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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION  
SURREBUTTAL TESTIMONY OF KATHY A. FRENCH, P.E.  
ON BEHALF OF  
DeSOTO COUNTY GENERATING COMPANY, LLC  
DOCKET NO. 130007-EI  
OCTOBER 23, 2013

**Q. Please state your name and business address.**

A. My name is Kathy A. French, and my business address is 400 Chesterfield Center, Suite 110, Chesterfield, Missouri 63017.

**Q. By whom are you employed and in what capacity?**

A. I am employed by LS Power Development, LLC as Assistant Vice President, Environmental. LS Power Development, LLC is the indirect owner of DeSoto County Generating Company, LLC (DeSoto), which owns the DeSoto Generating Facility (Facility, or DeSoto Facility).

**Q. Have you previously submitted testimony in this proceeding?**

A. Yes, on September 13, 2013, I submitted my direct testimony in which I described the Facility's environmental control systems and its environmental compliance history and current status. In my direct testimony, I also testified that, assuming that the 1-Hour National Ambient Air Quality Standard for Nitrogen Dioxide (NO2) was applicable to the Facility, modeling performed by the Florida office of an independent

1 consulting firm confirmed that the Facility would meet that 1-Hour NO<sub>2</sub> Standard at  
2 the site boundary of the Facility, and that the Facility would thus satisfy FPL's desire  
3 for combustion turbine capacity that would meet the 1-Hour National Ambient Air  
4 Quality Standard (NAAQS) for NO<sub>2</sub>.

5  
6 **PURPOSE AND SUMMARY OF SURREBUTTAL TESTIMONY**

7 **Q. What is the purpose of your surrebuttal testimony?**

8 A. The purpose of my surrebuttal testimony is to provide my expert opinion, as a  
9 Professional Engineer, that based on the emissions and modeling data provided by  
10 FPL, FPL could continue to operate at least 6 of the existing gas turbine generators  
11 (GTs) at its Ft. Myers Plant without violating the 1-Hour NO<sub>2</sub> Standard at the Ft.  
12 Myers Plant boundary. This testimony is offered specifically in support of the  
13 testimony of DeSoto's witnesses Carolyne Wass and Casey Carroll that FPL, by  
14 assuming in its analyses that it had to shut down all 12 of the gas turbines (GTs) at its  
15 Ft. Myers Plant, failed to evaluate all feasible combinations of generating resources  
16 that would meet the 1-Hour NO<sub>2</sub> Standard at the Ft. Myers Plant site.

17  
18 **Q. Please summarize the main conclusions of your surrebuttal testimony.**

19 A. The new economic analyses presented by FPL in the rebuttal testimony of Mr. Juan  
20 Enjamio and Mr. William Yeager apparently took as given the assumption that FPL  
21 had to shut down all 12 of the existing GTs at its Ft. Myers Plant. However, based on  
22 information provided by FPL in discovery responses in this docket, this assumption  
23 appears to be incorrect, and thus the economic analyses that depend on this

1 assumption are likely incorrect, and at best, those analyses are based on faulty  
2 assumptions. Specifically, a table provided by FPL in response to discovery by the  
3 Office of Public Counsel shows that for FPL to comply with the 1-Hour NO2  
4 Standard at its Ft. Myers Plant, FPL would only have to reduce NOx emissions by, at  
5 most, 44 percent. Therefore, a reduction of 50 percent, which would result from FPL  
6 retiring only 6 of the existing Ft. Myers GTs, would allow FPL to keep the remaining  
7 6 GTs running in regular-duty mode.

8

9 **Q. Are you sponsoring any exhibits with your surrebuttal testimony?**

10 A. Yes. I am sponsoring the following exhibit/exhibits:

11 KAF -2 Table PFM, Predicted Maximum Daily 1-Hour NO2 Concentrations  
12 Compared to the NAAQS, CTs at the Fort Myers Plant;

13 KAF-3 Simple Cycle SCR Catalyst Update, dated 6-27-13 and Attached Table  
14 Showing NOx Emissions Rates at PFM, PPE, and PFL; and

15 KAF-4 Excerpt from FPL Ft. Myers Permit Application – Tables 6-3a-6-4b,  
16 Maximum Concentrations Predicted for CT Emissions.

