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February 7, 2011

Mr. Robert L. Bull, Jr., P.E.
New Source Review Section
Florida Department of Environmental Protection
Bob Martinez Center
2600 Blairstone Road
Tallahassee, FL 32399-2400

FEB 08 2011
BUREAU OF
AIR REGULATION

**RE: AIR CONSTRUCTION PERMIT APPLICATION
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION (RAI)
SHADY HILLS GENERATING STATION
PASCO COUNTY, FLORIDA
FDEP FILE NO. 1010373-011-AC (PSD-FL-402A)**

Dear Mr. Bull:

This correspondence provides the additional information requested by the Florida Department of Environmental Protection concerning the above-referenced Air Construction Permit application. Golder Associates Inc. received the request for additional information (RAI) on August 13, 2010. On October 26, 2010, Golder requested, on behalf of Shady Hills Power Company LLC, a 90-day extension for responding to the August 13, 2010 RAI letter. FDEP granted the extension on the same day of receipt of the request, October 26, 2010.

On October 4, 2010, the Department requested information regarding GE Opflex in an email sent to Scott Osbourn from Robert Bull.

Golder is submitting the following information on behalf of the applicant, Shady Hills Power Company, LLC. The additional information is presented in the same sequence as in the FDEP's RAI letter, with a restatement of each comment followed by Golder's response in boldface italics. Finally, Golder is providing the additional information requested in the October 4, 2010 FDEP email correspondence.

1. RBC Clearinghouse Information: Please provide an updated nationwide project list from the RACT/BACT/ILAER Clearinghouse containing only projects with simple cycle or simple cycle/combined cycle units from 2005 to present. Units that are solely combined cycle should not be included in the list.

Response: The nationwide project list from RACT/BACT/LAER Clearinghouse, provided in Tables B-2 and B-3, has been updated to include only projects with simple cycle or simple cycle/combined cycle units from 2005 to present. Updated Tables B-2 and B-3 are included in Attachment A.

2. The following comments are based on the guidance for modeling and comparing nitrogen dioxide impacts (NO₂) to the new 1-hour national ambient air quality standard (NAAQS) which is located on the United States Environmental Protection (EPA) Technology Transfer Network Support Center for Regulatory Atmospheric Modeling (TTN-SCRAM) website at the following address: <http://www.epa.gov/scram001/>. NO₂ modeling guidance found on this website includes the following documents:

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5100 W. Lemon Street, Suite 208
Tampa, FL 33609 USA
Tel: (813) 287-1717 Fax: (813) 287-1716 www.golder.com



Tyler Fox's (Office of Air Quality Planning and Standards (OAQPS)) clarification memorandum, dated June 28, 2010, "Applicability of Appendix W Modeling Guidance for the 1-hour NO₂ National Ambient Air Quality Standard," Stephen Page's (OAQPS) memorandum, dated June 29, 2010, "Guidance Concerning the Implementation of the 1-hour NO₂ NAAQS for the Prevention of Significant Deterioration Program" and embedded in this memorandum is Anna Marie Wood's (OAQPS) memorandum, dated June 28, 2010, "General Guidance for Implementing the 1-hour NO₂ National Ambient Air Quality Standard in Prevention of Significant Deterioration Permits, Including an Interim 1-hour NO₂ Significant Impact Level.

- a. On page 33 of the application a justification for using a significant impact level (SIL) of 5 parts per billion is given. The reason for using this value is insufficient. Provide a more detailed justification for use of this level.

Response: The SIL was modified by EPA guidance during the performance of this evaluation. As such, the NO₂ NAAQS analysis has been revised to account for a SIL of 4 ppb. Tables 6-3 and 6-4 have been revised to account for an increase in the significant impact distance to 13.2 km, a value which was provided in the original PSD report. The updated NO₂ NAAQS analysis results are provided in Table 6-11. Updated Tables 6-3, 6-4 and 6-11 are provided in Attachment B.

- b. The emergency generator is proposed to increase in size. This unit was not included in the significant impact modeling inventory or the cumulative modeling inventory. Pages 4, 5 and especially paragraphs 1 and 2 on page 9 of the Stephen Page's June 29, 2010 memo give guidance on the operation of emergency equipment and its inclusion or exclusion in any modeling inventory. Please consult this guidance to determine whether permit conditions can be established that provide a basis for not modeling the 1-hour impacts of the emergency equipment, or if no conditions can be established include this unit in the modeling analyses.

Response: For clarification, the emergency generation is proposed to increase with the project. This will be accomplished with the addition of one new 1,000 kW emergency generator unit. The existing emergency generator will remain unchanged. An updated Table 2-4 is included with the response representing only the new 1,000 kW unit provided in Attachment C.

Generally, there are two operational scenarios to consider for emergency generator: routine testing and actual use under emergency conditions. As the following illustration indicates, we strongly feel that the duration of an emergency generator's operation under routine maintenance testing or emergency conditions should not be limited by the Department on a per event basis and that modeling is unnecessary. For routine testing the engine is tested once per month for 45 minutes to 1-hour. The emergency generator operation for true emergency conditions would be based on the nature and extent of the emergency causing the outage. However, the existing emergency generator unit's historical long-term use is being presented as an approximation of future operational scenarios for the proposed new emergency generator.

Existing Emergency Generator: Manufacturer: MTU, Type - 16V 2000

Following is a summary of the recent actual operation of the existing emergency generator. Since 2001 the unit has operated 111 times for a total of 157.32 hours, and average of 1.32 hours per event and 16.81 hours per year. The typical events that have caused operation of the emergency generator:

- **Routine maintenance testing (the primary operation during this 9+ year period);**
- **Power failure due to storms and equipment failures resulting in power loss at the site;**
- **Control failure of PLC causing false starts; and**
- **Breaker failure causing blackout, can be equipment or weather.**

Of the 157.32 total hours of operation since 2001, 56.15 hours occurred during emergency events, as summarized in Attachment C, Table 2B. It is important to note, from the table, that the emergency operation of the existing generator occurred on only 8 days over the 10 year period and for no more than 3 days any given year. Considering that a 1-hour NAAQS exceedance would require at least 8 daily maximum 1-hour concentration exceedances at a given receptor, the Shady Hills existing and proposed generators will not operate over enough days a year to have any realistic chance of significantly impacting the NAAQS. Therefore, it is concluded that to include the emergency generators in the NAAQS analysis at their maximum emissions and assumption of full year operation will potentially indicate an air quality issue due to just those sources that is extremely unrealistic. As is, the presented NAAQS modeling analysis includes all the primary NO₂ sources and also incorporates an ultra-conservative 1-hour background concentration.

- c. On page 44 of the application and in Table 6-11 a 1-hour NO₂ background of 54.6 ug/m³ is used to add to the Tier 1 and Tier 2 modeling results for comparison with the 1-hour NAAQS. This background value is based on the 3-year average of the 98th percentile of the daily maximum concentration at the monitoring site. Use of this background value may not be protective of the 1-hour standard. On page 5 of Tyler Fox's June 28, 2010 memo, a background value based on the highest hourly concentration is recommended as a "first tier" assumption. Please use this background value and add it to the Tier 1 and Tier 2 results. However, on page 5 of Tyler Fox's memo it also states that additional refinements to this "first tier" assumption based on some level of temporal pairing of modeled may be considered on a case-by-case basis, with adequate justification and documentation.

Response: Based on EPA's June 28, 2010 EPA guidance document, the highest measured hourly concentration over the most recent available 3-year period should be used. From a subsequent telephone discussion with Stan Krivo of the EPA regional office, it was initially understood that the 1-hour NO₂ (and similarly, 1-hour SO₂) background concentration could be based on the average of the highest measured hourly concentrations for the most recent available 3-year period. However, subsequent to that initial telephone discussion with EPA, it was confirmed by Mr. Krivo that the EPA's guidance actually implies that the highest concentration in three years be used for the background concentration. While there is no provision in the guidance to exclude potential outlier concentrations, Mr. Krivo did acknowledged that in his opinion such an exclusion would be appropriate provided that the exclusion of any such outlier concentrations could be supported from analysis of the dataset. For this project, the NAAQS modeling results have been updated to reflect the use of the highest 1-hour concentration measured concentration (i.e., 80.8 µg/m³) as the background concentration.

It should be noted that no outlier concentrations are being claimed for the current Shady Hills NO₂ background determination and the background concentration used for determining compliance with the NAAQS has been revised to reflect the highest measured concentration over the presented three years of measured data.

- d. The North Carolina screening technique known as the "20D approach" was used to evaluate which facilities may be eliminated from consideration in the cumulative modeling analysis. If two or more facilities are in close proximity to each other their emissions should be added together and if the combined emissions are more than the 20D value they should be included in the modeling inventory. Based on this consideration Tarmac Tampa's Terminal 500.1 tons per year should have been included with Tampa Culbreath's 1,157.2 tons per year and included in the inventory.

Response: The NO₂ cumulative source inventory has been updated to include the evaluation of several facilities that are in close proximity to one another. These facilities have been referenced in the updated Table 6-3. If the facilities that are in close proximity to one another passed the 20D approach screening, the emission sources were added to an updated Table 6-4.

- e. Maximum 1-hour emission rates should also be used for non-Shady Hills sources included in the NO₂ cumulative inventory. Please verify the basis for the emissions for each source in the invent

Response: The NO₂ cumulative sources inventory has been updated to include all maximum 1-hour emission rates and the basis, where such rates were available from an air permit or an application. The additional information has been added to the updated Table 6-4.

- f. Please re-run any modeling necessary to incorporate changes due to comments 2.b. to 2.e. If the Tier 1 and Tier 2 results are greater than the 1-hour standard, Tier 3 results provided in the application based on the Ozone Limiting Method (OLM) may become the basis for comparison to the standard. However, the use of any Appendix W Tier 3 methods (OLM and Plume Volume Molar Ratio Method (PVMRM)) represents use of non-regulatory default options that require case-by-case approval by the Regional EPA office either by e-mail or by letter. Please provide further detailed information over and beyond what has already been provided on the use of the Tier 3 OLM method to EPA for approval. This project will remain incomplete until EPA approval is received.

Response: It is understood, from subsequent discussion, that documentation of in-stack NO₂/NO_x measurements, coupled with available representative ozone measurements would provide a basis for using a refined Tier 3 approach such as the Ozone Limited Method (OLM) or the Plume Volume Molar Ratio Method (PVMRM). Depending on the representativeness of the measured ozone data, the data could be used in an hourly record, or used to obtain a conservative peak seasonal or annual value that would be included in the air modeling analysis. For the current analysis, the provided Tier 1 approach is the basis for the licensing effort. Tier 3 analysis results prepared for the original application assumed a default in-stack NO₂/NO_x ratio of 0.1 have been included in the application for informational purposes only.

