

Golder Associates Inc.

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



April 9, 2007

0637567-1105

Bureau of Air Regulation, South Permitting Section
Florida Department of Environmental Protection
111 South Magnolia Street
Tallahassee, FL 32399

RECEIVED

APR 10 2007

BUREAU OF AIR REGULATION

Attn: Mr. A. A. Linero, Program Administrator

**RE: FPL GLADES POWER PARK
DEP FILE NO. 0430017-001-AC, PSD-FL-385
SUPPLEMENTAL INFORMATION FOR COMPLETENESS QUESTION FDEP-8**

Dear Mr. Linero:

On behalf of Florida Power & Light Co. (FPL) and as the engineer-of-record for the Air Construction/Prevention of Significant Deterioration (PSD) Permit Application, this correspondence provides additional information related to the Air Construction/PSD Permit Application submitted for FPL Glades Power Park (FGPP). Specifically, this correspondence supplements the information for PSD Completeness Question FDEP-8.

As discussed in the Air Construction/PSD Application and PSD Completeness Responses, FGPP is located in Glades County, which is very rural without many stationary sources of volatile organic compounds (VOC) or nitrogen oxides (NO_x) emissions. The response to FDEP-9 addressed those emissions from counties immediately surrounding Glades County. The total VOC and NO_x emissions for stationary and mobile sources from nearby counties as presented in the response to FDEP-8 (i.e., Glades, Highlands, Hendry, Lee, Charlotte, Okeechobee, Martin, and Palm Beach Counties) were 128,509 tons per year (TPY) and 104,364 TPY, respectively. These data were obtained from the U.S. Environmental Protection Agency (EPA) AirData website for 2001, the latest year of available data.

Ozone formation can be affected by VOC and NO_x emissions that occur from tens of miles to more than 100 miles from a site. To reflect the regional VOC and NO_x emissions in southern Florida, additional emissions information was obtained that included counties located about 80 miles from Glades County. Summaries of the VOC and NO_x emissions estimated for this southern Florida region around Glades County are presented in Tables FDEP-8c and -8d, respectively. Note that these summaries do not include VOC emissions from biogenic sources, which would increase the total VOC emissions in the region.

The VOC emissions increase due to FGPP of about 260 TPY represents less than a 0.05-percent increase in regional VOC emissions. The NO_x emissions increase due to FGPP of about 3,800 TPY represents less than a 0.1-percent increase in regional NO_x emissions.

To further support the conclusions that FGPP will not have a significant effect on the regional emissions of VOC and NO_x, regional emissions information from the VISTAS inventory was compiled for 2002 and 2009. This information is presented in Tables VOC-2002, VOC-2009, NO_x-2002, and NO_x-2009. As shown in these tables the estimated emissions in the region are expected to decrease from 2002 to 2009. For VOCs, the decrease is about 140,000 TPY and for NO_x

the decrease is about 185,000 TPY. Indeed, a decrease in NO_x emissions from mobile and off-highway sources as a result of updated regulations is estimated to be about 90,000 TPY or 20 times higher than FGPP emissions.

Unlike air modeling analyses for pollutants emitted directly from FGPP, there are no recommended air quality models in EPA's Guideline on Air Quality Models [Title 40, Part 51 of the Code of Federal Regulations (40 CFR 51), Appendix W] to evaluate the emissions of VOC and NO_x from a single source of ozone formation. Air quality models that are recommended for ozone are utilized to simulate impacts for large urban areas that have air quality exceeding the ambient air quality standards (AAQS) for ozone. Ozone modeling requires intensive meteorological, source, and ambient air quality data to evaluate episodes of high ozone concentrations in order to develop compliance strategies for meeting the AAQS for ozone. These techniques would not be appropriate to evaluate the impacts from FGPP. These models are validated for regional areas and only provide limited information on the potential impacts from single sources due to the regional scale of these models and the small emission contributions that a single source would have to these large regional areas.