17

18 **Required NOx Reductions to Satisfy 1-Hour NO2 Standard**

19 **Q. Please summarize your understanding of what FPL assumed in its new economic**  
20 **analyses, addressed in the rebuttal testimony of William Yeager and Juan**  
21 **Enjamio, regarding the cost-effectiveness of alternative combinations of**  
22 **generating resources considered by FPL that included FPL’s purchasing the**  
23 **DeSoto Generating Facility.**

1 A. FPL apparently assumed that it had to remove all 12 of the existing Ft. Myers GTs  
2 from service, at least for what might be called “regular duty” operational purposes.  
3 This is apparent from the cases evaluated by FPL that included purchasing the  
4 DeSoto Facility. All cases assumed that all 12 of the Ft. Myers GTs were removed  
5 from service (except that FPL would keep two of the GTs operational but only for  
6 emergency, black-start use); in one case, FPL compared its proposed plan to replace  
7 all 12 GTs with two new FPL-installed CTs with approximately 200 MW of capacity  
8 each and the DeSoto Facility, and in the other case, FPL assumed that it would  
9 replace the 12 existing GTs with two smaller CTs (150 MW each) plus the DeSoto  
10 Facility.

11

12 **Q. Would the assumption that all 12 GTs would have to be removed from service to**  
13 **comply with the 1-Hour NO2 Standard be accurate?**

14 A. No. Under some rather extreme circumstances, which do not exist in this case, it  
15 might be possible; however, this appears to be a significantly flawed assumption in  
16 this case.

17

18 **Q. Please explain why this is a flawed assumption.**

19 A. In short, and as explained more thoroughly below, this is a flawed assumption  
20 because FPL’s own information indicates that it can keep at least 6 of its existing Ft.  
21 Myers GTs operating in regular-duty mode without exceeding the 1-Hour NO2  
22 Standard.

23

1           **Required NOx Reductions to Satisfy 1-Hour NO2 Standard**

2   **Q,    Please summarize your understanding of what would be required for FPL to**  
3           **meet the 1-Hour NO2 Standard at the Ft. Myers Plant site.**

4   A.    According to a document identified as Table PFM, Predicted Maximum Daily 1-Hour  
5           NO2 Concentrations Compared to the NAAQS, CTs at the Fort Myers Plant, and also  
6           identified by the “Bates number” ECRC-133 and as having been submitted in  
7           response to the Office of Public Counsel’s Request for Production of Documents  
8           No.4, in order for FPL to comply with the 1-Hour NO2 Standard, it would have to  
9           reduce NOx emissions from the 12 Ft. Myers GTs by between 16 percent and 44  
10          percent, depending on the modeling method. A copy of this table is included as  
11          Exhibit KAF-2 with my surrebuttal testimony. (In practical terms, FPL would have  
12          to reduce those emissions by between 37 percent and 44 percent, because those  
13          required reduction values include background NOx concentrations, which must be  
14          included in applicable analyses.)

15  
16   **Q.    What does this mean as it relates to the question whether FPL could keep some**  
17           **number of the existing GTs at Ft. Myers operating without violating the 1-Hour**  
18           **NO2 Standard?**

19   A.    In my professional opinion, this clearly means that FPL could keep at least 6 – and  
20           possible more – of its existing Ft. Myers GTs operating in regular-duty mode without  
21           violating the 1-Hour NO2 Standard. This conclusion follows directly from the fact  
22           that, according to FPL’s table, at most a 44 percent reduction in NOx emissions  
23           would be required to comply with the 1-Hour NAAQS Standard for NO2 emissions.

1 The required reduction is based on NOx emissions of 174 parts per million (ppm),  
2 which is not consistent with other information provided by FPL that shows the NOx  
3 emissions rate may be closer to 157.7 ppm for the maximum value and that a typical  
4 hourly NOx emissions rate for the Ft. Myers GTs is 123.9 ppm. The information to  
5 which I am referring was provided in documents furnished by FPL in response to the  
6 Office of Public Counsel's Document Production Request No. 3, and identified as  
7 Bates number pages ECRC-097 and ECRC-098. Copies of these pages are included  
8 as Exhibit KAF-3 to my surrebuttal testimony.

