PASCO COGEN, LTD.
NCP DADE POWER, INC., GENERAL PARTNER

c/o Aquila • 20 West 9th Street • Kansas City, MO 64105
Tel (816) 527-1160 • Fax (816) 527-4160

June 6, 2003

Mr. Jeffery F. Koerner, PE
Florida Department of Environmental Protection
Division of Air Resource Management
2600 Blair Stone Road, MS 5505
Tallahassee, FL 32399-2400

(850) 921-9536

RECEIVED
JUN 10 2003
BUREAU OF AIR REGULATION

RE: Pasco Cogeneration LP; Facility ID No. 1010071; Pasco County, Florida; Air Construction Permit Application to Modify Two GE LM-6000 Combustion Turbine Units

Dear Mr. Koerner:

Attached is a completed permit application in which the Pasco Cogeneration facility requests approval to perform an uprate on its two current GE LM-6000 Combustion Turbine units. GE would perform the proposed uprate that will result in enhanced unit operation. The basic components of the uprate include; replacement of the low pressure turbine with a more efficient design and to modify the CT unit to allow cooling of the combustion process with a water injection process that has been designed by GE.

GE has demonstrated this process to be very successful for those facilities it has already modified, including the Tropicana CT facility in Bradenton, FL. We believe that the enhancement will allow the two units at Pasco to perform more efficiently while still virtually achieving the same current emission standards. As you will note, what is being proposed is to maintain the current emission concentrations with a slightly higher heat input rate and a slight increase in pounds per hour of NOx and CO. The project is willing to offset the slight increase in NOx and CO emissions by accepting a lower annual emissions cap. The lowered cap will also ensure NSPS is not triggered.

The project believes that this uprating of the CTs can be performed without the necessity of modifying the emissions monitoring and data recovery programs currently in place at Pasco Cogen. The benefits seen by the uprating include more efficient use of the fuel fired by the facility. In terms of actually performing the modification, Pasco Cogen is proposing to perform the modification on one unit at a time. However, this schedule is still being evaluated.

At the Department's convenience, Pasco Cogen is prepared to meet with you and discuss this proposal further and go over the permit application. We believe that in performing this work we not only enhance the ability of Pasco Cogen to perform better, we will also be able to produce electricity with reduced emissions per MMBtu fired at the facility.

I will look forward to hearing back from you soon. My telephone number is (816) 527-1160 and my e-mail is thomas.grace@ aquila.com

Sincerely,

Thomas A. Grace, CHMM
Director – Environmental Health and Safety

W/ attachment

Cc: R. Christmas, w/a
L. Rajter, w/o
B. Miles, w/o
R. Murphy @ CASE Engineering, w/a
C. Peterson, SWD
File: 274-2010.3
K. Bond, EPA

L03045pasco

Department of Environmental Protection

Division of Air Resources Management

APPLICATION FOR AIR PERMIT - TITLE V SOURCE

See Instructions for Form No. 62-210.900(1)

I. APPLICATION INFORMATION

Identification of Facility

1. Facility Owner/Company Name: Pasco Cogeneration Limited	
2. Site Name: Pasco Cogeneration Limited	
3. Facility Identification Number: 1010071	[ ] Unknown
4. Facility Location: Street Address or Other Locator: 14850 Old State Rd. 23 City: Dade City County: Pasco Zip Code: 33525	
5. Relocatable Facility? [ ] Yes [X] No	6. Existing Permitted Facility? [X] Yes [ ] No

Application Contact

1. Name and Title of Application Contact: Thomas Grace, Director – Environmental, Health & Safety
2. Application Contact Mailing Address: Organization/Firm: Pasco Cogeneration, Limited, c/o Aquila Street Address: 20 West 9th Street City: Kansas City State: MO Zip Code: 64105
3. Application Contact Telephone Numbers: Telephone: (816) 527 - 1160 Fax: (816) 527 - 4160

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	6-10-2003
2. Permit Number:	1010071-002-AC
3. PSD Number (if applicable):	
4. Siting Number (if applicable):	

RECEIVED

JUN 10 2003

BUREAU OF AIR REGULATION

Purpose of Application

Air Operation Permit Application

This Application for Air Permit is submitted to obtain: (Check one)

[ ] Initial Title V air operation permit for an existing facility which is classified as a Title V source.

[ ] Initial Title V air operation permit for a facility which, upon start up of one or more newly constructed or modified emissions units addressed in this application, would become classified as a Title V source.

Current construction permit number:_____

[ ] Title V air operation permit revision to address one or more newly constructed or modified emissions units addressed in this application.

Current construction permit number:_____

Operation permit number to be revised:_____

[ ] Title V air operation permit revision or administrative correction to address one or more proposed new or modified emissions units and to be processed concurrently with the air construction permit application. (Also check Air Construction Permit Application below.)

Operation permit number to be revised/corrected:_____

[ ] Title V air operation permit revision for reasons other than construction or modification of an emissions unit. Give reason for the revision; e.g., to comply with a new applicable requirement or to request approval of an "Early Reductions" proposal.

Operation permit number to be revised:_____

Reason for revision:_____

Air Construction Permit Application

This Application for Air Permit is submitted to obtain: (Check one)

[X] Air construction permit to construct or modify one or more emissions units.

[ ] Air construction permit to make federally enforceable an assumed restriction on the potential emissions of one or more existing, permitted emissions units.

[ ] Air construction permit for one or more existing, but unpermitted, emissions units.