3. Please address impacts on Class II visibility.

Response: Per discussions with FDEP, this analysis should address the potential plume visibility issues due to the proposed project that might occur at the Tampa International Airport (TPA). TPA is located approximately 42 km due south of the Shady Hills site. A typical Class II background visibility range of 40 km was assumed for the analysis. The Level 1 modeling results, assuming worst-case meteorological conditions (i.e., very stable "F" stability and a wind speed of 1 m/s), are presented in Attachment D, Figures 3-1 and 3-

2, respectively, for gas-firing and oil-firing emissions. Based on the Level 1 results, a Level 2 analysis was performed for the fuel oil-firing mode only. The Level 2 results, presented in Figure 3-3, assume more realistic meteorological conditions (i.e., neutral "D" stability and wind speed of 4 m/s) that could actually transport a plume 42 km within a 12 hour time frame. Based on this analysis, it is concluded that the proposed project's emissions will not cause an adverse impact on the existing visibility at TPA.

In response to the Department's information request regarding GE Opflex, sent via email to Scott Osbourn from Robert Bull on October 4, 2010, the following information is provided.

Per the vendor fact sheet, provided in Attachment E, Opflex Start Up NOx is a newer combustion mode that is available as an option to new or existing 7FA.03 gas turbines. It has been incorporated as a standard feature that is included for 7FA.04 and 7FA.05 gas turbines. When a client purchases a 7FA.05 gas turbine, this feature is included as standard scope. It can help reduce NOx emissions during start up with a combustion mode that generates less NOx from 20% of base load until the unit reaches its lowest emissions mode, which starts at approximately 40% base load for the 7FA.05 at ISO conditions. Therefore, this feature will be incorporated in the turbine model proposed for the Shady Hills project.

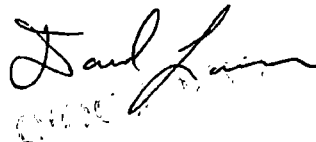
If you should have any questions, please contact us at (813) 287-1717.

Sincerely,

GOLDER ASSOCIATES INC.



Scott Osbourn, P.E.
Associate and Tampa Operations Manager



David Larocca
Senior Engineer

cc: Roy Belden, GE Energy Financial Services

Attachments: Attachment A— RACT/BACT/LAER Clearinghouse
Attachment B— Updated NAAQS Analysis Tables
Attachment C— Emergency Generator Tables 2-4 and 2B
Attachment D— Class II Visibility
Attachment E— GE Vendor Fact Sheet

PP/DL/OS/SM

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ATTACHMENT A

RACT/BACT/LAER Clearinghouse

Table B-2 Summary of Best Available Control Technology (BACT) Determinations for Nitrogen Oxide (NOx) Emissions for Simple Cycle Combustion Turbines

ExxonMobil Production Co.	AL	2-05	15	2	0	Solar	NG	SC	8,760	25 ppm	DLN		1 CT on each of 2 Offshore
Deerfield Beach Energy Center	FL	draft permit	510	3	0	GE 7FA (170 MW)	NG; FO	SC	3,500; 1000 FO	9 ppm NG; 42 ppm FO	DLN; WI	24-hr	
JEA Greenland Energy Center	FL	applic. under review	352 NG ; 380 FO	2	0	GE 7FA (176 MW)	NG	SC/CC	3,500 NG; 500 FO/ 8,760 NG; 500 FO	9/15 ppm NG; 42 ppm FO/ 2 ppm NG; 8 ppm FO	DLN; DLN/WI		PSD netting analysis and SD of 2 gas turbines
JEA Kennedy Generating Station	FL	applic. under review	172	1	0	GE 7FA (172 MW)	NG	SC	3,500; 500 FO	15.0 ppm NG/42.0 ppm FO	DLN;WI	4-hr rolling	Minor source of CO.
Keys Energy Services - Stock Island	FL	09/12/2005	48	1	0	GE LM6000	NG	SC	4,000	42 ppm	WI	24-hr	Not subject to PSD for CO
North Pond Energy Park	FL	applic. under review	430	2	0	GE 7FA (170 MW)	NG; FO	SC/CC	3,390/8,760; 720 FO	10 ppm (9 initial)/3.5 ppm NG; 42/15 ppm FO	DLN/SCR; WI	3-hr	1 SC CT and 1 CC CT also capable of operating in SC mode.
Oleander Power	FL	draft permit	190	1	1	GE 7FA	NG	SC	3,390/ 500 FO	9.0 ppm NG/42.0 ppm FO	DLN/WI	24-hr	
Orlando Utilities - Curtis H Stanton Energy Center	FL	12/22/2006	285	1	1	GE 7FA	NG	CC/SC	8,760	20.0 ppm SG/15.0 ppm NG	SI/SCR	30-day	
Orlando Utilities - Curtis H Stanton Energy Center	FL	12/22/2006	285	1	1	GE 7FA	NG	CC/SC	8,760	4.1 ppm NG/7.6 ppm NG w/DB; 8.0 ppm FO (&w/DB)	CatOX	24-hr	
Pompano Beach Energy Center, LLC	FL	draft permit	510	3	0	GE 7FA (170 MW)	NG; FO	SC	3,500; 1,500 FO	12 ppm NG; 42 ppm FO	DLN; WI		Hot SCR - \$20,400/ton NOx; CatOx - \$31,800/ton CO
Seminole Electric Cooperative - Payne Creek	FL	06/29/2005	448	10	0	P&W FT-8 twin pacs	NG	SC	2,500; 500 FO	25 ppm NG/42 ppm FO	WI	24-hr	Not subject to PSD for CO
Shady Hills Generating Station	FL	applic. under review	2,250	2	0	GE 7FA (170 MW)	NG; FO	SC	2,390; 750 FO	9 ppm NG; 42 ppm FO	DLN; WI		
South Pond Energy Park	FL	draft permit	600	3	0	GE 7FA (170 MW)	NG; FO	SC/CC	3,390/8,760; 720 FO	9 ppm /2.5 ppm NG; 36/10 ppm FO	DLN/SCR; WI	3-hr	2 SC CT and 1 CC CT also capable of operating in SC mode.
TECO Bayside Power Station	FL	applic. under review	248	8	0	P&W FT-8 SwiftPacs (62 MW)	NG	SC	3,500	25.0 ppm	WI		
TECO Polk	FL	04/28/2006	330	2	?	GE 7FA	NG	SC	8,760	9.0 ppm	DLN	24-hr	
MEA of Georgia - W. R. Clayton	GA	draft permit	500	3	0	GE 7FA (170 MW)	NG; FO	SC	8,760; 1,500 FO	12 ppm NG; 42 ppm FO	DLN; WI	24-hr	Hot SCR - \$14,100/ton NOx; CatOx - \$15,000/ton CO
Peace Valley Generation Co., LLC	GA	draft permit	1,550	6	4	GE 7FA (170 MW)	NG	CC/SC	8,760/2,500	2.5/9.0 ppm	SCR/DLN	3-hr	
Duke Energy - Marshall Co.	KY	draft permit	640	8	0	GE 7EA (80 MW)	NG; FO	SC	2,500; 500 FO	12/9 ppm NG; 42 ppm FO	DLN; WI	1-hr/an	
Duke Energy Metcalfe	KY	draft permit	640	8	0	GE 7EA (80 MW)	NG	SC	2,500	12/9 ppm	DLN	1-hr/an	
Dynegy - Riverside Generating	KY	applic. under review	850	5	0	SW 501FD (170 MW)	NG	SC	4,000	15 ppm	DLN/SCR		Modification to increase hours of operation - proposes 2 CTs w/Hot
Summer Shade Development Co.	KY	applic. under review	680	4	0	GE 7FA (170 MW)	NG	SC	4,000	9 ppm	DLN		
Westlake Energy Corp.	KY	draft permit	520	2	2	"F" Class (180 MW)	NG	SC	8,760	4.5 ppm	SCR		
South Mississippi Electric Power Assn.	MS	draft	84	1	0	GE 7EA (83.5 MW)	NG	SC	5,500	9 ppm	DLN	3-hr	Hot SCR - \$9,973/ton NOx; CatOx - \$2,417/ton CO
Carolina Power & Light, Richmond Co. (2nd revision - new configuration)	NC	applic. under review	2,040	9	0	GE 7FA (170 MW)	NG; FO	CC/SC	8,760/2,000; 1,000 FO	3.5/9 ppm NG; 13/42 ppm FO	SCR/DLN; SCR/WI	24-hr	Reconfiguration of facility: 6 CC and 3 SC CTs
Progress Energy - Carolinas	NC		575	2	2	SW SGT6-5000F (190MW)	NG; FO	CC/SC	8,760 CC; 4,000 SC; 2,000 FO	SC: 9 ppm NG; 42 ppm FO / CC: 2.5/3.5 ppm NG; 13/18 ppm FO	SC: DLN; WI / CC: SCR (both)		
Progress Energy - Wayne Co.	NC	draft permit	170	1	0	GE 7FA (170 MW)	NG; FO	SC	2,000	9 ppm NG; 42 ppm FO	DLN/WI		
Duke Energy - Lee Steam Station	SC	draft permit	82	2	0	GE LM6	NG; FO	SC	4,400; 3,900 FO	25 ppm NG; 42 ppm FO	?		Not subject to PSD for CO
Duke Power - Mill Creek (f/k/a/ RJPP)	SC	11-01	654	8	0	GE 7EA (80 MW)	NG; FO	SC	2,400; 1,000 FO	10.5 (9 initially) ppm NG; 42 ppm FO	DLN; WI	24-hr	
GenPower Anderson - revision	SC	applic. under review	340	2	0	GE 7FA (170 MW)	NG	SC	2,928	9 ppm	DLN		Temporary 4 month operating period - **Not Subject to PSD Review for CO, VOC or SO2
Greenville Generating	SC	draft permit	930	6	0	GE 7FA (155 MW)	NG; FO	SC	3,400; 1,000 FO	9 ppm NG; 42 ppm FO	DLN; WI		Hot SCR - \$13,909/ton NOx; CatOx - \$8,204/ton CO
Southern Power Co.	TN	applic. under review	1,940	8	4	GE 7FA (170 MW)	NG; FO	CC/SC	8760; 1,000 FO	3.5/9 ppm NG; 12/42 ppm FO	SCR/DLN; SCR/WI		

Table B-3 Summary of Best Available Control Technology (BACT) Determinations for Carbon Monoxide (CO) Emissions for Simple Cycle Combustion Turbines