To provide some insight on the potential impacts of a single source of VOCs and NO_x, the recent study conducted for the FDEP, which evaluated the 8-hour ozone concentrations for Pensacola and other areas located along the Florida panhandle, was reviewed. The West Florida Ozone Study (WFOS), initiated in July 2002 and completed in 2004 for the purpose of extending the databases and modeling tools for the Gulf Coast Ozone Study (GCOS), considered various control strategies to examine the effects of specific control measures on 8-hour ozone concentrations. Observed data in the area indicated 8-hour ozone concentrations approaching or above the AAQS. The report, "West Florida Ozone Study (WFOS) Data Analysis and Modeling Study" prepared by Systems Applications, Inc. (January 2004), included a modeling case where changes in NO_x emissions from Gulf Power Company's Plant Crist, Unit 7, were evaluated. The changes evaluated the operation of Unit 7 with and without the use of selective catalytic reduction (SCR). The estimated net NO_x emission decrease for using SCR on Unit 7 is about 20 tons per day (TPD). A summary of the maximum simulated 8-hour ozone concentrations predicted for the Pensacola and Bay County areas with and without SCR on Unit 7 is presented in Table FDEP-8e.

As shown in Table FDEP-8e, the predicted 8-hour concentrations were highly variable reflecting the difficulty in precisely predicting the impacts for a single source using regional models. However, some insight can be obtained by evaluating the average changes in predicted concentrations. For the WFOS case that evaluated SCR on Crist Unit 7, the average difference in ozone concentrations resulting from about 20 TPD change in NO_x emissions was from 1 to 2 part per billion (ppb) or 1 to 2 percent. Using a change in NO_x emissions of 10.4 TPD, or equivalent to FGPP's potential NO_x emissions, the change in ozone concentrations would be equivalent to 1 ppb or less in the WFOS.

The observations from the WFOS for a 10.4-TPD change in NO_x emissions is not inconsistent with the air modeling presented in Table FDEP-8b, which presented illustrative ozone concentrations downwind of FGPP. This illustrative analysis conservatively assumed that all the NO_x is converted to ozone. At distances of 10 to 50 kilometers, the maximum ozone concentrations suggested for FGPP using this conservative approach were about 1 ppb or less.

The WFOS was conducted in a region that has continental influences, including source contribution into the region from the west, north, and east. Indeed, the area studied in the WFOS was only a portion of the larger GCOS area where violations of the ozone AAQS are common. In contrast, FGPP is located in the southern peninsula of Florida dominated by a subtropical climate with primary

influences from the Gulf of Mexico and Atlantic Ocean. The observed ozone concentrations in southern Florida are much lower than those observed in the Pensacola area and fully comply with the ozone AAQS. This primarily reflects the differences in meteorological conditions between the areas, since the total regional emissions of VOC and NO_x in the WFOS area and southern Florida region are similar.

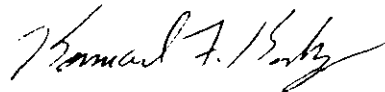
As shown previously in Table FDEP-8a, the air quality data for the three closest FDEP ozone monitors are in full compliance with the AAQS for ozone. The data presented in Table FDEP-8a of the PSD Completeness Responses are well below the AAQS for ozone. These stations are located in Highlands County (Sebring), Lee County (Fort Myers Beach), and Palm Beach County (Royal Palm Beach). The data collected from these sites are similar and are from 12 to 18 ppb less than the 8-hour ozone standard. It should be noted that the air quality data for the three closest FDEP ozone monitors are in full compliance with the AAQS for ozone. The data presented in Table FDEP-8a of the PSD Completeness Responses are well below the AAQS for ozone. These stations are located in Highlands County (Sebring), Lee County (Fort Myers Beach), and Palm Beach County (Royal Palm Beach). The data collected from these sites are similar and are from 12 to 18 ppb less than the 8-hour ozone standard. As noted from the WFOS and the illustrative modeling analysis, the change in ozone concentrations from 10.4 TPD of NO_x emissions would be about 1 ppb or less on a regional scale. This clearly suggests that the NO_x emissions from FGPP will contribute very little to the ozone concentration observed in the southern Florida region.