Owner/Authorized Representative or Responsible Official

1.	Name and Title of Owner/Authorized Representative or Responsible Official: Leo Rajter, Vice President
2.	Owner/Authorized Representative or Responsible Official Mailing Address: Organization/Firm: Pasco Cogeneration, Limited, c/o Aquila Street Address: 20 West 9th Street City: Kansas City State: MO Zip Code: 64105
3.	Owner/Authorized Representative or Responsible Official Telephone Numbers: Telephone: (816) 701 - 6371 Fax: (816) 502 - 5371
4.	Owner/Authorized Representative or Responsible Official Statement: *I, the undersigned, am the owner or authorized representative*(check here [X], if so) or the responsible official (check here [ ], if so) of the Title V source addressed in this application, whichever is applicable. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof. I understand that a permit, if granted by the Department, cannot be transferred without authorization from the Department, and I will promptly notify the Department upon sale or legal transfer of any permitted emissions unit.* Signature: Leo C. Rajter Date: 6/6/03

* Attach letter of authorization if not currently on file.

Professional Engineer Certification

1.	Professional Engineer Name: John L. McKelvey Registration Number: 37319
2.	Professional Engineer Mailing Address: 5925 Imperial Pkwy, Suite 226 Mulberry, FL 33860 Organization/Firm: Case Engineering, Inc. Street Address: 5925 Imperial Pkwy, Suite 226 City: Mulberry State: Florida Zip Code: 33860
3.	Professional Engineer Telephone Numbers: Telephone: (863) 701 - 2822 Fax: (863) 701- 7671

4. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this Application for Air Permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

If the purpose of this application is to obtain a Title V source air operation permit (check here [ ], if so), I further certify that each emissions unit described in this Application for Air Permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance schedule is submitted with this application.

If the purpose of this application is to obtain an air construction permit for one or more proposed new or modified emissions units (check here [X], if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

If the purpose of this application is to obtain an initial air operation permit or operation permit revision for one or more newly constructed or modified emissions units (check here [ ], if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

John L. McKelvey — Signature

June 3, 2003 — Date

(seal)

* Attach any exception to certification statement.

Scope of Application

Emissions Unit ID	Description of Emissions Unit	Permit Type	Processing Fee
1R	(2) Combustion Turbines (CTs) each with HRSG and DB modification of both LM-6000 CTs with GE's proposed CT-6000 uprate. The GE LM-6000 uprate will allow for enhanced operating efficiency by utilization of water mist injection. This upgrade will allow each unit to be more efficient during warmer seasonal operations and more effective in conversion of fuel to electric energy.	Construction	N/A

Application Processing Fee

Check one: [ ] Attached - Amount: $_____ [X] Not Applicable

*** Site currently holds valid Title V permit, processing fee not required at this time.**

Construction/Modification Information

1. Description of Proposed Project or Alterations: To upgrade the 2 existing and permitted LM-6000 combustion Turbines using GE's current LM-6000 Unit uprating program.
2. Projected or Actual Date of Commencement of Construction: September, 2003
3. Projected Date of Completion of Construction: May 1, 2004

Application Comment

See Attachment PC-AI-AC for site description and general information.

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates: Zone: 17 East (km): 383.5 North (km): 3139.0			
2. Facility Latitude/Longitude: Latitude (DD/MM/SS): 28/22/28 Longitude (DD/MM/SS): 82/11/21			
3. Governmental Facility Code: 0	4. Facility Status Code: A	5. Facility Major Group SIC Code: 49	6. Facility SIC(s): 4931
7. Facility Comment (limit to 500 characters): Pasco Cogeneration consists of two GE LM-6000 combustion turbines, with duct burners (CT/DB), that exhaust through two Heat Recovery Steam (HRSG) stacks. The CTs can be fired on either natural gas or distillate oil.			

Facility Contact

1. Name and Title of Facility Contact: Richard Christmas
2. Facility Contact Mailing Address: Organization/Firm: Pasco Cogeneration, Limited Street Address: 14850 Old State Road 23 City: Dade City State: FL Zip Code: 33525
3. Facility Contact Telephone Numbers: Telephone: (352) 523 - 0062 Fax: (352) 523 - 0572

Facility Regulatory Classifications

Check all that apply:

1. [ ] Small Business Stationary Source?	[ ] Unknown
2. [√] Major Source of Pollutants Other than Hazardous Air Pollutants (HAPs)?	
3. [ ] Synthetic Minor Source of Pollutants Other than HAPs?	
4. [ ] Major Source of Hazardous Air Pollutants (HAPs)?	
5. [ ] Synthetic Minor Source of HAPs?	
6. [√] One or More Emissions Units Subject to NSPS?	
7. [ ] One or More Emission Units Subject to NESHAP?	
8. [√] Title V Source by EPA Designation?	
9. Facility Regulatory Classifications Comment (limit to 200 characters): CT-NSPS for stationary GTs, (40CFR60 subpart GG). 40 CFR 60 subpart Dc applies to the duct burners 40 CFR 60 subpart Kb applies to the fuel oil storage tank	

List of Applicable Regulations

See Attachment PC-FI-B	

B. FACILITY POLLUTANTS

List of Pollutants Emitted

1. Pollutant Emitted	2. Pollutant Classif.	3. Requested Emissions Cap		4. Basis for Emissions Cap	5. Pollutant Comment
		lb/hour (1)	tons/year (1)		
NO_x (nat. gas)	A	104.3	368.0	ESCPSD	
CO	A	92.4	337.0	ESCPSD	
PM	B	7.6	27.0		
PM_{10}	B	7.6	27.0		
SO_2 (fuel oil)	B	87.6	21.0		
VOC	B	8.8	30.8		
NOx (2) (fuel oil)	A	148.3	368.0	ESCPSD	

See Attachment PC-BI-AC
(1) Based on two units operating. (2) Each unit limited to 240 hrs per year operation on fuel oil.