ExxonMobil Production Co.	AL	02/01/2005	15	2	0	Solar	NG	SC	8,760	50 ppm	GCP		1 CT on each of 2 Offshore
Deerfield Beach Energy Center	FL	draft permit	510	3	0	GE 7FA (170 MW)	NG, FO	SC	3,500; 1,000 FO	9 ppm NG; 20 ppm FO	GCP		
JEA Greenland Energy Center	FL	applic. under review	352 NG; 380 FO	2	0	GE 7FA (176 MW)	NG	SC/CC	3,500 NG; 500 FO/ 8,760 NG; 500 FO	4.1 ppm NG/7.6 ppm NG w/DB; 8.0 ppm FO	GCP		PSD netting analysis and SD of 2 gas turbines
JEA Kennedy Generating Station	FL	applic. under review	172	1	0	GE 7FA (172 MW)	NG	SC	3,500; 500 FO	4.1 ppm NG/7.6 ppm NG w/DB; 8.0 ppm FO	GCP	3-hr test	Minor source of CO.
Keys Energy Services - Stock Island	FL	09/12/2005	48	1	0	GE LM6000	NG	SC	4,000		GCP		Not subject to PSD for CO
North Pond Energy Park	FL	applic. under review	430	2	0	GE 7FA (170 MW)	NG; FO	SC/CC	3,390/8,760; 720 FO	9 ppm NG; 20 ppm FO	GCP		1 SC CT and 1 CC CT also capable of operating in SC mode.
Oleander Power	FL	draft permit	190	1	1	GE 7FA	NG	SC	3,390/ 500 FO	4.1 ppm NG/7.6 ppm NG w/DB; 8.0 ppm FO	GCP		
Orlando Utilities - Curtis H Stanton Energy Center	FL	12/22/2006	285	1	1	GE 7FA	NG	CC/SC	8,760	4.1 ppm NG/7.6 ppm NG w/DB; 8.0 ppm FO	CatOX	24-hr	
Pompano Beach Energy Center, LLC	FL	draft permit	510	3	0	GE 7FA (170 MW)	NG; FO	SC	3,500; 1,500 FO	9 ppm NG; 20 ppm FO	GCP		Hot SCR - \$20,400/ton NOx; CatOx- \$31,800/ton CO
Seminole Electric Cooperative - Payne Creek	FL	06/29/2005	448	10	0	P&W FT-8 twin pacs	NG	SC	2,500; 500 FO		CatOX		Not subject to PSD for CO
Shady Hills Generating Station	FL	applic. under review	2,250	2	0	GE 7FA (170 MW)	NG; FO	SC	2,390; 750 FO	6.5 ppm NG; 13.5 ppm FO	CatOX		
South Pond Energy Park	FL	draft permit	600	3	0	GE 7FA (170 MW)	NG; FO	SC/CC	3,390/8,760; 720 FO	9 ppm NG; 20 ppm FO	GCP	3-hr	2 SC CT and 1 CC CT also capable of operating in SC mode.
TECO Bayside Power Station	FL	applic. under review	248	8	0	P&W FT-8 SwiftPacs (62 MW)	NG	SC	3,500	6 ppm	CatOX		
TECO Polk	FL	04/28/2006	330	2	?	GE 7FA	NG	SC	8,760	4.1 ppm NG/7.6 ppm NG w/DB; 8.0 ppm FO	GCP	12 mo.	
Oglethorpe Power Corp. - Talbot	GA	applic. under review	648	6	0	SW V84.2 (108 MW)	NG; FO	SC	8,760; 500 FO	8 ppm NG; 15 ppm FO	GCP	3-hr	Revision to NOx, CO, & S/S
Peace Valley Generation Co., LLC	GA	draft permit	1,550	6	4	GE 7FA (170 MW)	NG	CC/SC	8,760/2,500	2.0 ppm/8.0 ppm	CatOx/GCP	3-hr	
Southern Power Co.	GA	applic. under review	760	4	0	SW 5F	NG; FO	SC	4,000; 1,000 FO	9 ppm NG; 30 ppm FO	GCP		
Duke Energy - Marshall Co.	KY	draft permit	640	8	0	GE 7EA (80 MW)	NG; FO	SC	2,500; 500 FO	20 ppm NG; 25 ppm FO	GCP		
Duke Energy Metcalfe	KY	draft permit	640	8	0	GE 7EA (80 MW)	NG	SC	2,500	12/9 ppm	DLN	1-hr/an	
Dynegy - Riverside Generating	KY	applic. under review	850	5	0	SW 501FD (170 MW)	NG	SC	4,000	15 ppm	DLN/SCR		Modification to increase hours of operation - proposes 2 CTs
East Kentucky Power Cooperative - J. K. Smith Plant	KY	applic. under review	204	2	0	GE LMS100 (102 MW)	NG	SC	4,000	6 ppm	CatOx	3-hr avg.	S/S Conditions were commented on EPA Region 4 review of the
Summer Shade Development Co.	KY	applic. under review	680	4	0	GE 7FA (170 MW)	NG	SC	4,000	9 ppm	DLN		
Westlake Energy Corp.	KY	draft permit	520	2	2	"F" Class (180 MW)	NG	SC	8,760	4.5 ppm	SCR		
Lakefield Junction	MN	draft permit	552	6		GE model PG7121EA (92 MW)	NG; FO	SC	7,300	25 ppm NG; 20 ppm FO	GCP	3-hr	PSD; SCR rejected @ \$11,500/ton; Ox Cat rejected at
Carolina Power & Light, Richmond Co. (2nd revision - new configuration)	NC	applic. under review	2,040	9	0	GE 7FA (170 MW)	NG; FO	CC/SC	8,760/2,000; 1,000 FO	9 ppm NG; 20 ppm FO	GCP		Reconfiguration of facility: 6 CC and 3 SC CTs
Progress Energy - Carolinas	NC		575	2	2	SW SGT6-5000F (190MW)	NG; FO	CC/SC	8,760 CC; 4,000 SC; 2,000 FO	4 PPM (70% load) NG/10 PPM (60-70% load) NG/10 ppm (w/DB) NG; 30 ppm	GCP		
Progress Energy - Wayne Co.	NC	draft permit	170	1	0	GE 7FA (170 MW)	NG; FO	SC	2,000		GCP		
Duke Energy - Lee Steam Station	SC	draft permit	82	2	0	GE LM6	NG; FO	SC	4,400; 3,900 FO				Not subject to PSD for CO
Duke Power - Mill Creek (f/k/a/ RIPP)	SC	11/08/2001	654	8	0	GE 7EA (80 MW)	NG; FO	SC	2,400; 1,000 FO	25 ppm NG; 20 ppm FO	GCP	24-hr	
GenPower Anderson - revision	SC	applic. under review	340	2	0	GE 7FA (170 MW)	NG	SC	2,928	9 ppm**	GCP		Temporary 4 month operating period - **Not Subject to PSD Review for CO, VOC or SO2
Greenville Generating	SC	draft permit	930	6	0	GE 7FA (155 MW)	NG; FO	SC	3,400; 1,000 FO	9 ppm NG; 36 ppm FO	GCP		Hot SCR - \$13,909/ton NOx; CatOx - \$8,204/ton CO
Southern Power Co.	TN	applic. under review	1,940	8	4	GE 7FA (170 MW)	NG; FO	CC/SC	8760; 1,000 FO	0.035 lb/mmmbtu NG; 0.069	GCP		
Wisconsin Electric	WI	draft permit	85	1		GE 7EA (85 MW)	NG; FO	SC	178,000 MWhrs, 2,000 hrs, 100 hr power aug.	25 ppm NG (100% load)/ 45 ppm (>75% load)/ 100 ppm	GEP	1-hr	BACT; SCR rejected at \$10,257/ton; Ox Cat rejected at