Taking together the existing air quality data for ozone, regional emissions, and previous ozone studies, the maximum contribution to ozone concentrations in the region due to the emissions of VOCs and NO_x from FGPP are expected to comply with the AAQS for ozone. FGPP will not cause or contribute to an exceedance of the ozone AAQS. Performing regional ozone modeling would not provide any greater quantitative information on ozone prediction than those presented semi-quantitatively using emissions, previous modeling, and air quality comparisons. To demonstrate that the area in the vicinity of FGPP will continue to comply with the ozone AAQS, FPL will agree to perform air quality monitoring for ozone during the construction period and operation of FGPP.

Your consideration of this information is greatly appreciated. Please call me or Barbara Linkiewicz of FPL (561-691-7518), if you have any questions on this supplemental information.

Sincerely,

GOLDER ASSOCIATES INC.



Kennard F. Kosky, P.E.
Principal



Robert C. McCann
Principal

KFK/all

Cc: Barbara Linkiewicz

TABLE FDEP-8c
VOC EMISSIONS ESTIMATED FOR 2001
FOR REGION AROUND GLADES COUNTY

County	VOC Emissions (TPY)			Total
	Industrial, Commercial, Institutional	Highway, Off-Highway	Other	
Brevard Co	10,252	17,696	715	28,664
Broward Co	26,637	42,481	2,928	72,046
Charlotte Co	1,990	4,592	310	6,892
Collier Co	3,273	9,236	5,732	18,240
DeSoto Co	900	743	232	1,875
Glades Co	206	2,322	1,125	3,653
Hardee Co	651	529	436	1,615
Hendry Co	3,294	1,160	4,835	9,289
Highlands Co	1,883	2,567	427	4,878
Hillsborough Co	24,245	28,549	946	53,740
Indian River Co	2,436	4,278	217	6,931
Lee Co	7,486	16,385	976	24,848
Manatee Co	6,728	7,970	288	14,986
Martin Co	2,961	5,599	257	8,817
Miami-Dade Co	44,351	49,661	3,945	97,957
Monroe Co	1,669	24,030	3,091	28,790
Okeechobee Co	733	1,855	171	2,760
Osceola Co	2,688	4,239	920	7,847
Palm Beach Co	23,185	36,776	7,405	67,366
Pinellas Co	19,788	27,630	198	47,615
Polk Co	16,508	15,385	1,572	33,464
Sarasota Co	7,268	10,051	356	17,675
St. Lucie Co	4,175	6,700	247	11,122
Total	213,306	320,434	37,329	571,069

Source: EPA AIRDATA website (<http://www.epa.gov/air/data/geosel.html>)

TABLE FDEP-8d
NO_x EMISSIONS ESTIMATED FOR 2001
FOR REGION AROUND GLADES COUNTY

County	NO _x Emissions (TPY)			Total
	Industrial, Commercial, Institutional	Highway, Off-Highway	Other	
Brevard Co	15,941	17,373	324	33,638
Broward Co	20,116	52,361	1,323	73,800
Charlotte Co	150	4,560	141	4,851
Collier Co	206	9,192	2,612	12,011
DeSoto Co	59	971	106	1,136
Glades Co	27	699	309	1,035
Hardee Co	802	919	199	1,919
Hendry Co	1,037	1,434	885	3,357
Highlands Co	678	2,624	194	3,497
Hillsborough Co	58,583	44,423	395	103,401
Indian River Co	264	3,685	99	4,048
Lee Co	9,614	14,802	443	24,860
Manatee Co	10,455	9,015	130	19,600
Martin Co	9,727	4,877	105	14,710
Miami-Dade Co	21,951	55,639	1,790	79,380
Monroe Co	334	4,411	1,409	6,154
Okeechobee Co	48	1,267	78	1,393
Osceola Co	1,859	3,484	419	5,762
Palm Beach Co	12,514	35,725	2,421	50,661
Pinellas Co	12,560	25,548	83	38,191
Polk Co	15,230	17,653	715	33,598
Sarasota Co	387	9,340	161	9,888
St. Lucie Co	724	6,846	112	7,682
Total	193,269	326,848	14,453	534,570