C. FACILITY SUPPLEMENTAL INFORMATION

Supplemental Requirements

1. Area Map Showing Facility Location: [X] Attached, Document ID: PC-FI-E1 [ ] Not Applicable [ ] Waiver Requested
2. Facility Plot Plan: [X] Attached, Document ID: PC-FI-E2 [ ] Not Applicable [ ] Waiver Requested
3. Process Flow Diagram(s): [X] Attached, Document ID: PC-FI-E3 [ ] Not Applicable [ ] Waiver Requested
4. Precautions to Prevent Emissions of Unconfined Particulate Matter: [X] Attached, Document ID: PC-FI-E4 [ ] Not Applicable [ ] Waiver Requested
5. Fugitive Emissions Identification: [X] Attached, Document ID: PC-FI-E5 [ ] Not Applicable [ ] Waiver Requested
6. Supplemental Information for Construction Permit Application: [X] Attached, Document ID: PC-FI-E6 [ ] Not Applicable
7. Supplemental Requirements Comment: Attachment PC-FI-E6 →

Additional Supplemental Requirements for Title V Air Operation Permit Applications

8. List of Proposed Insignificant Activities: [ ] Attached, Document ID:_____ [X] Not Applicable
9. List of Equipment/Activities Regulated under Title VI: [X] Attached, Document ID: PC-FI-E8 [ ] Equipment/Activities On site but Not Required to be Individually Listed [ ] Not Applicable
10. Alternative Methods of Operation: [X] Attached, Document ID: PC-FI-E9 [ ] Not Applicable
11. Alternative Modes of Operation (Emissions Trading): [ ] Attached, Document ID:_____ [X] Not Applicable
12. Identification of Additional Applicable Requirements: [ ] Attached, Document ID:_____ [X] Not Applicable
13. Risk Management Plan Verification: [ ] Plan previously submitted to Chemical Emergency Preparedness and Prevention Office (CEPPO). Verification of submittal attached (Document ID:_____) or previously submitted to DEP (Date and DEP Office:_____) [ ] Plan to be submitted to CEPPO (Date required:_____) [X] Not Applicable
14. Compliance Report and Plan: [X] Attached, Document ID: PC-FI-E14 [ ] Not Applicable
15. Compliance Certification (Hard-copy Required): [X] Attached, Document ID: PC-FI-E15 [ ] Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION (All Emissions Units)

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in This Section: (Check one)

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Regulated or Unregulated Emissions Unit? (Check one)

[X] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

[ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

3. Description of Emissions Unit Addressed in This Section (limit to 60 characters):
Two (2) Combustion Turbines (CTs), each with HRSG and DBs

4. Emissions Unit Identification Number: [ ] No ID
ID: [ ] ID Unknown

5. Emissions Unit Status Code:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A	1 Jul 93	49	[N]

9. Emissions Unit Comment: (Limit to 500 Characters)
The exhaust gas from each CT exhausts through an associated Heat Recovery Steam Generator (HRSG). The HRSGs provide steam to a steam generator, rated at 26.5 MW, and also furnishes steam to an orange processing facility (the QF host). The nameplate rating of each LM-6000 combustion turbine following the proposed CT uprate will change from 42 MW at 51°F to 50.2 MW.

Emissions Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method): Water injection to control NO_x emissions for each CT
2. Control Device or Method Code(s): 28

Emissions Unit Details

1. Package Unit:	
Manufacturer: General Electric	Model Number: LM-6000
2. Generator Nameplate Rating:	increased from 42 MW to 50.2 MW following CT uprate
3. Incinerator Information:	
Dwell Temperature:	°F
Dwell Time:	seconds
Incinerator Afterburner Temperature:	°F

B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:	CT (gas)	427.2	MMBtu/hr/CT
2. Maximum Incineration Rate:		lb/hr	tons/day
3. Maximum Process or Throughput Rate:			
4. Maximum Production Rate:			
5. Requested Maximum Operating Schedule:			
24	hours/day	7	days/week
52	weeks/year	8760	hours/year
6. Operating Capacity/Schedule Comment (limit to 200 characters): Max. heat input is based on natural gas firing as low heating value (LHV) @ 51° F; when firing. Uprate of unit increases from 423 MMBTU/hr. to 427.2 MMBTU/hr.			

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

See attachment PC-EOI-D	

D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? Stacks (EU1)	2. Emission Point Type Code: 3	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): Unit 1 stack; Unit 2 stack		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: N/A		
5. Discharge Type Code: V	6. Stack Height: 100 feet	7. Exit Diameter: 11 feet
8. Exit Temperature: 232 °F	9. Actual Volumetric Flow Rate: 325,221 acfm	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates: Zone: East (km): North (km):		
14. Emission Point Comment (limit to 200 characters): Data reflect each CT unit. Emission point calculations are based upon base load conditions at 51° F for natural gas firing. See Attachment PC-EOI-E14		

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Internal Combustion Engines, Electric Generation natural gas turbines (2)		
2. Source Classification Code (SCC): 2-01-002-01	3. SCC Units: Million cubic feet burner	
4. Maximum Hourly Rate: 0.427	5. Maximum Annual Rate: 3,740	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: 1,000
10. Segment Comment (limit to 200 characters): Max. Annual rate: 3,740.5 Max. rate at 51° F with heat content (MMBtu/scc) based on LHV. Max. percent sulfur: 1 grain/100 cf. DB ratios 90 MMBtu/hr. and 525,000 MMBtu/yr., respectively, per unit.		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Internal combustion engines, distillate oil (diesel) turbine: cogeneration, industrial (2)		
2. Source Classification Code (SCC): 2-02-001-03	3. SCC Units: Thousand Gallons burned	
4. Maximum Hourly Rate: 2.92	5. Maximum Annual Rate: 701	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: $\leq$ 0.1	8. Maximum % Ash:	9. Million Btu per SCC Unit: 130
10.Segment Comment (limit to 200 characters): Max. Annual Rate: 701.1 Maximum annual fuel usage based on a permit limitation of 2,921 gal/hr/ct and 701,050 gal/yr respectfully for the combustion turbines		