ATTACHMENT B

Updated NAAQS Analysis Tables

TABLE 6-3
SUMMARY OF THE NO_x FACILITIES CONSIDERED FOR INCLUSION IN THE AAQS AND PSD CLASS II AIR MODELING ANALYSES

AIRS Number	Facility	County	UTM Coordinates		X (km)	Y (km)	Distance (km)	Direction (deg)	Maximum NO _x Emissions (TPY)	Q _x (TPY) Emission Threshold ^{b,c} (Dist - SID) x 20	Include in Modeling Analysis ?
			East (km)	North (km)							
Modeling Area^d											
1010373	Shady Hills Generating Station	Pasco	347.0	3,139.0	-0.4	0.5	0.63	323	4,612.1	SIA	YES
1010056	Pasco County Resource Recovery Facility	Pasco	347.0	3,139.0	-0.4	0.5	0.63	323	1,006.7	SIA	YES
1010377	Foster's Pet Cremation Service - Spring Hill Facility	Pasco	347.1	3,146.2	-0.3	7.7	7.71	358	0.0	SIA	YES
1010349	Thomas B. Dobles Funeral Home, Inc.	Pasco	338.3	3,138.1	-9.1	-0.4	9.09	267	0.0	SIA	YES
1010028	Overstreet Paving Spring Hill Asph. Plant	Pasco	355.9	3,143.8	8.5	5.3	10.06	58	45.1	SIA	YES
1010344	J.E. Ausley Construction Inc.	Pasco	356.3	3,145.6	8.9	7.1	11.38	52	6.3	SIA	YES
0530372	Downing Funeral Home & Cremation Svcs.	Hernando	340.1	3,148.1	-7.3	9.6	12.05	329	1.2	SIA	YES
1010042	Southeastern Crematories No. 19	Pasco	335.1	3,136.6	-12.3	-1.9	12.47	261	8.8	SIA	YES
Screening Area^d											
0530357	D.A.B. Construct - Plant No. 2 (Spring Hill)	Hernando	358.5	3,151.4	11.2	12.9	17.06	41	17.8	81.3	NO
1010378	SR 54 Odessa Yard	Pasco	345.1	3,120.2	-2.3	-18.3	18.49	187	54.6	109.8	NO
1010041	Odessa Asphalt Plant	Pasco	340.8	3,119.7	-6.6	-18.8	19.96	199	1.7	139.1	NO
1010027	Ajax Paving Industries	Pasco	341.8	3,119.2	-5.8	-19.3	20.07	196	13.3	141.4	NO
0530365	Hernando Co. Animal Services - Animal Crematory	Hernando	362.5	3,156.0	15.2	17.5	23.16	41	3.8	203.2	NO
0530021	Cemex Brooksville S. Cement & Power Plant	Hernando	360.0	3,162.3	12.6	23.8	26.97	28	5,277.5	279.3	YES
0530044	Cemex Brooksville South	Hernando	358.4	3,163.6	11.0	25.1	27.38	24	23.5	287.6	NO
1010017	Anclote Power Plant	Pasco	324.4	3,118.9	-22.9	-19.6	30.15	230	2,121.1	343.1	YES
1030044	Tarpon Springs Facility	Pinellas	328.0	3,116.9	-21.4	-21.6	30.38	225	26.5	347.6	NO
0530010	Cemex Brooksville (N) Cement Plant	Hernando	356.0	3,169.2	8.7	30.7	31.92	16	1,971.0	378.4	YES
0530376	Timberline Energy NW Solid Waste Facility	Hernando	354.0	3,172.6	6.6	34.1	34.76	11	32.2	435.1	NO
0530379	Hernando Co. SW and Recycling Facility	Hernando	355.0	3,172.6	7.6	34.1	34.95	13	7.9	438.9	NO
0571320	Hills Co. Water Resource Svcs. - NWRMF	Hillsborough	342.3	3,108.3	-5.1	-32.2	32.56	189	18.5	391.3	NO
0530050	Florida Rock - Brooksville Grinding Plant	Hernando	361.5	3,169.8	14.1	31.3	34.34	24	8.2	426.9	NO
0571269	H. Lee Moffitt Cancer Center	Hillsborough	360.4	3,105.1	13.0	-33.4	35.85	159	35.1	457.0	NO
0570480	University of South Florida	Hillsborough	360.8	3,104.8	13.4	-33.7	36.30	158	25.1	466.0	NO
								Sum =	60.2	517.0^e	NO
0570001	Johnson Controls Battery Group, Inc.	Hillsborough	359.9	3,102.5	12.5	-36.0	38.11	161	3.4	502.3	NO
0570006	Yuengling Brewing Co.	Hillsborough	362.0	3,103.2	14.6	-35.3	38.21	168	3.9	504.2	NO
0570160	Ball Metal Beverage Container Corp.	Hillsborough	362.0	3,103.2	14.6	-35.3	38.21	158	7.9	504.2	NO
								Sum =	11.8	564.2^e	NO
1010505	Agri-Source Fuels, LLC	Pasco	383.4	3,139.5	36.1	1.0	36.06	88	12.0	461.3	NO
1010002	Vitality Foodservice Dade City Coffee	Pasco	383.5	3,139.4	36.1	0.8	36.14	89	1.2	462.8	NO
1010071	Pasco Cogen, Limited	Pasco	383.5	3,139.3	36.1	0.8	36.15	89	405.0	463.0	NO
								Sum =	418.2	521.3^e	NO
1030114	MI Metals - Oldsmar	Pinellas	336.7	3,103.2	-10.7	-35.3	36.89	197	12.1	477.8	NO
1030012	Progress Energy - Higgins Plant	Pinellas	336.5	3,098.4	-10.9	-40.1	41.55	195	5,063.8	571.0	YES
1010045	Dade City Location	Pasco	384.7	3,133.6	37.3	-4.9	37.61	98	4.4	492.1	NO
0570262	Chromalloy Casting Tampa, Corporation	Hillsborough	349.0	3,100.0	1.6	-38.5	38.53	178	13.7	510.7	NO
1010492	Faithful Friends Animal Crematory	Pasco	384.3	3,123.8	38.9	-14.9	39.79	112	3.3	535.7	NO
7770380	Reloc. Pugmill No. 053 - Yonkers Blvd.	Pasco	387.0	3,122.1	39.6	-16.4	42.91	113	12.3	598.2	NO
1030217	Eternal Rest Funeral - Suncoast Crem., Inc.	Pinellas	329.2	3,101.7	-19.2	-36.8	41.50	208	1.7	570.0	NO
0530017	ER Jahna Industries - Mills Mine	Hernando	386.7	3,155.8	39.4	17.3	42.99	66	3.8	599.9	NO
0570089	ST. Joseph's Hospital	Hillsborough	353.2	3,095.7	5.9	-42.8	43.16	172	81.1	603.3	NO
0571279	FGTC Station No. 27, Hillsborough Co.	Hillsborough	372.2	3,102.4	24.8	-36.1	43.78	146	50.0	615.6	NO
0571151	International Paper Company	Hillsborough	362.8	3,098.3	15.4	-40.2	43.06	159	10.2	601.1	NO
0570097	Bonsal American	Hillsborough	363.6	3,099.5	16.2	-40.0	43.16	158	6.6	603.3	NO
0570223	AFAC-Southeast Inc. - Central Florida Div.	Hillsborough	364.0	3,098.1	16.6	-40.4	43.69	158	37.4	613.7	NO
0571337	Tampa Pavement Constructors, Inc.	Hillsborough	364.3	3,097.6	16.9	-40.9	44.22	158	28.0	624.5	NO
								Sum =	82.3	661.3^e	NO

1030132 One Source Coil Coaters, LLC.	Pinellas	332.1	3,096.1	-15.3	-42.4	45.09	200	9.2	641.7	NO	
0570003 CF Industries, Inc.	Hillsborough	360.5	3,094.4	13.1	-44.1	46.00	163	12.0	659.9	NO	
0570461 Blackidge Emulsions Plant No. 3	Hillsborough	359.5	3,093.2	12.1	-45.3	46.89	165	4.1	677.9	NO	
0570021 International Ship	Hillsborough	358.0	3,092.8	10.7	-45.8	46.97	167	89.0	679.5	NO	
0570005 CF Industries - Plant City Phosp. Complex	Hillsborough	388.1	3,115.9	40.7	-22.6	48.55	119	194.9	671.0	NO	
1050400 Kathleen Site	Polk	392.5	3,123.9	45.2	-14.6	47.46	108	16.5	689.2	NO	
7775350 Kathleen Site	Polk	392.8	3,124.3	45.4	-14.2	47.56	107	13.8	691.1	NO	
								Sum =	30.3	749.2 ^e	NO
0570057 Envirofocus Technologies, LLC	Hillsborough	364.0	3,093.5	16.8	-45.0	47.87	160	103.4	689.4	NO	
0570119 Gulf Coast Metals	Hillsborough	364.7	3,093.6	17.3	-44.9	48.12	159	6.7	702.5	NO	
								Sum =	110.1	759.4 ^f	NO
0570090 Master - Halco, Inc.	Hillsborough	368.2	3,094.6	20.8	-43.9	48.59	155	7.0	711.7	NO	
0570321 Mantua Manufacturing Co.	Hillsborough	364.7	3,092.5	17.3	-46.0	49.15	159	12.8	723.1	NO	
0570127 McKey Bay Refuse-To-Energy Facility	Hillsborough	360.2	3,092.2	12.8	-46.3	48.03	165	679.0	700.6	NO	
0570080 Marathon Petroleum Company, LLC	Hillsborough	359.5	3,091.7	12.1	-46.8	48.34	165	7.6	706.9	NO	
0570442 Gulf Marine Repair - Hendry Corp.	Hillsborough	360.3	3,091.9	12.9	-46.6	48.38	165	142.8	707.2	NO	
								Sum =	829.5	766.6 ^e	YES
0570041 FL Health Sciences Ctr., Inc.	Hillsborough	356.4	3,091.0	9.0	-47.5	48.35	169	15.3	707.0	NO	
0570016 Citgo Tampa Terminal	Hillsborough	357.6	3,090.4	10.2	-48.1	49.17	168	19.6	723.5	NO	
								Sum =	34.9	767.0 ^e	NO
0571316 Florida Environmental Resources Corp.	Hillsborough	362.4	3,091.0	15.0	-47.5	49.82	162	80.0	738.4	NO	
0570025 Trademark Nitrogen Corp.	Hillsborough	367.3	3,092.6	19.9	-45.9	50.04	157	75.1	740.7	NO	
0570061 Tampa Armature Works	Hillsborough	365.7	3,091.8	18.3	-46.7	50.19	159	14.7	743.7	NO	
0570261 Hillsborough City Resource Recovery Fac.	Hillsborough	368.7	3,092.7	21.3	-45.8	50.51	155	1,119.9	750.2	YES	
0570081 TransMontaigne Tampa Terminal	Hillsborough	358.0	3,089.1	10.6	-49.4	50.53	168	4.0	750.6	NO	
0570085 Central Florida Pipeline Tampa Terminal	Hillsborough	358.0	3,089.0	10.6	-49.5	50.63	168	7.1	752.5	NO	
0570266 Tampa Ship, LLC	Hillsborough	358.0	3,089.0	10.6	-49.5	50.63	168	188.0	752.5	NO	
								Sum =	199.0	810.6 ^e	NO
0170021 Central Materials Company, Inc.	Citrus	355.5	3,188.5	8.1	50.0	50.66	9	16.9	753.1	NO	
0571402 Anchor Sandblasting and Painting, Inc.	Hillsborough	361.2	3,089.4	13.8	-49.1	50.98	164	30.9	759.5	NO	
1030091 Morton Plant Mease Health Care	Pinellas	323.0	3,093.2	-24.4	-45.3	51.45	208	80.0	769.1	NO	
0570373 Howard F. Curren AWT Plant	Hillsborough	364.0	3,089.5	16.6	-49.0	51.74	161	89.5	774.8	NO	
7775551 The Lane Construction Corp.	Hillsborough	358.4	3,088.0	11.0	-50.5	51.66	168	33.7	773.2	NO	
0571401 Separation Technologies Flyash Loading	Hillsborough	358.3	3,087.9	10.9	-50.6	51.76	168	49.2	775.3	NO	
								Sum =	82.9	833.2 ^e	NO
0570254 Vertis, Inc.	Hillsborough	350.3	3,086.4	2.9	-52.1	52.18	177	4.3	783.6	NO	
0571290 Tarmac Tampa Terminal	Hillsborough	359.9	3,087.8	12.6	-50.7	52.22	168	500.1	794.5	NO	
0570040 Tampa Electric Co. - H. L. Culbreath-Bayside Power Sta.	Hillsborough	360.6	3,087.5	13.3	-51.0	52.71	165	1,157.2	794.3	YES	
0571217 SEA 3 of FL, Inc. (Tampa LPG Terminal)	Hillsborough	360.1	3,087.1	12.7	-51.4	52.95	166	50.5	799.0	NO	
								Sum =	1,707.7	844.5 ^e	YES
1030127 Clearwater Culvert MFG Facility	Pinellas	329.1	3,089.3	-18.3	-49.2	52.45	200	1.3	789.0	NO	
1030047 Southeastern Crematories	Pinellas	329.2	3,089.1	-18.2	-49.4	52.64	200	9.1	792.8	NO	
								Sum =	10.4	849.0 ^e	NO
1030060 City of Largo Wastewater Treatment Plant	Pinellas	332.5	3,088.0	-14.9	-50.5	52.85	196	6.2	793.0	NO	
0570252 Cemex Port Sutton Tampa	Hillsborough	358.8	3,086.9	11.4	-51.6	52.85	168	8.6	797.0	NO	
0570056 GAF Materials Corporation	Hillsborough	362.4	3,087.2	15.0	-51.4	53.49	164	4.9	809.8	NO	
0570224 Harsco Corporation	Hillsborough	362.2	3,085.5	14.8	-53.0	55.03	164	7.8	840.7	NO	
0570008 Mosaic Fertilizer - Riverview Facility	Hillsborough	363.9	3,082.4	16.8	-56.1	58.52	164	521.0	910.4	NO	
								Sum =	533.7	869.8 ^e	NO
0571185 Corn Syrup Distribution Facility	Hillsborough	348.3	3,085.4	0.9	-53.1	53.11	179	11.0	802.2	NO	
1190011 Robbins Manufacturing Co.	Sumter	397.1	3,158.8	49.8	20.3	53.74	68	25.2	814.8	NO	