9 Because the quantity of emissions from identical units can safely and  
10 reasonably be assumed to be linear – that is, 2 units will emit twice as much as 1 unit,  
11 3 units will emit 3 times as much as 1 unit, and so on – if FPL were to remove 6 of  
12 the existing GTs from service, it would reduce emissions by 50 percent, which is  
13 greater than the maximum reduction required, according to FPL's own  
14 documentation. If the modeled emissions were more representative of the other  
15 information provided and potentially other EPA options were considered, such as a  
16 different percentage conversion to NO2 instead of the 80% used in the modeling, FPL  
17 would be able to achieve compliance by removing even fewer of the existing GTs  
18 from service.

19

20 **Q. Would it matter whether the new CTs at Ft. Myers were firing natural gas or oil**  
21 **fuel?**

22 A. No. Exhibit KAF-4, which is an excerpt from FPL's Ft. Myers air permit application,  
23 identifies that a new CT would only have a maximum 1-hour NO2 impact of between

1           1.98 ug/m<sup>3</sup> and 10.09 ug/m<sup>3</sup> depending on the fuel and engine type; this small impact  
2           doesn't significantly change the required NO<sub>x</sub> reductions from the GTs. The required  
3           NO<sub>x</sub> reductions would be slightly greater if the new 7FA.05 CTs were firing oil, but  
4           still less than 50 percent.

5

6   **Q.   Based on FPL's information, can you conclude that FPL could keep 6 of its**  
7           **existing Ft. Myers GTs operating in regular-duty mode, i.e., not constrained to**  
8           **be operated only for black-start use?**

9   A.   Yes. That is my conclusion and my professional opinion based on the modeling  
10          information provided by FPL.

11

12   **Q.   If that conclusion is true and correct, then would the assumption that FPL had**  
13          **to shut down all 12 of the existing GTs at its Ft. Myers plant be inaccurate?**

14   A.   Yes, it would.

15

16   **Q.   Does this conclude your testimony?**

17   A.   Yes.

18

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

SURREBUTTAL EXHIBITS OF KATHY A. FRENCH, P.E.

ON BEHALF OF

DeSOTO COUNTY GENERATING COMPANY, LLC

DOCKET NO. 130007-EI

OCTOBER 23, 2013



Table PFM.

Predicted Maximum Daily 1-Hour NO2 Concentrations Compared to the NAAQS  
GTs at the Fort Myers Plant

Modeling Scenario	Existing Stack Height (45 ft)				Proposed Stack Height (95 ft)			
	NOx Emission Rate		NO2 1-hr Impacts Daily maximum 8th Highest	NOx reduction to comply with NAAQS	NOx Emission Rate		NO2 1-hr Impacts Daily maximum 8th Highest	NOx reduction to comply with NAAQS
	lb/hr	ppm	ug/m3	%	lb/hr	ppm	ug/m3	%
<b>80% Conversion NOx to NO2</b>								
GTs only	530	174	223	--	530	174	243	--
GTs only-comply with NAAQS	447	147	188	16%	410	134	188	23%
GTs with background-comply with NAAQS	333	109	140	37%	305	100	140	42%
<b>Ozone Limiting Method</b>								
GTs only	530	174	250	--	530	174	271	--
GTs only-comply with NAAQS	399	131	188	25%	368	121	188	31%
GTs with background-comply with NAAQS	297	97	140	44%	274	90	140	48%

NAAQS = 188 ug/m3

1-hour background =  
(based on monitoring)

48 ug/m3  
26 ppb  
17 ppb

(50 percent increase)  
measured at FDEP Sarasota monitor (2012 98th percentile)

Docket No. 130007-EI  
Table PFM, Predicted Maximum  
NO2 Concentrations  
Exhibit KAF-2  
Page 1 of 1