F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
NOx	**028**		**EL**
CO			**EL**
PM			**EL**
PM_{10}			**EL**
VOC			**EL**
SO_2			**EL**

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: NOx (CT on fuel oil)	2. Total Percent Efficiency of Control: 90
3. Potential Emissions: 148.3 lb/hour 368 tons/year	4. Synthetically Limited? [Y]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: 42 ppmvd @ 15% O2 Reference: Permit Limit (BACT)	7. Emissions Method Code: 0
8. Calculation of Emissions (limit to 600 characters): Potential based on revised calculation to synthetically limit triggering PSD. Total annual NOx emissions is limited to 368 tpy (see below).	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Hourly potential emissions based on CTs at 51° F operating conditions on fuel oil. Annual based upon the current facility limit. AC 51-196460. PSO-FL-177. Annual limit for NOx remains limited based upon a limit of firing ≤ 701,000 gallons of fuel oil per unit per year.	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code: Other and ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 148.3 lb/hr	4. Equivalent Allowable Emissions: 148.3 lb/hour 368 tons/year
5. Method of Compliance (limit to 60 characters): Annual compliance test, EPA method 20	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Natural gas firing; the 2 CT units are designed to produce 42 ppmvd@15%02. Allowable emissions established as BACT in the original project AC permit, Table 1A. This application requests having a synthetic cap for total NOx tonnage which limits annual NOx tonnage to 368 tpy (a 36.7 tpy reduction).	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: NOx (duct burner gas fired)	2. Total Percent Efficiency of Control:
3. Potential Emissions: 18 lb/hour 368 tons/year	4. Synthetically Limited? [Y]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters): Based upon 0.1 lb/mmBtu limit and a firing rate of 90 mmBtu/hr/DB	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Each DB is limited to 525,000 mmBtu per year heat input	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code: Other and ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 18 lb/hr	4. Equivalent Allowable Emissions: 18 lb/hour 368 tons/year
5. Method of Compliance (limit to 60 characters): None	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Emission limit for 2 duct burners as established by BACT annual emissions for facility. Natural gas only. Basis of limit is 0.1 lb/MMBtu	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: NOx (CT and DB operated on nat. gas)	2. Total Percent Efficiency of Control:
3. Potential Emissions: 104.0 lb/hour 368 tons/year	4. Synthetically Limited? [Y]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters):	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code: Other and ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 104.0 lb/hr	4. Equivalent Allowable Emissions: 104.0 lb/hour 368 tons/year
5. Method of Compliance (limit to 60 characters): Annual compliance test, EPA method 20	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Emission limit for CTs and DBs as established by BACT as 25 ppm. The lb/hr rate is expected to increase slightly from 103.5 to 104 lb/hr. , while natural gas firing. To support acceptance of this application, Pasco Cogen requests having a synthetic cap for total NOx tonnage which limits annual NOx tonnage to 368 tpy (a 36.7 tpy site reduction).	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: NOx (CT and DB operated on nat. gas)	2. Total Percent Efficiency of Control:
3. Potential Emissions: 104.3 lb/hour 368 tons/year	4. Synthetically Limited? [Y]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters):	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code: Other and ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 104.0 lb/hr	4. Equivalent Allowable Emissions: 104.0 lb/hour 368 tons/year
5. Method of Compliance (limit to 60 characters): Annual compliance test, EPA method 20	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Emission limit for CTs and DBs as established by BACT as 25 ppm. The lb/hr rate is expected to increase slightly from 103.5 to 104 lb/hr. , while natural gas firing. To support acceptance of this application, Pasco Cogen requests having a synthetic cap for total NOx tonnage which limits annual NOx tonnage to 368 tpy (a 36.7 tpy site reduction).	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: CO (nat. gas)	2. Total Percent Efficiency of Control:
3. Potential Emissions: 56.5 lb/hour 337.0 tons/year	4. Synthetically Limited? [Y]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: 28 ppmvd (BACT) Reference: Permit limit (BACT)	7. Emissions Method Code: 0
8. Calculation of Emissions (limit to 600 characters): Potential emissions based on revised calculation to synthetically limit triggering PSD. Emissions based upon a 28 ppmvd (BACT) limit and a max. heat input of 427 mmBtu/hr/CT.	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Hourly potential emissions based on CTs/DBs at 51° F operating conditions on natural gas; annual is based upon permit limit (337 tpy).	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code: Other and ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 56.5 lb/hr	4. Equivalent Allowable Emissions: 56.5 lb/hour 337.0 tons/year cap
5. Method of Compliance (limit to 60 characters): Title V permit renewal compliment test; EPA method 10	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Natural gas firing: CT units 1 and 2; established as BACT in AC 51-196460, Table 1A; Basis of limit is 28 ppmvd. Request a synthetic cap having the annual tonnage limited to 337 tons per year (a 13.3 tpy site reduction).	

2 CTs w/ HRSG & DBs
Carbon Monoxide

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: CO (CT on fuel oil)	2. Total Percent Efficiency of Control:
3. Potential Emissions: 34.5 lb/hour 337 tons/year	4. Synthetically Limited? [Y]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters): Hourly emissions will be based upon firing fuel oil at 424 mmBtu/hr/CT with an annual limit of 701,000 gallons of fuel oil/CT (a limited operational period of 240 hours per CT is in place for operating on fuel oil).	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code: Other, ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 34.5 lb/hr	4. Equivalent Allowable Emissions: 34.5 lb/hour 337 tons/year cap
5. Method of Compliance (limit to 60 characters): Title V renewal compliance test; EPA method 10 if firing>400 hrs	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Oil firing; CTs 1 and 2; established BACT; basis of limit is 18 ppmvd	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: CO (duct burners)	2. Total Percent Efficiency of Control:
3. Potential Emissions: 36.0 lb/hour 337 tons/year	4. Synthetically Limited? [Y]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters): Emissions are based upon duct burner firing only. The annual limit per duct burner is 525,0000 mmBtu/yr and a limit of 0.2 lb/mmBtu heat input.	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code: Other and ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 36 lb/hr	4. Equivalent Allowable Emissions: 36 lb/hour 337 tons/year cap
5. Method of Compliance (limit to 60 characters): None	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Natural gas firing for duct burners in units 1 and 2; established as BACT; basis of limit is 0.2 lb/MMBtu. Each duct burner is limited to firing 525,000 mmBtu/yr.	