1030112	Catalent Pharma Solutions	Pinellas	335.3	3,085.8	-12.0	-52.7	54.03	193	1.6	820.8	NO	
7770073	Clearwater Asphalt Plant	Pinellas	333.9	3,086.1	-13.4	-52.4	54.08	194	26.0	821.5	NO	
1030147	Sonny Glasbrenner, Inc.	Pinellas	334.3	3,085.9	-13.1	-52.6	54.17	194	46.2	823.4	NO	
1030473	Palm State Crematory Services	Pinellas	334.6	3,085.8	-12.8	-52.7	54.21	194	2.2	824.2	NO	
									Sum =	76.0	880.6 ^f	NO
0570028	New NGC, Inc.	Hillsborough	348.0	3,082.7	0.6	-55.8	55.81	179	185.3	856.2	NO	
0570055	Chevron Port Tampa Terminal	Hillsborough	348.2	3,082.5	0.8	-56.0	56.03	179	5.8	860.5	NO	
									Sum =	191.1	916.2 ^f	NO
0570438	FGTC - Plant City - Station 30	Hillsborough	391.9	3,106.6	44.6	-31.9	54.80	126	44.6	835.9	NO	
0570320	Dart Container Corp. of Florida	Hillsborough	384.9	3,088.2	37.5	-40.3	55.06	137	28.2	841.2	NO	
0571349	Pallet Services, Inc.	Hillsborough	384.8	3,097.2	37.4	-41.3	55.73	136	20.8	854.8	NO	
									Sum =	49.0	901.2 ^f	NO
1030117	Pinellas Co. Resource Recovery Facility	Pinellas	335.3	3,084.3	-12.1	-54.2	55.53	193	2,802.8	850.5	YES	
1190007	Metal Industries - Bushnell	Sumter	390.7	3,173.2	43.4	34.7	55.54	51	19.7	850.7	NO	
1030288	Bay Linen, Inc.	Pinellas	333.2	3,084.7	-14.2	-53.8	55.69	195	14.3	853.7	NO	
0170035	FGTC Station 26 - Lecanto Citrus Co.	Citrus	353.1	3,194.0	5.8	55.5	55.80	6	101.2	856.1	NO	
1030011	Barlow Power Plant	Pinellas	343.6	3,082.7	-3.8	-55.8	55.95	184	12,313.6	859.0	YES	
1030218	M C Graphics, Inc., DBA - Sandy Alexander	Pinellas	337.2	3,083.2	-10.2	-55.3	56.23	190	1.2	864.8	NO	
0570293	Cory Packaging, Inc., DBA - Master Packaging	Hillsborough	350.6	3,082.2	3.2	-56.3	56.39	177	1.6	867.8	NO	
1030509	Cox Target Media, St. Petersburg Facil.	Pinellas	336.0	3,083.2	-11.4	-55.3	56.44	192	14.9	868.7	NO	
0570141	Macdill AFB	Hillsborough	353.5	3,081.5	6.1	-57.0	57.33	174	70.7	868.8	NO	
1030026	R.E. Purcell Construction Co., Inc.	Pinellas	328.4	3,087.6	-21.0	-50.9	55.01	202	39.3	840.1	NO	
1030017	Bay Area Crematory	Pinellas	329.2	3,086.5	-18.1	-52.0	55.08	199	4.6	841.6	NO	
1030020	SPCA Tampa Bay	Pinellas	326.3	3,086.0	-21.1	-52.5	56.56	202	1.5	871.1	NO	
0571147	Plant City Division	Hillsborough	388.7	3,099.4	41.3	-39.1	56.90	133	60.8	878.1	NO	
0570370	Paradise, Inc.	Hillsborough	388.5	3,099.0	41.1	-39.5	57.02	134	4.2	880.4	NO	
0570296	Hydrocarbon Recovery Services, Inc.	Hillsborough	389.0	3,098.0	41.8	-40.5	58.07	134	21.5	901.5	NO	
									Sum =	86.5	938.1 ^f	NO
0170024	Strickland Funeral Home	Citrus	347.3	3,195.7	-0.1	57.2	57.18	360	1.2	883.6	NO	
1030240	Cox Target Media - Valpak DMS, Inc.	Pinellas	327.1	3,084.8	-20.3	-53.7	57.44	201	1.6	888.9	NO	
1030018	Pinellas County Animal Services	Pinellas	321.6	3,085.7	-25.7	-52.8	58.78	208	3.1	915.7	NO	
Beyond Screening Area out to 100 km^d												
0571323	Farkas Land Clearing & Development	Hillsborough	384.3	3,090.2	36.9	-48.3	60.79	143	66.5	955.9	NO	
1050099	AOC, L.L.C.	Polk	401.0	3,109.9	53.6	-29.7	61.26	119	39.5	965.3	NO	
1190018	Consolidated Minerals - Center Hill Mine	Sumter	401.3	3,170.3	53.9	31.8	62.60	60	35.5	991.9	NO	
0570460	James Hardie Building Products, Inc.	Hillsborough	387.1	3,089.5	39.7	-49.0	63.04	141	62.3	1000.7	NO	
1050015	US Beverage Lakeland Plant	Polk	399.1	3,102.1	51.7	-36.4	63.24	125	20.8	1004.8	NO	
1050320	Lakeland Plant	Polk	402.0	3,106.2	54.7	-32.3	63.46	121	17.8	1009.2	NO	
1190041	Center Hill Plant (Construction Permit for Pyroprocessing Plai	Sumter	404.2	3,167.5	56.8	29.0	63.75	63	1,873.0	1015.0	NO	
1050352	Winston Peaking Station	Polk	400.1	3,100.7	52.7	-37.8	64.86	126	750.0	1037.2	NO	
1050174	Pepperidge Farm, Inc.	Polk	403.6	3,105.8	58.3	-32.7	65.07	120	23.0	1041.5	NO	
0570039	Tampa Electric Co. - Big Bend Station	Hillsborough	381.8	3,075.0	14.5	-63.5	65.11	167	50,718.6	1042.2	YES	
0571328	Separation Technologies	Hillsborough	361.9	3,075.0	14.5	-63.5	65.14	167	51.8	1042.8	NO	
0571242	New NGC, INC., Apollo Beach	Hillsborough	384.7	3,075.6	17.3	-62.9	65.21	165	96.2	1044.2	NO	
1030214	Lifoam Industries	Pinellas	328.8	3,075.8	-18.5	-62.7	65.41	196	15.5	1048.2	NO	
1030095	Bayfront Medical Center Special Services	Pinellas	338.0	3,072.1	-9.3	-66.4	67.03	188	19.1	1080.7	NO	
1050408	Clean Fuel, Lakeland, LLC	Polk	404.1	3,102.2	56.7	-36.3	67.28	123	11.9	1085.6	NO	
0170004	Crystal River Power Plant	Citrus	334.3	3,204.5	-13.1	66.0	67.28	349	48,046.0	1085.7	YES	
1030013	Bayboro Power Plant	Pinellas	338.8	3,071.3	-8.8	-67.2	67.75	187	3,637.8	1094.9	YES	
1190042	Sumptersville Cement Plant	Sumter	399.8	3,181.9	52.4	43.4	68.07	50	1,088.0	1101.5	NO	
1050095	Lakeland and Regional Medical Center	Polk	408.7	3,104.1	59.4	-34.4	68.63	120	27.0	1112.5	NO	
1050004	Lakeland Electric - C.D. McIntosh, Jr. Power Plant	Polk	408.0	3,106.5	61.7	-32.0	69.47	117	17,828.9	1129.3	YES	
1050003	Lakeland Electric - Charles Larsen Memorial Power Plant	Polk	409.0	3,102.8	61.6	-35.7	71.22	120	3,825.0	1164.4	YES	
1050127	Juice Bowl Products	Polk	408.5	3,099.8	62.1	-38.7	73.19	122	124.0	1203.8	NO	
1050125	Chemical Lime Co. - Nichols Terminal	Polk	397.3	3,084.3	49.9	-54.2	73.70	137	21.8	1214.0	NO	
0694854	Camasphalt Paving	Lake	418.0	3,160.2	70.6	21.7	73.87	73	19.2	1217.5	NO	
1050100	Hexion Specialty Chem. - Lakeland Plant	Polk	410.6	3,099.1	63.3	-39.4	74.51	122	18.9	1230.2	NO	
1050341	Turner Coatings	Polk	402.5	3,086.7	55.1	-51.8	75.65	133	10.7	1253.1	NO	
1190048	Otokumpu Stainless Pipe, Inc.	Sumter	398.7	3,194.6	51.3	56.1	76.01	42	12.8	1280.2	NO	
1050319	Clark Environmental, Inc.	Polk	403.0	3,086.4	55.6	-52.1	76.22	133	99.0	1284.4	NO	