Florida Power & Light Company  
Docket No. 130007-EI  
OPC's 1st Request for POD's  
Request No. 4

# SIMPLE CYCLE SCR CATALYST UPDATE

~~Privileged and Confidential  
Attorney-Client Communication/Attorney Work Product~~

6-27-13

DESCRIPTION	UNITS	PFM	PPE	PFL	COMMENTS
<b>NOx hourly Target</b>	<b>ppm</b>	<b>65</b>	<b>46</b>	<b>37</b>	
<b>Baseline hourly Nox</b>	<b>ppm</b>	<b>123.9</b>	<b>124.6</b>	<b>124.6</b>	<b>Based on sample of Florida Plants</b>
<b>1 Sigma of Baseline hourly Nox</b>	<b>ppm</b>	<b>11.26</b>	<b>10.95</b>	<b>10.95</b>	
<b>Baseline hourly NOx with 3 Sigma</b>	<b>ppm</b>	<b>157.7</b>	<b>157.5</b>	<b>157.5</b>	
<b>SCR Time to Full Effectiveness (Average)</b>	<b>Min</b>	<b>18</b>	<b>18</b>	<b>18</b>	<b>Based on 10 Jamaica Bay Startups</b>
<b>1 Sigma of SCR Time to Full Effectiveness</b>	<b>Min</b>	<b>2</b>	<b>2</b>	<b>2</b>	
<b>Avg SCR Time to Full Effectiveness with 3 Sigma</b>	<b>Min</b>	<b>24</b>	<b>24</b>	<b>24</b>	
<b>% Reduction to Achive hourly NOx Target</b>	<b>%</b>	<b>89%</b>	<b>N/A</b>	<b>N/A</b>	<b>PPE and PFL not Achivable</b>

Docket No. 130007-EI  
 Simple Cycle SCR Update and  
 NOx Emissions Table  
 Exhibit KAF-3  
 Page 2 of 2

Table 8-3a: Maximum Concentrations Predicted for Emissions of One CT Firing Natural Gas in Simple-Cycle Operation, Fort Myers (GE 7FA.05 Units)