2 CTs w/ HRSG & DBs
Carbon Monoxide

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: CO (CT + DB on nat. gas)	2. Total Percent Efficiency of Control:
3. Potential Emissions: 92.5 lb/hour 337 tons/year	4. Synthetically Limited? [Y]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters):	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code: Other and ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 92.5 lb/hr.	4. Equivalent Allowable Emissions: 92.5 lb/hour 337 tons/year cap
5. Method of Compliance (limit to 60 characters): Title V permit renewal compliance test, EPA method 10	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Natural gas firing for CTs and DBs; established BACT, 28 ppm for gas firing on CT which reflects 56.5 lb/hr. and 36 lb/hr on DB, and an annual cap of 337 tpy, which represents a 13.3 tpy site reduction from the current permit.	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: PM/ PM10 (CT on fuel oil)	2. Total Percent Efficiency of Control:
3. Potential Emissions: 20 lb/hour 27 tons/year	4. Synthetically Limited? [Y]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: 0.026 lb/MMBtu Reference: Permit limit (BACT)	7. Emissions Method Code: 0
8. Calculation of Emissions (limit to 600 characters): Potential emissions based on permit limit. Emissions based upon 0.026 lb/mmBtu fuel (BACT). Operations are limited to 240 hrs/yr and 701,000 gallons of fuel, per unit.	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Hourly potential emissions based on CTs at 51° F operating conditions on fuel oil. Annual Limit is based upon the current permit limit. Fuel oil use is limited to 240 hours /year and 701,000 gallons /year, per unit.	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code: Other	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 20 lb/hr	4. Equivalent Allowable Emissions: 20 lb/hour 27 tons/year
5. Method of Compliance (limit to 60 characters): Annual VE test; 10% or less	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Fuel oil firing; CTs 1&2, established as BACT in Permit AC; Table 1A; basis of limit 0.026 lb/MMBtu	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: PM/PM10 (CT on nat. gas)	2. Total Percent Efficiency of Control:
3. Potential Emissions: 5 lb/hour 27 tons/year	4. Synthetically Limited? [Y]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters): Based upon 0.0065 lb/mmBtu (BACT) and 427 mmBtu/hr /CT	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): The maximum allowable emission rate is 27 tpy	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code: Other	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 5 lb/hr	4. Equivalent Allowable Emissions: 5 lb/hour 27 tons/year
5. Method of Compliance (limit to 60 characters): Annual VE test; 10% or less; if >400 hrs/yr operation	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): gas firing, based upon 0.0065 lb/mmBtu.	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted:	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters): **(Page intentionally left blank)**	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units:	4. Equivalent Allowable Emissions:
5. Method of Compliance (limit to 60 characters): None	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: PM/PM10 (CT +DB)	2. Total Percent Efficiency of Control:
3. Potential Emissions: 7.6 lb/hour 27 tons/year	4. Synthetically Limited? [Y]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters): CT emission rate is based upon 0.0065 lb/ mmBtu and the DB emission rate is based upon 0.006 lb/ mmBtu/ DB.	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code: Other	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 7.6 lb/hr.	4. Equivalent Allowable Emissions: 7.6 lb/hour 27 tons/year
5. Method of Compliance (limit to 60 characters): Annual VE test; 10% or less	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Natural gas firing for CTs and DBs. Established as BACT	

2 CTs w/ HRSG & DBs
Volatile Organic Compounds

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: VOC (CT on fuel oil)	2. Total Percent Efficiency of Control:
3. Potential Emissions: 8.7 lb/hour 30.8 tons/year	4. Synthetically Limited? [Y]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: Reference: Permit limit	7. Emissions Method Code: 0
8. Calculation of Emissions (limit to 600 characters): Potential emissions based on permit limit	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Hourly potential emissions based upon CTs/DBs at 51° F operating on natural gas. Annual Limit is based on current permit limit	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 8.7 lb/hr	4. Equivalent Allowable Emissions: 8.7 lb/hour 30.8 tons/year
5. Method of Compliance (limit to 60 characters):	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: VOC	2. Total Percent Efficiency of Control:
3. Potential Emissions: 3.4 lb/hour 30.8 tons/year	4. Synthetically Limited? [Y]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters):	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code: Other	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 3.4 lbs/hr	4. Equivalent Allowable Emissions: 3.4 lb/hour 30.8 tons/year
5. Method of Compliance (limit to 60 characters): Compliance with CO limit	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Natural gas firing; CT Unit 1&2; established as permit limit in AC51-196460, Table 1A	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted:	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters): **(This page intentionally left blank)**	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code: Other	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: lb/hr	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance (limit to 60 characters): Compliance with CO limit	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

2 CTs w/ HRSG & DBs
Volatile Organic Compound

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: VOC (DB on nat. gas)	2. Total Percent Efficiency of Control:
3. Potential Emissions: 5.4 lb/hour 30.8 tons/year	4. Synthetically Limited? [Y]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters):	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code: Other	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 5.4 lb/hr	4. Equivalent Allowable Emissions: 5.4 lb/hour 30.8 tons/year
5. Method of Compliance (limit to 60 characters): None	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Natural gas firing for Duct Burners in Units 1 & 2. Duct burners limited to 525,000 mmBtu/yr.	