7774804	The Lane Construction Corp. Plant No. 1	Polk	412.5	3,097.7	65.1	-40.8	76.85	122	33.4	1278.9	NO
1050215	Wood Mulch Products, Inc.	Polk	413.6	3,099.2	66.2	-39.3	76.95	121	62.0	1279.0	NO
1050059	Mosaic Fertilizer - New Wales Facility	Polk	396.6	3,079.2	49.3	-59.3	77.07	140	803.1	1281.3	NO
1050413	Mother's Recycling	Polk	414.1	3,099.5	68.7	-39.1	77.30	120	17.9	1286.0	NO
1050312	Master Containers, Inc.	Polk	404.1	3,085.8	58.7	-52.7	77.42	133	15.8	1288.5	NO
0690046	Lake County Resource Recovery Facility	Lake	413.2	3,179.4	65.8	40.9	77.49	58	475.7	1289.9	NO
1050387	General Asphalt of Lakeland	Polk	414.4	3,098.8	67.0	-39.8	77.93	121	35.0	1298.6	NO
1050216	Ridge Generating Station	Polk	416.7	3,100.5	69.3	-38.0	79.03	119	394.2	1320.7	NO
7775176	C.W. Roberts Contracting Relocatable AP	Sumter	400.3	3,197.3	52.9	58.8	79.06	42	13.8	1321.1	NO
1050298	Polk County North Central Landfill	Polk	417.3	3,099.7	69.9	-38.8	79.97	119	75.8	1339.4	NO
0830023	Steven Counts, Inc. Asphalt Plant No. 3	Marion	375.0	3,214.1	27.6	75.6	80.46	20	13.8	1349.2	NO
1050046	Mosaic Fertilizer - Bartow Facility	Polk	409.8	3,087.2	62.2	-51.3	80.84	130	295.2	1352.7	NO
0810001	Transmontaigne Terminals, LLC	Manatee	348.0	3,057.7	0.6	-80.8	80.77	180	42.9	1355.4	NO
1050221	Auburndale Energy Complex	Polk	420.9	3,103.2	73.5	-35.3	81.53	116	812.6	1370.6	NO
1050023	Cutral Citrus Juices USA, Inc.	Polk	421.4	3,103.7	74.0	-34.8	81.81	115	451.1	1376.3	NO
0810063	Ajax Paving Industries - Palmetto Facility	Manatee	347.8	3,056.6	0.4	-81.9	81.91	180	14.6	1378.2	NO
0810024	Port Manatee Oil Storage Facility	Manatee	348.3	3,056.6	0.9	-81.9	81.95	179	31.8	1379.0	NO
1050096	Florida Distillers - Auburndale	Polk	421.4	3,103.3	74.0	-35.2	81.87	115	26.8	1379.4	NO
7770259	DAB Constructors, Leesburg Plant	Lake	411.9	3,189.1	64.5	50.6	81.97	52	28.8	1379.4	NO
0810215	Gulfstream NG System Compressor Sta. 420	Manatee	350.4	3,056.4	3.0	-82.1	82.15	178	73.0	1382.9	NO
1050366	Coca-Cola NA - Auburndale Plant	Polk	422.8	3,103.3	75.4	-35.2	83.26	115	44.1	1405.3	NO
0690002	Cutral Citrus Juices USA - Leesburg	Lake	415.4	3,187.6	68.0	49.1	83.92	54	156.0	1418.4	NO
7775280	APAC SE, Inc. - Winter Haven Plant	Polk	423.4	3,101.9	76.1	-36.6	84.41	116	15.4	1428.2	NO
0694859	Smart Fuels Florida	Lake	411.8	3,194.5	64.4	56.0	85.30	49	59.2	1446.0	NO
0690014	Silver Springs Citrus Plant	Lake	423.9	3,176.3	76.5	37.8	85.33	64	65.5	1446.5	NO
1050053	Mosaic Fertilizer - Green Bay Facility	Polk	409.4	3,079.9	62.0	-58.6	85.34	133	158.3	1448.8	NO
0810010	FP&L - Manatee Power Plant	Manatee	367.2	3,054.2	19.9	-84.3	85.65	167	23,146.4	1472.8	YES
1050090	Florida Distillers - Lake Alfred	Polk	429.1	3,108.2	81.7	-30.3	87.10	110	29.3	1481.9	NO
1050217	Mulberry Cogen. Facility	Polk	413.6	3,080.6	66.2	-57.9	87.96	131	353.0	1499.3	NO
1050055	Mosaic Fertilizer - South Pierce Facility	Polk	407.2	3,072.7	59.9	-65.8	88.95	138	131.4	1518.9	NO
1050233	Polk Power Station	Polk	402.4	3,067.4	55.1	-71.1	89.96	142	1,362.8	1539.2	NO
7775602	Levy County Burn Site	Levy	286.1	3,204.4	-61.3	65.9	89.99	317	12.5	1539.8	NO
0951219	Oriando Paving Plant 10 - Winter Garden	Orange	437.7	3,140.0	90.4	1.5	90.37	89	27.8	1547.4	NO
1050231	Orange Cogeneration Facility	Polk	418.7	3,083.0	71.3	-55.5	90.37	128	575.0	1547.4	NO
1050397	Oldcastle Lawn & Garden DBA Greenleaf Inc.	Polk	437.0	3,114.3	89.7	-24.2	92.87	105	37.1	1597.3	NO
1050234	Hines Energy Complex	Polk	414.3	3,074.0	66.9	-64.5	92.97	134	1,364.8	1599.4	NO
0690008	Wolverine Advanced Materials	Lake	424.1	3,194.2	76.7	55.7	94.81	54	18.8	1636.2	NO
0970077	Compressor Station No. 31	Osceola	442.2	3,128.5	94.8	-10.0	95.35	96	15.0	1648.9	NO
0690111	Walt Disney World Resort Complex	Orange	442.6	3,143.4	95.3	4.9	95.38	87	608.9	1647.6	NO
0810007	Tropicana, Bradenton	Manatee	347.9	3,042.4	0.5	-96.1	96.06	180	418.9	1661.2	NO
0830066	Emergency One, Inc. - Body Plant	Marion	384.9	3,227.7	37.5	89.2	98.74	23	15.0	1674.8	NO
1050014	Standard Sand & Silica - Davenport	Polk	442.1	3,118.2	94.7	-20.3	98.87	102	37.2	1677.4	NO
1050424	Process Water Solutions, LLC	Polk	416.0	3,069.2	68.6	-69.3	97.55	135	12.8	1690.9	NO
1050380	Cellynne Holdings - Haines City Operation	Polk	439.9	3,107.5	92.5	-31.0	97.55	109	55.6	1691.0	NO
0830124	Baselline Landfill	Marion	397.7	3,222.1	50.3	83.6	97.57	31	78.5	1691.4	NO
1050223	Tiger Bay Cogeneration Facility	Polk	416.2	3,069.3	68.9	-69.2	97.59	135	455.7	1691.9	NO
0830052	Cloestmaid	Marion	386.2	3,228.4	38.8	89.9	97.94	23	22.2	1698.8	NO
0490340	Midulla Generating Station	Hardee	405.1	3,057.8	57.7	-80.8	99.26	144	979.0	1725.2	NO
0950048	Ranger Constr. - Winter Garden	Orange	444.8	3,158.2	97.4	19.7	99.39	79	12.0	1727.8	NO
0830007	Mark IV Dayco	Marion	393.5	3,226.6	46.1	88.1	99.39	28	17.7	1727.9	NO
0490015	Hardee Power Station	Hardee	404.9	3,057.3	57.5	-81.2	99.49	145	5,242.3	1729.9	YES
0810031	Pierce Manufacturing - Florida Division	Manatee	348.7	3,038.8	1.4	-89.7	99.68	179	15.1	1733.6	NO
0970014	FP&L - Intercession City Plant	Osceola	446.3	3,126.0	98.9	-12.5	99.71	97	15,036.1	1734.1	YES
0970068	Florida Hospital Celebration Health	Osceola	447.1	3,133.9	99.7	-4.6	99.82	93	18.2	1738.4	NO
0810055	Manatee County Lena Rd. Landfill	Manatee	357.0	3,039.1	9.6	-89.4	99.89	174	128.7	1737.7	NO
0490343	Oldcastle Lawn & Garden, DBA Seaboard Supply	Hardee	406.9	3,058.0	59.5	-80.5	100.08	144	37.1	1741.8	NO

Note: NA = Not applicable, ND = No data, SID = Significant Impact distance for the project, SIA = Significant Impact Area

^a Shady Hills East and North Coordinates (km) are: 347.4 3,138.5 km

^b The significant impact distance for the project is estimated to be: 13 km

^c Based on the North Carolina Screening Threshold method, a background facility is included in the modeling analysis if the facility is beyond the modeling area and its emission rate is greater than the product of (Distance-SID) x 20.

^d "Modeling Area" is the area in which the project is predicted to have a significant impact (10 km). EPA recommends that all sources within this area be modeled.

"Screening Area" is the significant impact distance for the Shady Hills Facility of 10 km, plus 50 km beyond the modeling area. EPA recommends that sources be modeled that are expected to have a significant impact in the modeling area. "Beyond Screening Area out to 100 km" is the distance between the facilities and out to 100 km in which large sources are included in the modeling.

^e Minimum Q for source group. Facilities within a source group are located within 1 km and 1 degree.