Natural Gas										Maximum Predicted Concentrations (µg/m³) for CT by Operating Load and Air Temperature <sup>a</sup>																																																																															
Maximum Emission Rates for CT (lb/hr) by Operating Load and Air Temperature										Averaging Time	Base Load									75% Load									95% Load																																																												
Base Load			75% Load			95% Load			Base Load			75% Load			95% Load			Base Load			75% Load			95% Load																																																																	
35°F	75°F	95°	35°F	75°F	95°	35°F	75°F	95°	35°F		75°F	95°	35°F	75°F	95°	35°F	75°F	95°	35°F	75°F	95°	35°F	75°F	95°																																																																	
Generic <sup>b</sup> (10 g/s) - 3.33 g/s per CT										Annual	0.065	0.086	0.090	0.11	0.11	0.11	0.13	0.13	0.13	Annual	0.053	0.053	0.056	0.07	0.07	0.07	0.08	0.08	0.08	Annual	0.74	0.75	0.78	0.93	0.94	0.96	1.08	1.08	1.07	24-Hour	0.47	0.48	0.50	0.60	0.61	0.62	0.71	0.71	0.70	8-Hour	1.92	1.95	2.03	2.41	2.43	2.48	2.78	2.79	2.77	3-Hour	2.31	2.34	2.41	2.76	2.78	2.83	3.11	3.12	3.10	1-Hour	2.49	2.51	2.58	2.90	2.92	2.97	3.28	3.30	3.27	1-Hour	2.06	2.09	2.17	2.53	2.56	2.61	2.89	2.91	2.88
Emissions for one CT										Annual	0.011	0.011	0.012	0.014	0.015	0.015	0.017	0.017	0.017	24-Hour	0.10	0.10	0.10	0.12	0.13	0.13	0.144	0.017	0.143	Annual	0.007	0.007	0.007	0.008	0.008	0.008	0.011	0.011	0.011	24-Hour	0.06	0.06	0.07	0.08	0.08	0.08	0.09	0.10	0.09	Annual	0.0768	0.074	0.073	0.0773	0.074	0.073	0.072	0.069	0.067	1-Hour	1.87	1.80	1.76	1.82	1.75	1.71	1.65	1.58	1.53	8-Hour	0.8476	0.8215	0.8010	0.8543	0.7967	0.7577	0.8081	0.7743	0.7679	1-Hour	1.0971	1.0586	1.0193	1.0307	0.9581	0.9053	0.8508	0.8134	0.8058
PM <sub>10</sub>	10.60	10.60	10.60	10.60	10.60	10.60	10.60	10.60	10.60	Annual	0.011	0.011	0.012	0.014	0.015	0.015	0.017	0.017	0.017	24-Hour	0.10	0.10	0.10	0.12	0.13	0.13	0.144	0.017	0.143	Annual	0.007	0.007	0.007	0.008	0.008	0.008	0.011	0.011	0.011	24-Hour	0.06	0.06	0.07	0.08	0.08	0.08	0.09	0.10	0.09	Annual	0.0768	0.074	0.073	0.0773	0.074	0.073	0.072	0.069	0.067	1-Hour	1.87	1.80	1.76	1.82	1.75	1.71	1.65	1.58	1.53	8-Hour	0.8476	0.8215	0.8010	0.8543	0.7967	0.7577	0.8081	0.7743	0.7679	1-Hour	1.0971	1.0586	1.0193	1.0307	0.9581	0.9053	0.8508	0.8134	0.8058
PM <sub>2.5</sub>	10.60	10.60	10.60	10.60	10.60	10.60	10.60	10.60	10.60	Annual	0.011	0.011	0.012	0.014	0.015	0.015	0.017	0.017	0.017	24-Hour	0.10	0.10	0.10	0.12	0.13	0.13	0.144	0.017	0.143	Annual	0.007	0.007	0.007	0.008	0.008	0.008	0.011	0.011	0.011	24-Hour	0.06	0.06	0.07	0.08	0.08	0.08	0.09	0.10	0.09	Annual	0.0768	0.074	0.073	0.0773	0.074	0.073	0.072	0.069	0.067	1-Hour	1.87	1.80	1.76	1.82	1.75	1.71	1.65	1.58	1.53	8-Hour	0.8476	0.8215	0.8010	0.8543	0.7967	0.7577	0.8081	0.7743	0.7679	1-Hour	1.0971	1.0586	1.0193	1.0307	0.9581	0.9053	0.8508	0.8134	0.8058
NO <sub>x</sub>	72.00	68.08	64.32	57.00	54.10	52.00	45.22	43.22	42.11	Annual	0.0768	0.074	0.073	0.0773	0.074	0.073	0.072	0.069	0.067	1-Hour	1.87	1.80	1.76	1.82	1.75	1.71	1.65	1.58	1.53	8-Hour	0.8476	0.8215	0.8010	0.8543	0.7967	0.7577	0.8081	0.7743	0.7679	1-Hour	1.0971	1.0586	1.0193	1.0307	0.9581	0.9053	0.8508	0.8134	0.8058																																								
CO	35.00	33.41	31.33	26.16	26.00	24.22	23.00	22.00	22.00	Annual	0.0768	0.074	0.073	0.0773	0.074	0.073	0.072	0.069	0.067	1-Hour	1.87	1.80	1.76	1.82	1.75	1.71	1.65	1.58	1.53	8-Hour	0.8476	0.8215	0.8010	0.8543	0.7967	0.7577	0.8081	0.7743	0.7679	1-Hour	1.0971	1.0586	1.0193	1.0307	0.9581	0.9053	0.8508	0.8134	0.8058																																								

<sup>a</sup> Concentrations are based on highest predicted concentrations from AERMOD using five years of meteorological data for 2006 to 2010 consisting of surface and upper air data from the National Weather Service stations at Fort Myers Page Field AP and Ruskin, respectively.