2 CTs w/ HRSG & DBs
Volatile Organic Compound

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: VOC (CT + DB on nat. gas)	2. Total Percent Efficiency of Control:
3. Potential Emissions: 8.8 lb/hour 30.8 tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters):	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code: Other	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 8.8 lb/hr	4. Equivalent Allowable Emissions: 8.8 lb/hour 30.8 tons/year
5. Method of Compliance (limit to 60 characters): Annual Operating Report	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Natural gas firing for CTs and DBs	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: PM_{10}	2. Total Percent Efficiency of Control:
3. Potential Emissions: 20 lb/hour* 27 tons/year	4. Synthetically Limited? [N]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: 0.026 lb/MMBtu Reference: Permit Limit (BACT)	7. Emissions Method Code: 0
8. Calculation of Emissions (limit to 600 characters): Potential emissions based on permit limit	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Hourly potential emissions based on CTs at 51° F operating conditions on fuel oil. Annual Limit is based on current permit limit	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code: Other	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 5 lb/hr	4. Equivalent Allowable Emissions: 5 lb/hour 27 tons/year
5. Method of Compliance (limit to 60 characters): Annual VE test; 10% or less	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Natural gas firing; CTs 1 & 2; established as BACT in AC permit; Table 1A; basis of limit 0.0065 lb/MMBtu	

2 CTs w/ HRSG & Dbs
Particulate Matter – PM_{10}

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: PM10	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters):	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code: Other	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 20 lb/hr	4. Equivalent Allowable Emissions: 20 lb/hour 27 tons/year
5. Method of Compliance (limit to 60 characters): Annual VE test; 10% or les; if >400 hrs/yr operation on fuel oil	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Oil firing; CTs 1 & 2; established as BACT; basis of limit 0.026 lb/MMBtu	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: PM10 (Duct Burner natural gas only)	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour tons/year	4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters):	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code: Other	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 2.6 lb/hr	4. Equivalent Allowable Emissions: 2.6 lb/hour 27 tons/year
5. Method of Compliance (limit to 60 characters): None	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Natural gas firing for Duct Burners Units 1 & 2; established as BACT; basis of limit 0.006 lb/MMBtu.	

2 Cts w/ HRSG & DBs
Particulate Matter – PM_{10}

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: PM10	2. Total Percent Efficiency of Control:
3. Potential Emissions: 7.6 lb/hour 27 tons/year	4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters):	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code: Other	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 7.6 lb/hr	4. Equivalent Allowable Emissions: 7.6 lb/hour 27 tons/year
5. Method of Compliance (limit to 60 characters): Annual VE test; 10% or less	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Natural gas firing for CTs and DBs. Established as BACT	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: SO_2 (CT on fuel oil)	2. Total Percent Efficiency of Control:
3. Potential Emissions: 87.6 lb/hour 21 tons/year	4. Synthetically Limited? [Y]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: 0.1 % Sulfur Reference: Permit Limit	7. Emissions Method Code: 0
8. Calculation of Emissions (limit to 600 characters): Potential emissions based on permit limit. Emissions are based on a limit of 0.1% sulfur in fuel oil, and each unit being restricted to a total of 701,000 gallons of fuel oil annually and operations restricted to 240 hours annually.	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Hourly potential emissions based on CTs at 51° F operating on distillate oil. Annual Emissions limit is based on current permit limit.	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code: Other	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 87.6 lb/hr	4. Equivalent Allowable Emissions: 87.6 lb/hour 21 tons/year
5. Method of Compliance (limit to 60 characters): Fuel analysis – oil firing	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Allowable emissions established as limit in AC permit; Table 1A for distillate oil firing. Annual limit established for facility of 701,000 gal/yr/unit. DBs can not fire when CT unit is fired on fuel oil.	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation 1 of 2

1. Visible Emissions Subtype: VE 10	2. Basis for Allowable Opacity: [ ] Rule [X] Other
3. Requested Allowable Opacity: Normal Conditions: 10% Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: EPA Method 9	
5. Visible Emissions Comment (limit to 200 characters): VE limit established in Permit AC 51 – 196460, specific condition No. 6	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor 1 of 2

1. Parameter Code: WTF	2. Pollutant(s):
3. CMS Requirement:	[X] Rule [ ] Other
4. Monitor Information: Manufacturer: Chessell Model Number: 4181G	Serial Number: 1692600101010901
5. Installation Date: 01 July 1993	6. Performance Specification Test Date: N/A
7. Continuous Monitor Comment (limit to 200 characters): Parameter Code: Fuel. CMS required by NSPS (40 CFR 60 subpart GG). Systems installed in accordance with original Air Construction permit, specific condition No. 22	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation 2 of 2

1. Visible Emissions Subtype: VE99	2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: 100 % Maximum Period of Excess Opacity Allowed: 60 min/hour	
4. Method of Compliance: Best operating practice	
5. Visible Emissions Comment (limit to 200 characters): Excess VE allowed for startup and shutdown pursuant to FDEP Rule 62-210. 700 (1), 2 hrs/24 hour period	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor 2 of 2

1. Parameter Code: WTF	2. Pollutant(s):
3. CMS Requirement:	[X] Rule [ ] Other
4. Monitor Information: Manufacturer: Chessell Model Number:4181G	Serial Number: 1692600101010901
5. Installation Date:01 Jul 1993	6. Performance Specification Test Date: N/A
7. Continuous Monitor Comment (limit to 200 characters): CMS required by NSPS (40 CFR 60 Subpart GG). System installed in accordance with Air Construction Permit, Specific condition No. 22. Pollutant emitted = NOx	