Source: EPA AIRDATA website (<http://www.epa.gov/air/data/geosel.html>)

TABLE FDEP-8c
EXAMPLE OF OZONE MODELING OF CONTROL STRATEGY
FOR SINGLE SOURCE

Period	Area	Maximum 8-Hour Ozone			
		Predicted Concentration (ppb)		Concentration Change (ppb)	Concentration Change (%)
		2007 Baseline ^a	Case C7A ^b	From 2007 Baseline	From 2007 Baseline
September 1997	Pensacola	103	105	2	1.9%
	Bay County	79	80	1	1.3%
August 1997	Pensacola	109	110	1	0.9%
	Bay County	88	90	2	2.3%
May 1996	Pensacola	90	90	0	0.0%
	Bay County	87	87	0	0.0%
July 1998	Pensacola	83	86	3	3.6%
	Bay County	77	77	0	0.0%
July 2000	Pensacola	140	140	0	0.0%
	Bay County	111	118	7	6.3%
Average	Pensacola			1.2	1.3%
	Bay County			2.0	2.0%

Source: West Florida Ozone Study (WFOS) Data Analysis and Modeling Study",
Systems Applications, Inc. (January 2004)

^a Includes Unit 7 from Gulf Power Crist Plant with SCR

^b Includes Unit 7 from Gulf Power Crist Plant without SCR with an estimated NOx emission increase of about 20 tons per day.

TABLE NOX-2002
NO_x EMISSIONS ESTIMATED FOR 2002
FOR REGION AROUND GLADES COUNTY
VISTAS DATA

County	NO _x Emissions (TPY)			Total
	Industrial, Commercial, Institutional	Highway, Off-Highway	Misc.	
Brevard	7,921	20,518	450	28,889
Broward	16,277	54,515	358	71,150
Charlotte	276	6,799	349	7,424
Collier	505	9,292	677	10,474
DeSoto	205	1,191	3	1,399
Glades	19	1,047	117	1,183
Hardee	971	1,389	9	2,369
Hendry	825	1,425	136	2,386
Highlands	1,868	3,461	183	5,512
Hillsborough	55,337	57,269	26	112,632
Indian River	236	5,385	30	5,651
Lee	2,361	19,401	39	21,801
Manatee	10,032	12,302	61	22,395
Martin	8,628	7,435	56	16,119
Miami-Dade	14,474	56,023	553	71,050
Monroe	412	5,000	397	5,809
Okeechobee	70	1,842	235	2,147
Osceola	1,359	9,401	632	11,392
Palm Beach	10,309	38,610	99	49,018
Pinellas	12,310	24,527	3	36,840
Polk	10,864	16,816	425	28,105
Sarasota	470	12,604	142	13,216
St. Lucie	744	8,193	15	8,952
Total	156,473	374,445	4,995	535,913