TABLE 6-4
SUMMARY OF NO_x SOURCES INCLUDED IN THE AAQS MODELING ANALYSIS

Facility ID	Facility Name Emission Unit Description	EU ID	Modeling ID Name	UTM Location		Height		Stack Parameters			Stack Parameter Source	NO _x Emission Rate		Emission Rate Source	Modeled Source?			
				X (m)	Y (m)	ft	m	Diameter	Temperature	Velocity		1-Hour (lb/hr)	(t/yr)					
	Diesel Engine Peaking Unit No. 3	003	--	409,042	3,108,810	20.0	6.0	2.8	0.79	715	852.6	77.0	23.47	FDEP Data 6/14/10	86.80	10.94	FDEP Data 6/14/10	Yes
	Diesel Engine Peaking Unit Nos. 2 & 3		MCINTU23	409,042	3,108,810	20.0	6.0	2.8	0.79	715	852.6	77.0	23.47	FDEP Data 6/14/10	173.60	21.87	FDEP Data 6/14/10	Yes
	Gas Turbine Peaking Unit No. 1	004	MCINTGTP	409,042	3,108,810	35.0	10.8	13.5	4.11	900	755.4	79.5	24.23	FDEP Data 6/14/10	223.38	28.14	FDEP Data 6/14/10	Yes
	McIntosh Unit No. 2	005	MCINTU2	409,042	3,108,810	157.0	47.4	10.5	3.20	277	406.3	73.2	22.31	FDEP Data 6/14/10	334.50	42.15	FDEP Data 6/14/10	Yes
	McIntosh Unit No. 3	006	MCINTU3	409,042	3,108,810	250.0	75.5	18.0	5.49	167	348.2	82.6	25.18	FDEP Data 6/14/10	2548.00	321.05	FDEP Data 6/14/10	Yes
	CT Unit No. 5	028	MCINTU5	409,042	3,108,810	85.0	25.7	28.0	8.53	1095	863.7	82.7	25.21	FDEP Data 6/14/10	262.00	33.01	FDEP Data 6/14/10	Yes
1050003	Lakeland Electric - Charles Larsen Memorial Power Plant																	
	FFSG No. 6	003	--	409,017	3,102,817	185.0	49.8	10.0	3.05	340	444.3	21.0	6.40		154.00	19.40		Yes
	SG No. 7	004	--	409,017	3,102,817	185.0	49.8	10.0	3.05	340	444.3	22.0	6.71		331.00	41.71		Yes
	Units Nos. 6 & 7		CLMU67	409,017	3,102,817	185.0	49.8	10.0	3.05	340	444.3	22.0	6.71	FDEP Data 6/14/10	485.00	61.11	FDEP Data 6/14/10	Yes
	Peaking Gas Turbine No. 3	005	--	409,017	3,102,817	31.0	9.4	11.8	3.60	800	699.8	101.0	30.78		145.80	18.38		Yes
	Peaking Gas Turbine No. 2	006	--	409,017	3,102,817	31.0	9.4	11.8	3.60	800	699.8	101.0	30.78		145.80	18.38		Yes
	Peaking Gas Turbine Nos. 3 & 2		CLMPTU23	409,017	3,102,817	31.0	9.4	11.8	3.60	800	699.8	101.0	30.78	FDEP Data 6/14/10	291.60	36.77	FDEP Data 6/14/10	Yes
	SC CTs	008	CLMCT	409,017	3,102,817	155.0	46.8	16.0	4.88	481	622.5	88.7	26.12	FDEP Data 6/14/10	178.00	22.18	FDEP Data 6/14/10	Yes
0810010	FPRL - Manaboo Power Plant																	
	FFSG Unit No. 1	001	FPLMANU1	387,237	3,054,160	499.0	150.8	27.30	8.32	344	446.5	78.0	23.77	FDEP Data 6/14/10	2595.00	326.97	FDEP Data 6/14/10	Yes
	FFSG Unit No. 2	002	FPLMANU2	387,237	3,054,160	499.0	150.8	28.20	7.99	325	435.9	82.5	25.15	FDEP Data 6/14/10	2595.00	326.97	FDEP Data 6/14/10	Yes
	CT Unit 3A	005	FPLMAN3A	387,237	3,054,160	120.0	36.2	22.00	6.71	1116	875.4	104.8	31.94	FDEP Data 6/14/10	85.30	12.01	FDEP Data 6/14/10	Yes
	CT Unit 3B	006	--	387,237	3,054,160	120.0	36.2	19.00	5.78	202	367.6	59.0	17.98	FDEP Data 6/14/10	85.30	12.01	FDEP Data 6/14/10	Yes
	CT Unit 3C	007	--	387,237	3,054,160	120.0	36.2	19.00	5.78	202	367.6	59.0	17.98	FDEP Data 6/14/10	85.30	12.01	FDEP Data 6/14/10	Yes
	CT Unit 3D	008	--	387,237	3,054,160	120.0	36.2	19.00	5.78	202	367.6	59.0	17.98	FDEP Data 6/14/10	85.30	12.01	FDEP Data 6/14/10	Yes
	CT Unit Nos. 3B-3D		FPLMANU3	387,237	3,054,160	120.0	36.2	19.00	5.78	202	367.6	59.0	17.98		265.90	36.02		Yes
0400015	Hardee Power Station																	
	CT Unit 1A	001	--	404,898	3,057,318	90.0	27.2	14.8	4.42	236	386.5	77.5	23.62	FDEP Data 6/14/10	383.80	48.36	FDEP Data 6/14/10	Yes
	CT Unit 1B	002	--	404,898	3,057,318	90.0	27.2	14.8	4.42	245	391.5	75.8	23.10	FDEP Data 6/14/10	383.80	48.36	FDEP Data 6/14/10	Yes
	CT Unit 1A & 1B		HARD1AB	404,898	3,057,318	90.0	27.2	14.8	4.42	245	391.5	75.8	23.10	FDEP Data 6/14/10	767.60	96.72	FDEP Data 6/14/10	Yes
	CT Unit 2A	003	HARD2A	404,898	3,057,318	78.0	22.8	17.9	5.48	998	803.2	94.3	28.74	FDEP Data 6/14/10	383.80	48.36	FDEP Data 6/14/10	Yes
	CT Unit 2B	005	HARD2B	404,898	3,057,318	85.0	25.7	14.8	4.51	998	810.4	142.0	43.28	FDEP Data 6/14/10	32.00	4.03	FDEP Data 6/14/10	Yes
0970014	FPRL - Intra-season City Plant																	
	CT Peaking Unit 1	001	--	448,300	3,126,000	45.0	13.8	14.8	4.48	780	877.8	174.9	53.31	FDEP Data 6/14/10	494.00	62.24	FDEP Data 6/14/10	Yes
	CT Peaking Unit 2	002	--	448,300	3,126,000	45.0	13.8	14.8	4.48	780	877.8	174.9	53.31	FDEP Data 6/14/10	494.00	62.24	FDEP Data 6/14/10	Yes
	CT Peaking Unit 3	003	--	448,300	3,126,000	45.0	13.8	14.8	4.48	780	877.8	174.9	53.31	FDEP Data 6/14/10	494.00	62.24	FDEP Data 6/14/10	Yes
	CT Peaking Unit 4	004	--	448,300	3,126,000	45.0	13.8	14.8	4.48	780	877.8	174.9	53.31	FDEP Data 6/14/10	494.00	62.24	FDEP Data 6/14/10	Yes
	CT Peaking Unit 5	005	--	448,300	3,126,000	45.0	13.8	14.8	4.48	780	877.8	174.9	53.31	FDEP Data 6/14/10	494.00	62.24	FDEP Data 6/14/10	Yes
	CT Peaking Unit 6	006	--	448,300	3,126,000	45.0	13.8	14.8	4.48	780	877.8	174.9	53.31	FDEP Data 6/14/10	494.00	62.24	FDEP Data 6/14/10	Yes
	CT Peaking Unit Nos. 1-6		FPLIC116	448,300	3,126,000	45.0	13.8	14.8	4.48	780	877.8	174.9	53.31	FDEP Data 6/14/10	2964.00	373.48	FDEP Data 6/14/10	Yes
	CT No. 7	007	--	448,300	3,126,000	50.0	15.1	13.8	4.19	1043	834.8	174.1	53.07	FDEP Data 6/14/10	182.00	22.93	FDEP Data 6/14/10	Yes
	CT No. 8	008	--	448,300	3,126,000	50.0	15.1	13.8	4.19	1043	834.8	174.1	53.07	FDEP Data 6/14/10	182.00	22.93	FDEP Data 6/14/10	Yes
	CT No. 10	010	--	448,300	3,126,000	50.0	15.1	13.8	4.19	1043	834.8	174.1	53.07	FDEP Data 6/14/10	182.00	22.93	FDEP Data 6/14/10	Yes
	CT Nos. 7, 8 & 10		FPLIC110	448,300	3,126,000	50.0	15.1	13.8	4.19	1043	834.8	174.1	53.07	FDEP Data 6/14/10	546.00	68.80	FDEP Data 6/14/10	Yes
	CT No. 11	011	FPLIC111	448,300	3,126,000	75.0	22.5	18.0	5.79	1034	829.8	139.4	42.49	FDEP Data 6/14/10	334.00	42.06	FDEP Data 6/14/10	Yes
	CT No. P-12	018	--	448,300	3,126,000	58.0	16.9	16.1	4.91	993	807.0	117.8	35.84	FDEP Data 6/14/10	169.00	21.29	FDEP Data 6/14/10	Yes
	CT No. P-13	019	--	448,300	3,126,000	58.0	16.9	16.1	4.91	993	807.0	117.8	35.84	FDEP Data 6/14/10	169.00	21.29	FDEP Data 6/14/10	Yes
	CT No. P-14	020	--	448,300	3,126,000	58.0	16.9	16.1	4.91	993	807.0	117.8	35.84	FDEP Data 6/14/10	169.00	21.29	FDEP Data 6/14/10	Yes
	CT Nos. P-12, 13 & 14		FPLIC124	448,300	3,126,000	58.0	16.9	16.1	4.91	993	807.0	117.8	35.84	FDEP Data 6/14/10	507.00	63.88	FDEP Data 6/14/10	Yes

^a Engineering estimates are used when data is not available from other sources.

^b Emission data was not available, no permit was found, therefore source was not modeled.

**TABLE 6-11
MAXIMUM PREDICTED NO₂ IMPACTS COMPARED TO THE AAQS**

Averaging Time and Rank	Maximum Concentration (µg/m ³) ^a			Receptor Location		AAQS (µg/m ³)
	Total	Modeled Sources	Background	UTM- East (m)	UTM- North (m)	
<u>NO₂ (Tier 1)</u>						
1-Hour, 98th Percentile ^b	--	82.8	--	346,850	3,139,600	
	--	79.7	--	346,850	3,139,600	
	--	85.8	--	346,850	3,139,600	
	--	82.5	--	346,850	3,139,600	
	--	85.7	--	346,850	3,139,600	
5-Year Average	164.1	83.3	80.8	--	--	188

Note: YYMMDDHH = Year, Month, Day, Hour Ending

- ^a Concentrations are based on concentrations predicted using 5 years of meteorological data from 2001 to 2005 of surface and upper air data from the National Weather Service stations at Tampa International Airport and Ruskin, respectively.
- ^b The AAQS standard (188 µg/m³). The AAQS 1-hour NO₂ standard is met when the 3-year average of the 98th percentile of the daily 1-hour maximum values is less than 188 µg/m³. Therefore, the 8th highest 1-hour maximum modeled concentration (from 2001 - 2005) was added to a monitoring background based on the highest maximum daily 1-hour NO₂ monitoring values from 2006-2008.
- ^c Based on Tier 1 results and default NO₂ to NO_x ratio of 0.75.

ATTACHMENT C

Emergency Generator Tables 2-4 and 2B

REVISED TABLE 2-4
PERFORMANCE AND EMISSION DATA FOR ONE EMERGENCY
GENERATOR FOR SHADY HILLS GENERATING STATION PROJECT

Parameter	Emergency Generator
<u>Performance</u>	
Number of Units	2
Rating (kW)	1,000
Rating (hp)	1,341
Fuel	Diesel
Fuel Heat content (Btu/lb) (HHV)	19,300
Fuel density (lb/gal)	7.0
Heat input (MMBtu/hr) (HHV)	9.73
Fuel usage (gallons/hr) ^b	72.0
Maximum operation (hours)	500
Maximum fuel usage (gallons/yr)	36,000
<u>Emissions</u>	
SO ₂ - Basis (%S)	0.0015%
Conversion of S to SO ₂	100
Molecular weight SO ₂ / S (64/32)	2
Emission rate (lb/hr)	0.02
Emission rate (tpy)	0.004
NMHC + NO _x - Basis (g/hp-hr) ^a	4.78
Emission rate (lb/hr)	14.1
Emission rate (tpy)	3.53
NO _x - Basis (g/hp-hr) ^b	4.78
Emission rate (lb/hr)	14.1
Emission rate (tpy)	3.53
CO - Basis (g/hp-hr) ^a	2.6
Emission rate (lb/hr)	7.7
Emission rate (tpy)	1.93
VOC - Basis (g/hp-hr) ^b	1.0
Emission rate (lb/hr)	3.0
Emission rate (tpy)	0.74
PM10/PM2.5 - Basis (g/hp-hr) ^a	0.1
Emission rate (lb/hr)	0.44
Emission rate (tpy)	0.11

^a Source: 40 CFR 89.112

^b Source: Caterpillar diesel generator set specifications, Golder, 2010.

