



APPLICATION IDENTIFICATION INFORMATION

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APPLICATION: PPS 1 PETCOKE MODIFICATION (#1662-1)
FACILITY: TAMPA ELECTRIC COMPANY (#1050233)

- (+) 1 - 260 MW Combined cycle CT
- (+) 4 - Sulfuric Acid Plant
- (+) 5 - Solid Fuel Handling System
- (+) 6 - Solid Fuel Gasification S

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Final PE Signature File Authentication Code:
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Permit Number: 1050233 - 021 - AC [Update](#)

Application Number: 1662

Applicant's Version: 1

Application Name: PPS 1 PETCOKE MODIFICATION

Application Type: LONG FORM

Purpose of Application: AIR CONSTRUCTION PERMIT.

Time Clock Waiver: NO

Date Submitted: 11/16/2007

Applicant's Data Downloaded YES from ARMS?

Applicant Comment: Air construction permit application to increase the Polk Power Station IGCC Solid Fuel Gasification System (EU 006) gasifier feedstock blend up to 85% petroleum coke and 15% coal by weight, and the gasifier feedstock fuel blend sulfur content up to 4.4% weight percent (dry basis).

[Click Here to View Certification Statements](#)

APPLICATION: PPS 1 PETCOKE MODIFICATION (#1662-1)
 FACILITY: TAMPA ELECTRIC COMPANY (#1050233)

Facility Attachments				
Supplemental Item	Electronic File Name	Attachment Description	Electronic Document?	Date Uploaded
OTHER FACILITY INFORMATION	Chart 1.pdf	Chart 1 - Graph of Net Emissions Analysis	Yes	11/15/2007
->>	Table 1.pdf	Table 1 - Analysis of Net Emissions	Yes	11/15/2007
->>	Table 2.pdf	Table 2 - Analysis of Sulfuric Acid Mist Net Emissions	Yes	11/15/2007
->>	Table 3.pdf	Table 3 - AOR Summaries	Yes	11/15/2007
RULE APPLICABILITY ANALYSIS	NSR Applicability.pdf	Attachment I - NSR Applicability	Yes	11/15/2007
Emissions Unit Attachments				
Emissions Unit: 001 - 260 MW Combined cycle CT (Phase II Acid Rain Unit)				
Supplemental Item	Electronic File Name	Attachment Description	Electronic Document?	Date Uploaded
OTHER EMISSIONS UNIT INFORMATION	Table 1.pdf	Table 1 - Analysis of Net Emissions	Yes	11/15/2007
Emissions Unit: 004 - Sulfuric Acid Plant				
Supplemental Item	Electronic File Name	Attachment Description	Electronic Document?	Date Uploaded
DETAILED DESCRIPTION OF CONTROL EQUIPMENT	Plant Modifications.pdf	Attachment II - Potential Plant Modifications	Yes	11/15/2007
OTHER EMISSIONS UNIT INFORMATION	Table 3.pdf	Table 3 - AOR Summaries	Yes	11/15/2007
Report Completed as of: 3/10/2008 11:11:18 AM				

Applicant version 2

Engineer version

EU Segments

20100201


Segment Comment:	Syngas-Primary fuel. Syngas produced from coal or blends of up to 85% petcoke and 15% coal.	Syngas-Primary fuel. Syngas produced from coal or blends of up to 60% petcoke and 40% coal.
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EU Pollutants

CO

Allowable Emissions 1


Test Method 10

 *Test Method exists only in Engineer version*

Description:	CO EMISSIONS FROM STATIONARY SOURCES (INSTRUMENTAL ANALYZER PROCEDURE)
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Allowable Emissions 2

Test Method 10

 *Test Method exists only in Engineer version*

Description:	CO EMISSIONS FROM STATIONARY SOURCES (INSTRUMENTAL ANALYZER PROCEDURE)
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H015


H021

H114

NOX

Allowable Emissions 1


Test Method 20

 *Test Method exists only in Engineer version*

Description:	NOx, SO2, and Diluent Emissions from Stationary Gas Turbines
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Allowable Emissions 2


Test Method 20

 *Test Method exists only in Engineer version*

Description:	NOx, SO2, and Diluent Emissions from Stationary Gas Turbines
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Allowable Emissions 4

Test Method 20

 *Test Method exists only in Engineer version*

Applicant version 2

Engineer version

NO_x, SO₂, and Diluent Emissions
from Stationary Gas Turbines

Description:

PB

PM

Allowable Emissions 1

Test Method 5B


 *Test Method exists only in Engineer version*

Description:

Nonsulfuric Acid Particulate Matter
from Stationary Sources

Allowable Emissions 2

Test Method 5B

 *Test Method exists only in Engineer version*


Description:

Nonsulfuric Acid Particulate Matter
from Stationary Sources

PM10

Allowable Emissions 1

Test Method 5B


 *Test Method exists only in Engineer version*

Description:

Nonsulfuric Acid Particulate Matter
from Stationary Sources

Allowable Emissions 2

Test Method 5B

 *Test Method exists only in Engineer version*

Description:

Nonsulfuric Acid Particulate Matter
from Stationary Sources

SAM

Baseline Actual Emissions (tons/year):	23.9	101.1
Baseline 24-Month Period From Date:	01-JAN-2006	01-MAY-2005
Baseline 24-Month Period To Date:	01-JAN-2008	01-MAY-2007
Projected Actual Emissions (tons/year):	27.3	107.7
Calculation of Emissions:	See attached Response to RAI and calculation spreadsheets. There are no expected emissions increase due to this construction activity (increase of petcoke and sulfur content in the fuel blend for gasification).	See attached Spreadsheets Tables 1, 2 and 3 as well as Chart 1 for calculation details.


SO2

Include in the Facility Emissions Cap:	No	
Emission Factor Reference:	BACT DETERMINATION	BACT determination
	See attached Response to RAI and calculation spreadsheets. There are no	

	Applicant version 2	Engineer version
Calculation of Emissions:	expected emissions increase due to this construction activity (increase of petcoke and sulfur content in the fuel blend for gasification).	
Pollutant Comment:	The emission rate of SO2 (lb/hr) is expected to be the same post-construction as pre-construction because the process will continue to target the same SO2 emission rate.	Potential emissions based on syngas-firing during the 2-year demonstration period.

Allowable Emissions 3

Test Method 20


 *Test Method exists only in Engineer version*

Description:	NOx, SO2, and Diluent Emissions from Stationary Gas Turbines
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VOC

Allowable Emissions 1


Test Method 18

 *Test Method exists only in Engineer version*

Description:	Gaseous Organic Compound Emissions by Gas Chromatography
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Allowable Emissions 2

Test Method 18

 *Test Method exists only in Engineer version*

Description:	Gaseous Organic Compound Emissions by Gas Chromatography
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EU Operating Capacity and Schedule


Max. Production Rate:	108624	77640
Max. Production Rate Units:	TONS/YEAR	tons/year
Operating Capacity and Schedule Comment:	108624 TPY and 12.4 tons/hr 100% sulfuric acid production rate.	77640 TPY and 8.9 tons/hr 100% sulfuric acid production rate.

Permit Type and Fee Information

Permit Type:	AC1F - Construction permit having potential emissions less than 5 tpy of each pollutant	AC1B - Const. permit having potential emissions of 100 tpy or more of any single pollutant and not subject to PSD or NAA review
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EU Regulations

62-296.402(2)(a)


 *Regulation exists only in Engineer version*

Applicant version 2

Engineer version


Regulation:	62-296.402(2)(a)
Regulation Type:	State

62-296.402(2)(b)

 *Regulation exists only in Engineer version*

Regulation:	62-296.402(2)(b)
Regulation Type:	State

62-296.402(2)(c)

 *Regulation exists only in Engineer version*


Regulation:	62-296.402(2)(c)
Regulation Type:	State

EU Pollutants

SAM

Allowable Emissions 1

Test Method 8

 *Test Method exists only in Engineer version*

Description:	Sulfuric Acid Mist and SO2 Emissions
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SO2

Allowable Emissions 1

Test Method 8

 *Test Method exists only in Engineer version*

Description:	Sulfuric Acid Mist and SO2 Emissions
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EU Operating Capacity and Schedule

Operating Capacity and Schedule Comment:	Maximum solid fuel input to the gasification plant shall not exceed 2,325 tons/day on a dry basis. Maximum weight of the petroleum coke blended shall not exceed 1,976.25 tons per day, on a dry basis.	Maximum solid fuel input to the gasification plant shall not exceed 2325 tons/day on a dry basis.
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EU Regulations

62-212.400(5)

 *Regulation exists only in Engineer version*

Regulation:	62-212.400(5)
Regulation Type:	State

EU Segments

39999999

Maximum % Sulfur:	4.7	4.55
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DO I NEED A PERMIT?

In Florida, a permit is required prior to constructing, operating or modifying a unit or facility that emits or is reasonably expected to emit any air pollutant unless an exemption from permitting applies. [Rule 62-210.300, Florida Administrative Code (FAC)] The following series of questions is intended to help you determine if the construction, operation or modification of a unit or activity needs a permit in Florida.