J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements

1. Process Flow Diagram [X] Attached, Document ID: PC-E01-L1 [ ] Not Applicable [ ] Waiver Requested	
2. Fuel Analysis or Specification [X] Attached, Document ID: PC-E01-L2 [ ] Not Applicable [ ] Waiver Requested	
3. Detailed Description of Control Equipment [ ] Attached, Document ID:_____ [X] Not Applicable [ ] Waiver Requested	
4. Description of Stack Sampling Facilities [X] Attached, Document ID: PC-E01-L4 [ ] Not Applicable [ ] Waiver Requested	
5. Compliance Test Report [ ] Attached, Document ID:_____ [X] Previously submitted, Date: February 22 and March 22, 1999 [ ] Not Applicable	
6. Procedures for Startup and Shutdown [ ] Attached, Document ID: PC-E01-L6 [ ] Not Applicable [ ] Waiver Requested	
7. Operation and Maintenance Plan [ ] Attached, Document ID:_ [X] Not Applicable [ ] Waiver Requested	
8. Supplemental Information for Construction Permit Application [ ] Attached, Document ID:_____ [X] Not Applicable	
9. Other Information Required by Rule or Statute [ ] Attached, Document ID:_____ [X] Not Applicable	
10. Supplemental Requirements Comment:	

Additional Supplemental Requirements for Title V Air Operation Permit Applications

11. Alternative Methods of Operation
[X] Attached, Document ID: PC-E01-L10 [ ] Not Applicable

12. Alternative Modes of Operation (Emissions Trading)
[ ] Attached, Document ID:_____ [X] Not Applicable

13. Identification of Additional Applicable Requirements
[ ] Attached, Document ID:_____[X] Not Applicable

14. Compliance Assurance Monitoring Plan
[X] Attached, Document ID: PC-FI-E14 [ ] Not Applicable

15. Acid Rain Part Application (Hard-copy Required)

[ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
Attached, Document ID:_____

[ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
Attached, Document ID:_____

[ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
Attached, Document ID:_____

[ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
Attached, Document ID:_____

[ ] Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
Attached, Document ID:_____

[ ] Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
Attached, Document ID:_____

[X] Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in This Section: (Check one)

[] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Regulated or Unregulated Emissions Unit? (Check one)

[X] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

[ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

3. Description of Emissions Unit Addressed in This Section (limit to 60 characters):
Facility-wide Fugitive and Vent Emissions

4. Emissions Unit Identification Number:
ID:

[ ] No ID
[X] ID Unknown

5. Emissions Unit Status Code:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A	1 Jul 93	49	[N]

9. Emissions Unit Comment: (Limit to 500 Characters)
This emissions unit consists of a fuel oil storage tank, facility-wide fugitive and vent emissions from various loctions throughout the facility. These emission points are listed in PC-E02-B6, with the exception of NOx emissions from the 1.275 MW emergency generators, the cumulative emissions from these units are less than the reporting thresholds. List of exemptions: 62-210.300 (3)(a) 5, 7, 9, 10,11,12, 15, 16, 20,21,22,23,24;62-296.310(2) and (3). Trivial sources listed for completeness.

Emissions Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method):
2. Control Device or Method Code(s):

Emissions Unit Details

1. Package Unit:		
Manufacturer:		Model Number:
2. Generator Nameplate Rating:	MW	
3. Incinerator Information:		
Dwell Temperature:		°F
Dwell Time:		seconds
Incinerator Afterburner Temperature:		°F

B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:		MMBtu/hr
2. Maximum Incineration Rate:	lb/hr	tons/day
3. Maximum Process or Throughput Rate: 701,100 gal/yr		
4. Maximum Production Rate:		
5. Requested Maximum Operating Schedule:		
24	hours/day	7 days/week
52	weeks/year	8760 hours/year
6. Operating Capacity/Schedule Comment (limit to 200 characters): Maximum process rate reflects fuel oil throughout limit for CT oil storage tank		

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

40CFR60.116b(b)	

D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? Facility wide	2. Emission Point Type Code: 2	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point):		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: F	6. Stack Height: feet	7. Exit Diameter: feet
8. Exit Temperature: x =77 °F	9. Actual Volumetric Flow Rate: acfm	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: dscfm	12. Nonstack Emission Point Height: 0 feet	
13. Emission Point UTM Coordinates: Zone: East (km): North (km):		
14. Emission Point Comment (limit to 200 characters): Emission points are fugitive, and located throughout the facility. See PC-F1-E5		

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Petroleum Liquid Storage; fixed roof – distillate fuel No. 2; working loss		
2. Source Classification Code (SCC): 4-03-010-21	3. SCC Units: Thousand gallons used	
6. Maximum Hourly Rate: 6.5	7. Maximum Annual Rate: 701	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	11.Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters): Maximum Annual Rate: 701.1 (rounded to 701). Distillate fuel oil usage limit per combustion turbines		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Petroleum Liquid Storage; fixed roof distillate fuel No.2; breathing losses		
2. Source Classification Code (SCC): 4-03-010-20	3. SCC Units: Thousand Gallons stored	
6. Maximum Hourly Rate:	7. Maximum Annual Rate: 170	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
12.Segment Comment (limit to 200 characters): Maximum annual rate reflects storage capacity		

F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
NOx			**NS**

Facility-wide fugitive emissions

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: Fugetive Emissions (Other)	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters):	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): **(This page intentionally left blank)**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance (limit to 60 characters):	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: VE 20	2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: 20% Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: 60 min/hour	
4. Method of Compliance: None	
5. Visible Emissions Comment (limit to 200 characters): Applicable to 1,275 kw diesel generators; general VE pursuant to Rule 62-296.320(4)(b); excess emissions allowed for startup/shutdown and malfunction per Rule 62-210.700(1)	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor 1 of 1

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	[ ] Rule [ ] Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment (limit to 200 characters):	