<sup>b</sup> Pollutant concentrations were based on a modeled or generic concentration predicted using a modeled emission rate of 79.37 lb/hr (10 g/s) for 3 CTs. Pollutant-specific concentrations for 1 CT were then determined by multiplying the predicted concentration by the ratio of the pollutant-specific emission rate divided by the modeled emission rate of 10 g/s.

<sup>c</sup> Based on the highest concentration of any year (2006-2010).

<sup>d</sup> Based on highest 5-year average concentration (2006-2010).

Table 6-3b: Maximum Concentrations Predicted for Emissions of One CT Firing Ultra Low Sulfur Fuel Oil in Simple-Cycle Operation, Fort Myers (GE 7FA.85 Units)

Ultra Low-Sulfur Fuel Oil										Maximum Predicted Concentrations (µg/m <sup>3</sup> ) for CT by Operating Load and Air Temperature <sup>a</sup>									
Maximum Emission Rates for CT (lb/hr) by Operating Load and Air Temperature										Averaging Time	Maximum Predicted Concentrations (µg/m <sup>3</sup> ) for CT by Operating Load and Air Temperature <sup>a</sup>								
Base Load			75% Load			80% Load			Base Load			75% Load			80% Load				
	35°F	75°F	95°	35°F	75°F	95°	35°F	75°F	95°		35°F	75°F	95°	35°F	75°F	95°	35°F	75°F	95°
Generic <sup>b</sup> (10 g/s) - 3.33 g/s per CT	79.37	79.37	79.37	79.37	79.37	79.37	79.37	79.37	79.37	Annual <sup>c</sup>	0.09	0.09	0.09	0.11	0.11	0.11	0.13	0.13	0.13
										Annual <sup>d</sup>	0.06	0.05	0.05	0.07	0.07	0.07	0.08	0.08	0.08
										24-Hour <sup>e</sup>	0.78	0.74	0.77	0.94	0.92	0.94	1.12	1.11	1.13
										24-Hour <sup>f</sup>	0.50	0.47	0.49	0.61	0.60	0.61	0.74	0.73	0.75
										8-Hour <sup>e</sup>	2.02	1.93	1.99	2.45	2.40	2.45	2.89	2.87	2.91
										3-Hour <sup>e</sup>	2.41	2.32	2.39	2.80	2.76	2.80	3.20	3.19	3.23
										1-Hour <sup>e</sup>	2.58	2.49	2.55	2.94	2.90	2.94	3.41	3.38	3.44
										1-Hour <sup>f</sup>	2.16	2.07	2.13	2.57	2.53	2.58	3.00	2.96	3.03
<b>Emissions for one CT</b>																			
PM <sub>10</sub>	37.1	37.1	37.1	37.1	37.1	37.1	37.1	37.1	37.1	Annual <sup>e</sup>	0.04	0.04	0.04	0.05	0.05	0.05	0.06	0.06	0.06
										24-Hour <sup>e</sup>	0.36	0.35	0.36	0.44	0.43	0.44	0.52	0.52	0.53
PM <sub>2.5</sub>	37.1	37.1	37.1	37.1	37.1	37.1	37.1	37.1	37.1	Annual <sup>e</sup>	0.03	0.02	0.03	0.03	0.03	0.03	0.04	0.04	0.04
										24-Hour <sup>e</sup>	0.23	0.22	0.23	0.29	0.28	0.29	0.35	0.34	0.35
NO <sub>x</sub>	370.3	368.9	348.4	295.1	291.8	277.2	229.5	224.1	213.8	Annual <sup>e</sup>	0.42	0.40	0.39	0.41	0.39	0.38	0.38	0.37	0.38
										1-Hour <sup>e</sup>	10.09	9.65	9.38	9.57	9.31	9.00	8.88	8.42	8.15
CO	71.0	73.0	70.0	58.0	56.3	54.2	48.4	46.3	45.3	8-Hour <sup>e</sup>	1.81	1.77	1.75	1.78	1.70	1.67	1.89	1.67	1.68
										1-Hour <sup>e</sup>	2.30	2.29	2.25	2.15	2.06	2.01	1.99	1.98	1.98

<sup>a</sup> Concentrations are based on highest predicted concentrations from AERMOD using five years of meteorological data for 2006 to 2010 consisting of surface and upper air data from the National Weather Service stations at Fort Myers Page Field AP and Ruskin, respectively.