Exemptions

Question 1: Is my unit or activity categorically or conditionally exempt?

There are two types of exemptions established by rule. First, there are specific exemptions based upon the type of activity or unit. These are called categorical exemptions and are listed in Rule 62-210.300(3)(a), FAC. Examples of activities and units exempted from construction and operation permits include home heating furnaces, application of fungicides and pesticides, and restaurants. There are also activities and units that are exempt as long as they meet certain requirements that are set forth in the rules. These are referred to as conditional exemptions and are also set forth in Rule 62-210.300(a), FAC. For example, some emergency generators, fossil fuel steam generators, printing operations, and internal combustion engines may be exempt if they meet the criterion set forth in the rule. These exemptions are self-executing and do not require an application or advance notification to the permitting authority.

Question 2: Is my unit or activity generically exempt?

If your unit or activity is not categorically or conditionally exempt, it may meet the generic exemption thresholds in Rule 62-210.300(3)(b), FAC. These exemptions are based upon the activity, unit or facility's potential emissions and whether other state or federal rules may regulate the activity or unit. These exemptions are self-executing and do not require an application or advance notification to the permitting authority.

One of the requirements to qualify for a categorical, conditional or generic exemption is that the activity or unit is not subject to a unit specific applicable requirement. This means that there is no other state or federal rules that establish requirements on that activity or unit beyond record keeping or reporting. The majority of the state rules that would be unit specific are set forth in Chapter 62-296, FAC. The federal rules are more voluminous but unit specific requirements would largely be in Title 40, Chapters 60, 61 or 63 of the Code of Federal Regulation (CFR).

Question 3: Would my unit or activity qualify for a case-by-case exemption?

If your unit or activity does not fall within the exemption requirements in Rule 62-210.300, FAC, it may qualify for a case-by-case exemption provided in Rule 62-4.040, FAC. Typically, this exemption is used for units or activities that emit air pollutants in quantities that are small enough based upon certain factors that regulation of the activity or unit is not reasonably justified. If a state or federal rule applies to your unit or activity, it likely will not qualify for this exemption. This exemption requires the concurrence and action of the permitting authority.

General Permits

If your unit or activity does not meet any of the exemption criterion, you may be authorized to construct or operate the unit or activity by following the requirements of a specific rule called a "general permit" instead of obtaining a case-by-case permit.

Question 4: Is my unit or activity covered by a general permit?

A general permit is actually a specific rule that governs the construction and operation of specific units or activities such that an individual permit is not necessary. If your unit or activity is covered by a general permit, you will need to follow registration procedures [*link to 210.920 1 or 2*] and submit the processing fee [*link to 4.050*] but no individual permit application or permit is required. Rule 62-210.310, FAC, identifies the general permit rules and procedures. Examples of activities and units that may be eligible for a general permit include printing operations, bulk gasoline plants, surface coating operations, concrete batch plants and dry cleaning facilities. [question for Larry: are they moving the TV gps into 210 or do we need to still reference 213?]

If your unit or activity does not meet the requirements for an exemption or general permit, an air construction, operation and/or Title V operation permit is required.

Construction Permits

A construction permit is required prior to building a new unit or facility. The type of construction permit required is dependent upon the type of unit or facility and its potential (i.e. maximum possible) air pollutant emissions.

Prevention of Significant Deterioration (PSD) Permit

Question 5: Is the unit or facility you are building a new major stationary source of air pollution?

If you are building a brand new unit or facility on a greenfield site, it may require a construction permit called a PSD permit. There are two thresholds beyond which a PSD permit is required. If a facility is specifically identified on the major stationary source list in Rule 62-210.200, FAC and it could emit more than 100 tons per year of a PSD pollutant, a PSD permit is required. If the facility is not specifically listed but it could emit more than 250 tons per year of a PSD pollutant, a PSD permit is required. PSD permit applications are processed in our Tallahassee office. If emission limits are taken to stay below the 100 or 250 ton per year threshold, the permit application is handled by the Department's District or Local Program Office.

In addition, if you are making a physical or operational change at an existing facility that is not currently a major stationary source but the PSD pollutant emissions associated with that change meet the major stationary source thresholds (i.e. 100 tons per year for specified facility types or 250 tons per year for all other facility types), that change requires a PSD permit.

PSD permit applications require ambient air quality modeling and an evaluation of the best available control technologies pursuant to Rule 62-212.400, FAC. In addition, there is a required \$7500 permit application fee for PSD applications.