air Operating Permit 0850001-033-AV Section III, D. 33, please see below the Actual Emissions Report for Unit 8 A – D (Revised). This revised report incorporates emissions totals as set forth in F.A.C. 62-210.370 (Amended 2006) using hourly Continuous Emissions Monitoring System (CEMS) data and the methodology shown in Appendix 1.A (attached) to calculate total mass emissions of CO in tons per year, including startup and shutdown cycles. This method differs from that utilized to calculate the values reported February 18, 2014.

There is no change to the NO<sub>x</sub> actual emissions or baseline in this report from the previous report as the appropriate methodology was already being utilized.

The following table shows the 2013 Actual Annual Emissions for Unit 8 A – D:

Unit	2013 Annual Actual Emissions	
	NO <sub>x</sub> (tons/year) (Unchanged)	CO (tons/year) (Revised)
8A	47.5	56.2
8B	52.7	58.2
8C	49.3	40.4
8D	51.4	48.2
Total	200.9	203

The values included in the February report are provided in Appendix 1.B (attached).

Subsequent to its identification by the permittee, the updated methodology for calculating CO mass emissions was applied to the years 2006 through 2010 to determine the appropriate baseline values for comparison to the 2013 Actual Annual Emissions provided above.

The following table provides the updated values for CO mass emissions for 2006 through 2010:

Unit	CO Mass Emissions (tons/year)				
	2006	2007	2008	2009	2010
8A	27.6	25.3	21.1	15.47	51.12
8B	24.7	43.2	34.02	21.19	35.4
8C	22.1	38.7	53.52	45	23.01
8D	32.2	36	40.78	36.35	45.49
Total	106.6	143.2	149.4	118.0	155.0

The previously reported emissions values for 2006 through 2010 and the baseline estimated from those emissions are provided in Appendix 1.C (attached).

Taking the average of the highest two consecutive years in the table above, 2007 and 2008, yields an alternate baseline value for CO mass emissions of 146.3 tons/year. Comparing the 2013 Actual Annual Emissions in this report of 203 tons/year to the alternate baseline of 146.3 tons/year yields a difference of 56.7 tons/year.

In compliance with the permit, FPL is providing an explanation of the difference between the estimated and actual emissions values. CEMS data for the combustion turbines (CT) from the baseline averaging period (2007/2008), was compared with the subject year of this report (2013). The comparison showed an increase in the number of CT startup and shutdown cycles, which directly resulted in a net increase in emissions. The number of startup and shutdown cycles is dependent on fluctuations in system demand.

The comparison also showed an unexpected increase in startup emissions subsequent to the completion of the upgrade project covered in Air Construction Permit 0850001-026-AC. This project installed hot gas path components, combustion liners, flow sleeves, and new control software characteristic of the newer GE Model 7FA.04 CT to increase firing temperatures. The permittee consulted with the manufacturer and developed a best practice for startup tuning adjustments to mitigate the associated emissions increases. The adjustment practices are currently being implemented.

If you have any questions or require additional information, please contact either myself at (772) 597-7106 or Willie Welch at (772) 597-7211.

**RESPONSIBLE OFFICIAL CERTIFICATION**

I, the undersigned, am a responsible official (Title V air permit application or official notification form on file with the Department) of the Title V source for which this document is being submitted. With respect to all matters other than Acid Rain program requirements, I hereby certify, based on the information and belief formed after reasonable inquiry, that the statements made and data contained in this document are true, accurate, and complete.

Sincerely,



Brad Williams  
Regional Plant Manager  
(Responsible Official)

cc: Lee Hoefert  
Southeast District

## Appendix 1

A. The revised values for actual emissions were produced using the following calculation to convert hourly CO mass emissions (ppm) CEMS data to an emission rate (lbs/mmBtu):

$$\frac{\text{lbs}}{\text{MMBtu}} = C_{\text{gas}} \times MW \times F_d \times 2.59E^{-9} \times \frac{20.9}{20.9 - \%O_2}$$

Where:

$C_{\text{gas}}$  = Effluent gas concentration, dry basis, ppm

$MW$  = Molecular Weight

$Btu$  = British thermal unit

$F_d$  = Dry oxygen F factor for natural gas = 8,710 dscf/MMbtu at 68°F

This emission rate was then multiplied by the actual recorded annual heat input (mmBTU) to yield CO mass emissions for the year (tons/year).

B. The following table shows the previously reported 2013 CO mass emissions for Unit 8 A – D:

	CO Mass Emissions <sup>1</sup> (tons/year)
Unit	2013
8A	24.1
8B	21.9
8C	24.5
8D	23.5
Total	94.0

<sup>1</sup>Reported February 18, 2014

C. The following table shows the CO mass emissions for Unit 8 A – D utilized in the previous calculation of the baseline:

	CO Mass Emissions <sup>2</sup> (tons/year)				
Unit	2006	2007	2008	2009	2010
8A	22.5	17.6	8.6	10.0	8.3
8B	19.2	20.7	22.9	11.8	8.8
8C	22.6	21.2	11.7	9.5	7.0
8D	22.0	19.7	4.5	7.1	7.4
Total	86.3	79.2	47.8	38.5	31.6

<sup>2</sup>From Annual Operating Reports 2006 through 2010

Based on the values shown above, the permittee previously estimated the baseline actual emissions as 82.75 tons/year of CO. This estimate was the average of the two highest total annual mass emissions values reported for consecutive years in the table above (2006 and 2007).