<sup>b</sup> Pollutant concentrations were based on a modeled or generic concentration predicted using a modeled emission rate of 79.37 lb/hr (10 g/s) for 3 CTs. Pollutant-specific concentrations for 1 CT were then determined by multiplying the predicted concentration by the ratio of the pollutant-specific emission rate divided by the modeled emission rate of 10 g/s.

<sup>c</sup> Based on the highest concentration of any year (2006-2010).

<sup>d</sup> Based on highest 5-year average concentration (2006-2010).

Table 6-4a: Maximum Concentrations Predicted for Emissions of One CT Firing Natural Gas in Simple-Cycle Operation, Fort Myers (Siemens F5 Units)

Natural Gas							Averaging Time	Maximum Predicted Concentrations ( $\mu\text{g}/\text{m}^3$ ) for CT by Operating Load and Air Temperature *								
Maximum Emission Rates for CT (lb/hr) by Operating Load and Air Temperature								Base Load			40% Load			44% Load		
38°F	75°F	95°	38°F	75°F	95°			38°F	75°F	95°	38°F	75°F	95°			
Generic <sup>b</sup> (10 g/s) - 3.33 g/s per CT							Annual <sup>c</sup>	0.08	0.08	0.08	0.14	0.13	0.13			
							Annual <sup>d</sup>	0.05	0.05	0.05	0.08	0.08	0.08			
							24-Hour <sup>e</sup>	0.73	0.67	0.71	1.15	1.13	1.12			
							24-Hour <sup>f</sup>	0.46	0.43	0.45	0.78	0.75	0.74			
							8-Hour <sup>e</sup>	1.90	1.76	1.84	2.97	2.91	2.88			
							3-Hour <sup>e</sup>	2.29	2.14	2.23	3.28	3.23	3.20			
							1-Hour <sup>e</sup>	2.46	2.33	2.41	3.50	3.44	3.40			
							1-Hour <sup>g</sup>	2.04	1.89	1.98	3.07	3.02	2.99			
<b>Emissions represent one CT</b>																
PM <sub>10</sub>	9	10	9	8	8	8	Annual <sup>c</sup>	0.009	0.010	0.009	0.014	0.013	0.013			
							24-Hour <sup>e</sup>	0.08	0.08	0.08	0.116	0.114	0.113			
PM <sub>2.5</sub>	9	10	9	8	8	8	Annual <sup>c</sup>	0.006	0.006	0.006	0.009	0.008	0.008			
							24-Hour <sup>e</sup>	0.05	0.05	0.05	0.08	0.08	0.07			
NO <sub>x</sub>	77	79	74	42	42	42	Annual <sup>c</sup>	0.0810	0.076	0.075	0.072	0.070	0.070			
							1-Hour <sup>e</sup>	1.98	1.88	1.85	1.63	1.60	1.58			
CO	21	21	20	26	26	26	8-Hour <sup>e</sup>	0.5021	0.4645	0.4847	0.9716	0.9545	0.9439			
							1-Hour <sup>e</sup>	0.6520	0.6168	0.6083	1.1465	1.1261	1.1136			

<sup>a</sup> Concentrations are based on highest predicted concentrations from AERMOD using five years of meteorological data for 2006 to 2010 consisting of surface and upper air data from the National Weather Service stations at Fort Myers Page Field AP and Ruskin, respectively.

<sup>b</sup> Pollutant concentrations were based on a modeled or generic concentration predicted using a modeled emission rate of 79.37 lb/hr (10 g/s) for 3 CTs. Pollutant-specific concentrations for 1 CT were then determined by multiplying the predicted concentration by the ratio of the pollutant-specific emission rate divided by the modeled emission rate of 10 g/s.

<sup>c</sup> Based on the highest concentration of any year (2006-2010).

<sup>d</sup> Based on highest 5-year average concentration (2006-2010).