Source: FDEP 2007

TABLE NOX-2009
NOx EMISSIONS ESTIMATED FOR 2009
FOR REGION AROUND GLADES COUNTY
VISTAS DATA

County	NOx Emissions (TPY)			Total
	Industrial, Commercial, Institutional	Highway, Off-Highway	Misc.	
Brevard	1,694	15,162	455	17,311
Broward	8,635	40,664	561	49,860
Charlotte	276	5,301	361	5,938
Collier	504	7,070	687	8,261
DeSoto	344	879	10	1,233
Glades	20	912	180	1,112
Hardee	1,534	1,013	26	2,573
Hendry	822	1,085	167	2,074
Highlands	212	2,569	184	2,965
Hillsborough	7,870	45,801	47	53,718
Indian River	204	3,886	67	4,157
Lee	1,866	14,683	78	16,627
Manatee	865	9,408	148	10,421
Martin	4,586	5,552	147	10,285
Miami-Dade	9,896	44,869	792	55,557
Monroe	282	4,425	237	4,944
Okeechobee	75	1,415	767	2,257
Osceola	1,480	7,051	533	9,064
Palm Beach	5,968	28,081	246	34,295
Pinellas	6,464	17,354	5	23,823
Polk	5,418	11,876	421	17,715
Sarasota	472	9,125	211	9,808
St. Lucie	727	6,022	52	6,801
Total	60,214	284,203	6,382	350,799

Source: FDEP 2007

TABLE VOC-2002
VOC EMISSIONS ESTIMATED FOR 2002
FOR REGION AROUND GLADES COUNTY
VISTAS DATA

County	VOC Emissions (TPY)				Total
	Industrial, Commercial, Institutional	Highway, Off-Highway	Misc.		
Brevard	12,952	29,178	1054		43,184
Broward	37,981	58,349	819		97,149
Charlotte	3,101	10,049	1008		14,158
Collier	5,802	13,074	1494		20,370
DeSoto	1,231	1,151	242		2,624
Glades	300	6,335	606		7,241
Hardee	850	1,441	216		2,507
Hendry	3,594	2,084	341		6,019
Highlands	2,881	5,926	750		9,557
Hillsborough	8,700	64,340	92		73,132
Indian River	3,236	6,716	172		10,124
Lee	10,267	27,269	89		37,625
Manatee	8,953	11,984	313		21,250
Martin	4,481	10,088	315		14,884
Miami-Dade	49,968	71,952	1244		123,164
Monroe	2,261	20,497	897		23,655
Okeechobee	1,026	4,597	778		6,401
Osceola	4,152	13,911	1861		19,924
Palm Beach	29,975	53,355	3991		87,321
Pinellas	24,386	34,172	14		58,572
Polk	19,660	22,374	1071		43,105
Sarasota	8,652	15,257	470		24,379
St. Lucie	6,306	10,001	119		16,426
Total	250,715	494,100	17,956		762,771

Source: FDEP 2007

TABLE VOC-2009
VOC EMISSIONS ESTIMATED FOR 2009
FOR REGION AROUND GLADES COUNTY
VISTAS DATA

County	VOC Emissions (TPY)			Total
	Industrial, Commercial, Institutional	Highway, Off-Highway	Misc.	
Brevard	13,319	20,213	1,105	34,637
Broward	39,936	38,694	1,277	79,907
Charlotte	3,062	7,344	1,115	11,521
Collier	5,906	9,262	1,582	16,750
DeSoto	1,181	806	289	2,276
Glades	307	4,821	645	5,773
Hardee	876	974	245	2,095
Hendry	3,381	1,543	476	5,400
Highlands	2,901	4,387	708	7,996
Hillsborough	30,066	29,890	146	60,102
Indian River	3,258	4,621	216	8,095
Lee	10,592	19,183	175	29,950
Manatee	8,385	8,398	473	17,256
Martin	4,345	7,093	474	11,912
Miami-Dade	52,637	48,698	1,786	103,121
Monroe	2,270	16,057	540	18,867
Okeechobee	1,048	3,461	1,849	6,358
Osceola	4,277	10,095	1,583	15,955
Palm Beach	31,053	35,879	4,257	71,189
Pinellas	25,621	22,808	16	48,445
Polk	19,326	15,300	1,067	35,693
Sarasota	8,961	10,459	619	20,039
St. Lucie	6,207	6,914	236	13,357
Total	278,915	326,900	20,879	626,694

Source: FDEP 2007