**TABLE 2B
SHADY HILLS POWER COMPANY
EMERGENCY DIESEL GENERATOR RUN HOURS**

Date	Description	Start Time	Stop Time	Lapsed Time
30-Jan-03	Loaded to Simulate Black Out Conditions	9:00	14:40	5:40
01-Jun-03	Loss of 5KV Bus	10:17	12:10	1:53
17-Nov-03	Breaker 1400 Malfunction	22:34	2:56	4:21
23-Mar-07	BOP Switch Yard PMs	6:29	17:05	10:36
20-Apr-07	UPS for the BIU 4160 V Building Failed	16:35	18:30	1:55
19-Dec-07	Progress Energy Relay Trip Checks	11:00	16:29	5:29
03-Nov-08	Progress Energy Performing Hudson Sub-station Maintenance	7:20	21:45	14:25
26-Nov-10	Blackout due to GSU #1 Problem	6:25	17:51	11:26
			Total	56:15

Summary	
Plant Maint/Events	56:15
Preventive Maint	101:17
Total	157:32

ATTACHMENT D

Class II Visibility

Figure 3-1
 Visual Effects Screening Analysis for
 Source: Shady Hills Units 4&5 on Gas, Level 1 Analysis
 Class I Area: Tampa Intl AP

*** Level-1 Screening ***
 Input Emissions for

Particulates	36.07	LB /HR
NOx (as NO2)	147.55	LB /HR
Primary NO2	.00	LB /HR
Soot	.00	LB /HR
Primary SO4	2.80	LB /HR

**** Default Particle Characteristics Assumed

Transport Scenario Specifications:

Background Ozone:	.04 ppm
Background Visual Range:	40.00 km
Source-Observer Distance:	42.00 km
Min. Source-Class I Distance:	42.00 km
Max. Source-Class I Distance:	50.00 km
Plume-Source-Observer Angle:	11.25 degrees
Stability:	6
Wind Speed:	1.00 m/s

R E S U L T S

Asterisks (*) indicate plume impacts that exceed screening criteria

Maximum Visual Impacts INSIDE Class I Area
 Screening Criteria ARE NOT Exceeded

Backgrnd	Theta	Azi	Distance	Alpha	Delta E		Contrast	
					Crit	Plume	Crit	Plume
SKY	10.	84.	42.0	84.	2.00	1.559	.05	.005
SKY	140.	84.	42.0	84.	2.00	.609	.05	-.012
TERRAIN	10.	84.	42.0	84.	2.00	.727	.05	.010
TERRAIN	140.	84.	42.0	84.	2.00	.160	.05	.007

Maximum Visual Impacts OUTSIDE Class I Area
 Screening Criteria ARE NOT Exceeded

Backgrnd	Theta	Azi	Distance	Alpha	Delta E		Contrast	
					Crit	Plume	Crit	Plume
SKY	10.	55.	37.6	114.	2.00	1.593	.05	.005
SKY	140.	55.	37.6	114.	2.00	.609	.05	-.013
TERRAIN	10.	0.	1.0	168.	2.00	1.140	.05	.011
TERRAIN	140.	0.	1.0	168.	2.00	.341	.05	.011

Figure 3-2
 Visual Effects Screening Analysis for
 Source: Shady Hills Units 4&5 On Oil, Level 1 Analysis
 Class I Area: Tampa Intl AP

*** Level-1 Screening ***
 Input Emissions for

Particulates	68.07	LB /HR
NOx (as NO2)	742.75	LB /HR
Primary NO2	.00	LB /HR
Soot	.00	LB /HR
Primary SO4	1.08	LB /HR

**** Default Particle Characteristics Assumed

Transport Scenario Specifications:

Background Ozone:	.04 ppm
Background Visual Range:	40.00 km
Source-Observer Distance:	42.00 km
Min. Source-Class I Distance:	42.00 km
Max. Source-Class I Distance:	50.00 km
Plume-Source-Observer Angle:	11.25 degrees
Stability:	6
Wind Speed:	1.00 m/s

R E S U L T S

Asterisks (*) indicate plume impacts that exceed screening criteria

Maximum Visual Impacts INSIDE Class I Area
 Screening Criteria ARE Exceeded

Backgrnd	Theta	Azi	Distance	Alpha	Delta E		Contrast	
					Crit	Plume	Crit	Plume
SKY	10.	84.	42.0	84.	2.00	6.738*	.05	-.011
SKY	140.	84.	42.0	84.	2.00	2.455*	.05	-.039
TERRAIN	10.	84.	42.0	84.	2.00	1.571	.05	.020
TERRAIN	140.	84.	42.0	84.	2.00	.532	.05	.015

Maximum Visual Impacts OUTSIDE Class I Area
 Screening Criteria ARE Exceeded

Backgrnd	Theta	Azi	Distance	Alpha	Delta E		Contrast	
					Crit	Plume	Crit	Plume
SKY	10.	70.	39.9	99.	2.00	6.798*	.05	-.011
SKY	140.	70.	39.9	99.	2.00	2.474*	.05	-.040
TERRAIN	10.	55.	37.6	114.	2.00	1.848	.05	.023
TERRAIN	140.	55.	37.6	114.	2.00	.636	.05	.018

Figure 3-3
 Visual Effects Screening Analysis for
 Source: Shady Hills Units 4&5 On Oil - Level 2 Analysis
 Class I Area: Tampa Intl AP

*** User-selected Screening Scenario Results ***

Input Emissions for

Particulates	68.07	LB /HR
NOx (as NO2)	742.75	LB /HR
Primary NO2	.00	LB /HR
Soot	.00	LB /HR
Primary SO4	1.08	LB /HR

**** Default Particle Characteristics Assumed

Transport Scenario Specifications:

Background Ozone:	.04 ppm
Background Visual Range:	40.00 km
Source-Observer Distance:	42.00 km
Min. Source-Class I Distance:	42.00 km
Max. Source-Class I Distance:	50.00 km
Plume-Source-Observer Angle:	11.25 degrees
Stability:	4
Wind Speed:	4.00 m/s

R E S U L T S

Asterisks (*) indicate plume impacts that exceed screening criteria

Maximum Visual Impacts INSIDE Class I Area
 Screening Criteria ARE NOT Exceeded

Backgrnd	Theta	Azi	Distance	Alpha	Delta E		Contrast	
					Crit	Plume	Crit	Plume
SKY	10.	120.	48.4	49.	2.69	.433	.05	-.001
SKY	140.	120.	48.4	49.	2.00	.156	.05	-.003
TERRAIN	10.	84.	42.0	84.	3.02	.112	.05	.001
TERRAIN	140.	84.	42.0	84.	2.00	.038	.05	.001

Maximum Visual Impacts OUTSIDE Class I Area
 Screening Criteria ARE NOT Exceeded

Backgrnd	Theta	Azi	Distance	Alpha	Delta E		Contrast	
					Crit	Plume	Crit	Plume
SKY	10.	30.	31.8	139.	2.00	.491	.05	-.001
SKY	140.	30.	31.8	139.	2.00	.175	.05	-.003
TERRAIN	10.	0.	1.0	168.	2.00	.294	.05	.003
TERRAIN	140.	0.	1.0	168.	2.00	.087	.05	.003

ATTACHMENT E
GE Vendor Fact Sheet

OpFlex™ Start-up NO_x and Start-up Fuel Heating Operational Flexibility Enhancements for Gas Turbines



Industry Demands Shift in Operations

Changes in the power generation market are transforming power plant operations. With higher fuel costs and increased market capacity, plants are seeking ways to maximize revenue potential during peak conditions and reduce operating costs during off-peak periods.

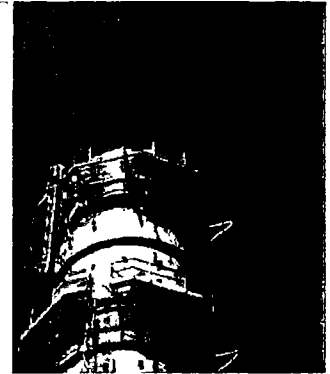
New Platform Expands Operational Range and Flexibility

To meet the demands of a changing power market, GE Energy has developed a series of enhancements designed to expand the operating profile of its 7FA+e (PG7241) gas turbine while maintaining or lowering existing emissions levels. Through Advanced Fuel Scheduling, a proprietary method of controlling fuel distribution, GE's OpFlex enhancements broaden the gas turbine's operating range, increasing flexibility and potential profitability. OpFlex enhancements developed specifically for gas turbine start-up can enable reduced fuel consumption and costs, lower NO_x emissions and reduced visible emissions.

OpFlex enhancements can be implemented in three to five days, including a one-day outage at the beginning of this period. If coordinated with a planned outage, the service can be implemented with no impact on the planned outage schedule.



7FA+e gas turbine without OpFlex technology (approx. 35 MW)



Same turbine, substantially the same output level with OpFlex technology

OpFlex Enhancement

OpFlex Start-up NO_x

OpFlex Start-up Fuel Heating

Operational Improvement

<25 ppm NO_x at approx. 20% load and above

Rated fuel temperature not required until 40% load

Benefits

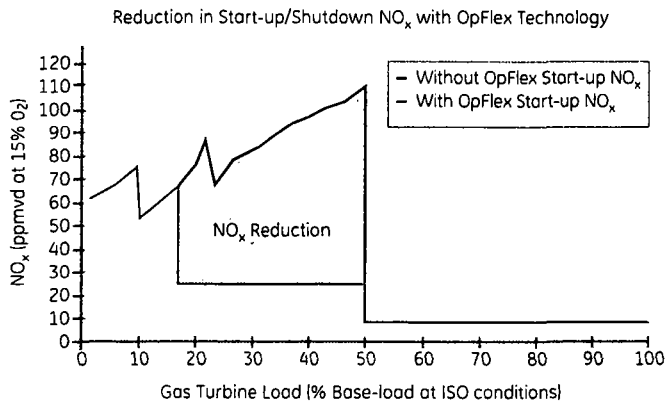
Start-up NO_x

- Reduce NO_x emissions during start-up and shutdown
- Reduce visible emissions during start-up, which may enable improved relations with site neighbors
- Free up NO_x credits to be sold, or reduce NO_x credits that must be purchased

Start-up Fuel Heating

- Reduce start-up fuel consumption
- Reduce start-up time
- Reduce NO_x produced during start-up (by shortening the duration of operation in high-NO_x-producing combustion modes)





OpFlex Start-up NO_x

Building on the technology of Advanced Fuel Scheduling, GE has reduced NO_x emissions during start-up and shutdown of 7FA+e (PG7241) gas turbines. The new start-up combustion mode will allow for less than 25 ppm NO_x at approx. 20% load and above.

During the start-up of gas turbines with DLN 2.6 combustors, high levels of NO_x and CO are produced while the combustor and gas turbine are reaching steady, continuous operations. Because NO_x emissions become visible at concentrations above approximately 25 ppm, a "yellow plume" can usually be seen at the stack during start-up. By reducing the NO_x levels below 25 ppm at 20% load and up, these visible emissions can be removed from this portion of the start-up process.

Applicability

- 7FA+e (PG7241) gas turbines with DLN2.6 combustors and Mark™ V or higher controls
- Units with Mark V controls may need Mark Ve upgrade (site-specific review required)

OpFlex Start-up Fuel Heating

During start-up of gas turbines with heated fuel, a hold in the start-up sequence is often required while the fuel reaches the rated temperature. This hold may limit overall combined-cycle plant start-up during hot starts, where the steam plant is already warm (e.g., no temperature-matching constraints). OpFlex Start-up Fuel Heating leverages Advanced Fuel Scheduling to relax fuel temperature requirements such that rated fuel temperature is not required until approximately 40% load (versus ~25% currently). This enables the reduction or elimination of start-up holds which exist solely to bring fuel up to the rated temperature, enabling customers to start faster and reduce fuel consumption. Start-up emissions are also lowered since the duration of operation in high-NO_x-producing combustion modes is reduced.

Applicability

- 7FA+e (PG7241) gas turbines with DLN2.6 combustors and Mark V or higher controls, using heated fuel



For more information, contact your GE Energy sales representative at (800) 821-2222/+1.816.356.8400 (int'l), or visit us on the web at or ge-energy.com/airquality

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