Table 6-4b: Maximum Concentrations Predicted for Emissions of One CT Firing Ultra Low Sulfur Fuel Oil in Simple-Cycle Operation, Fort Myers (Siemens F5 Units)

Ultra Low-Sulfur Fuel Oil							Averaging Time	Maximum Predicted Concentrations ( $\mu\text{g}/\text{m}^3$ ) for CT by Operating Load and Air Temperature <sup>a</sup>					
Maximum Emission Rates for CT (lb/hr) by Operating Load and Air Temperature								Base Load					
Base Load			50% Load					Base Load					
	35°F	75°F	95°	35°F	75°F	95°		35°F	75°F	95°	35°F	75°F	95°
Generic <sup>b</sup> (10 g/s) - 3.33 g/s per CT	79.37	79.37	79.37	79.37	79.37	79.37	Annual <sup>c</sup>	0.08	0.08	0.08	0.12	0.12	0.13
							Annual <sup>d</sup>	0.05	0.05	0.05	0.08	0.08	0.08
							24-Hour <sup>e</sup>	0.72	0.70	0.73	1.05	1.04	1.07
							24-Hour <sup>d</sup>	0.46	0.45	0.47	0.69	0.69	0.70
							8-Hour <sup>e</sup>	1.88	1.82	1.91	2.72	2.70	2.77
							3-Hour <sup>e</sup>	2.27	2.21	2.30	3.05	3.03	3.09
							1-Hour <sup>e</sup>	2.45	2.39	2.47	3.21	3.19	3.26
							1-Hour <sup>d</sup>	2.02	1.96	2.05	2.83	2.81	2.88
<b>Emissions for one CT</b>													
PM <sub>10</sub>	53	52	48	37	35	33	Annual <sup>c</sup>	0.06	0.05	0.05	0.06	0.05	0.06
							24-Hour <sup>c</sup>	0.48	0.46	0.44	0.49	0.46	0.44
PM <sub>2.5</sub>	53	52	48	37	35	33	Annual <sup>d</sup>	0.03	0.03	0.03	0.04	0.03	0.03
							24-Hour <sup>d</sup>	0.31	0.29	0.28	0.32	0.30	0.29
NO <sub>x</sub>	378	376	353	235	228	217	Annual <sup>c</sup>	0.39	0.38	0.37	0.36	0.35	0.34
							1-Hour <sup>d</sup>	9.61	9.27	9.10	8.38	8.08	7.86
CO	49	49	46	340	331	315	8-Hour <sup>c</sup>	1.18	1.12	1.11	11.65	11.26	10.97
							1-Hour <sup>d</sup>	1.51	1.48	1.43	13.74	13.29	12.94

<sup>a</sup> Concentrations are based on highest predicted concentrations from AERMOD using five years of meteorological data for 2006 to 2010 consisting of surface and upper air data from the National Weather Service stations at Fort Myers Page Field AP and Ruskin, respectively.

<sup>b</sup> Pollutant concentrations were based on a modeled or generic concentration predicted using a modeled emission rate of 79.37 lb/hr (10 g/s) for 3 CTs. Pollutant-specific concentrations for 1 CT were then determined by multiplying the predicted concentration by the ratio of the pollutant-specific emission rate divided by the modeled emission rate of 10 g/s.

<sup>c</sup> Based on the highest concentration of any year (2006-2010).

<sup>d</sup> Based on highest 5-year average concentration (2006-2010).

Docket No. 130007-EI  
 FPL Ft. Myers Permit Application -  
 Predicted Emission Concentrations  
 Exhibit KAF-4  
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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished by electronic mail on this 23<sup>rd</sup> day of October, 2013, to the following:

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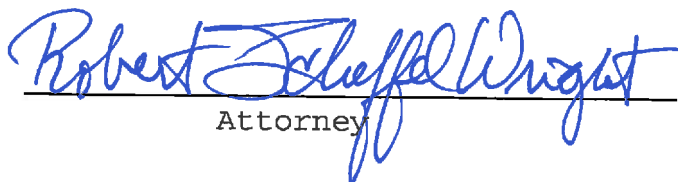
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