Facility-wide fugitive emissions

J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements

1. Process Flow Diagram [ ] Attached, Document ID:_____[X] Not Applicable [ ] Waiver Requested
2. Fuel Analysis or Specification [ ] Attached, Document ID: _____ [X] Not Applicable [ ] Waiver Requested
3. Detailed Description of Control Equipment [ ] Attached, Document ID:_____ [X] Not Applicable [ ] Waiver Requested
4. Description of Stack Sampling Facilities [ ] Attached, Document ID:_____ [X] Not Applicable [ ] Waiver Requested
5. Compliance Test Report [ ] Attached, Document ID:_____ [ ] Previously submitted, Date:_____ [X] Not Applicable
6. Procedures for Startup and Shutdown [ ] Attached, Document ID:_____[X] Not Applicable [ ] Waiver Requested
7. Operation and Maintenance Plan [ ] Attached, Document ID:_ [X] Not Applicable [ ] Waiver Requested
8. Supplemental Information for Construction Permit Application [ ] Attached, Document ID:_____ [X] Not Applicable
9. Other Information Required by Rule or Statute [ ] Attached, Document ID:_____ [X] Not Applicable
10. Supplemental Requirements Comment:

Additional Supplemental Requirements for Title V Air Operation Permit Applications

11. Alternative Methods of Operation [ ] Attached, Document ID:_____[X] Not Applicable
12. Alternative Modes of Operation (Emissions Trading) [ ] Attached, Document ID:_____ [X] Not Applicable
13. Identification of Additional Applicable Requirements [ ] Attached, Document ID:_____[X] Not Applicable
14. Compliance Assurance Monitoring Plan [ ] Attached, Document ID:_____[X] Not Applicable
15. Acid Rain Part Application (Hard-copy Required) [ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a)) Attached, Document ID:_____ [ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) Attached, Document ID:_____ [ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.) Attached, Document ID:_____ [ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) Attached, Document ID:_____ [ ] Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) Attached, Document ID:_____ [ ] Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) Attached, Document ID:_____ [X] Not Applicable

ATTACHMENT PC-AI-AC

ATTACHMENT PC-AI-AC

This application is for Pasco Cogeneration Facility, located in Pasco County, Dade City, Florida.

The application structure is as follows:

Emission Units

General:

2 combustion turbines (CTs)*
2 heat recovery steam generators (HRSGs)

Emissions Points (2): 2 stacks for CT/HRSG Units 1 & 2

Fuel Segments: Natural gas, with 240 hours per year maximum of distillate oil

Pollutants

CT/HRSG	NO_x, CO, PM/PM10, VOC, SO_2

VE Emissions

CT/HRSG	VE limits applicable

CMS

CT/HRSG	NO_x, O_2, fuel consumption

PSD

CT/HRSG	NO_x

*This proposal is to have each LM-6000 unit uprated by GE with their water mist injection technology to enhance performance.

ATTACHMENT PC-BI-AC

Five Year Site Emissions Data and Proposed Emissions Cap

ATTACHMENT PC-B1-AC

FIVE YEAR SITE EMISSIONS DATA AND PROPOSED EMISSIONS CAP

Pollutant	1998			1999			2000			2001			2002		
	U1	U2	**Total**	U1	U2	**Total**	U1	U2	**Total**	U1	U2	**Total**	U1	U2	**Total**
NOx	173.1[1]	173.5	**346.5**	160.2	159.1	**310.3**	147.0	147.0	**294.0**	126.0	127.2	**253.2**	124.2	125.2	**249.4**
CO	125.5	127.9	**253.4**	114.4	107.4	**221.8**	97.1	97.8	**194.8**	83.8	84.9	**168.6**	81.7	82.1	**163.8**
PM/PM10	11.1	11.2	**22.3**	10.3	9.6	**19.9**	9.5	9.5	**18.9**	8.1	8.2	**16.3**	8.0	8.0	**16.0**
SO2	5.3	5.4	**10.8**	4.8	4.5	**9.2**	4.4	4.4	**8.7**	3.7	3.8	**7.5**	3.7	3.7	**7.4**
VOC	9.3	9.7	**19.0**	8.2	7.8	**16.0**	6.0	6.2	**12.2**	5.2	5.4	**10.8**	5.0	5.0	**10.0**

Pollutant	Current Permit[2]	1998/1999 Mean Ave.	PSD Trigger	Proposed Emissions Cap	Current vs. Proposed Cap Difference
NOx	404.7	328.4	40	368.0	-36.7
CO	350.3	237.6	100	337.0	-13.3
PM/PM10	27.0	21.1	15	27.0	0
SO2	21.0	10.0	40	21.0	0
VOC	30.8	17.5	40	30.8	0

[1] All calculations are in tons per year (tpy).
[2] Numbers represent total emissions from both site CTs

ATTACHMENT PC-FI-B
LIST OF APPLICABLE REGULATIONS

ATTACHMENT PC-FI-B

LIST OF APPLICABLE REGULATIONS

Chapter 4 Permits	
62-4.030	General Prohibition. (State only)
62-4.100 (1)(a);(b)	Exemptions Suspensions and Revocation. (State only)
62-4.120	Transfer of Permits. (State only)
62-4.130	Plant Operations – Problems. (State only)

Chapter 210 Stationary Sources – General Requirements	
62-210.300	Permits Required.
	(2) Air Operation Permits.
	(3)Exemptions; (a) 5,7,9,10,11,12,15,16,20,21,22,23,24.
62-210.350	Public Notice and Comment.
	(1) Public Notice of Proposed Agency Action.
	(3) Additional Public Notice Requirements for Facilities Subject to Operation Permits for Title V Sources
62-210.360	Administrative Permit Corrections.
62-210.370	Reports.
	(3) Annual Operating Report for Air Pollutant Emitting Facility.
62-210.900	Forms and Instructions; (5)

ATTACHMENT PC-FI-B

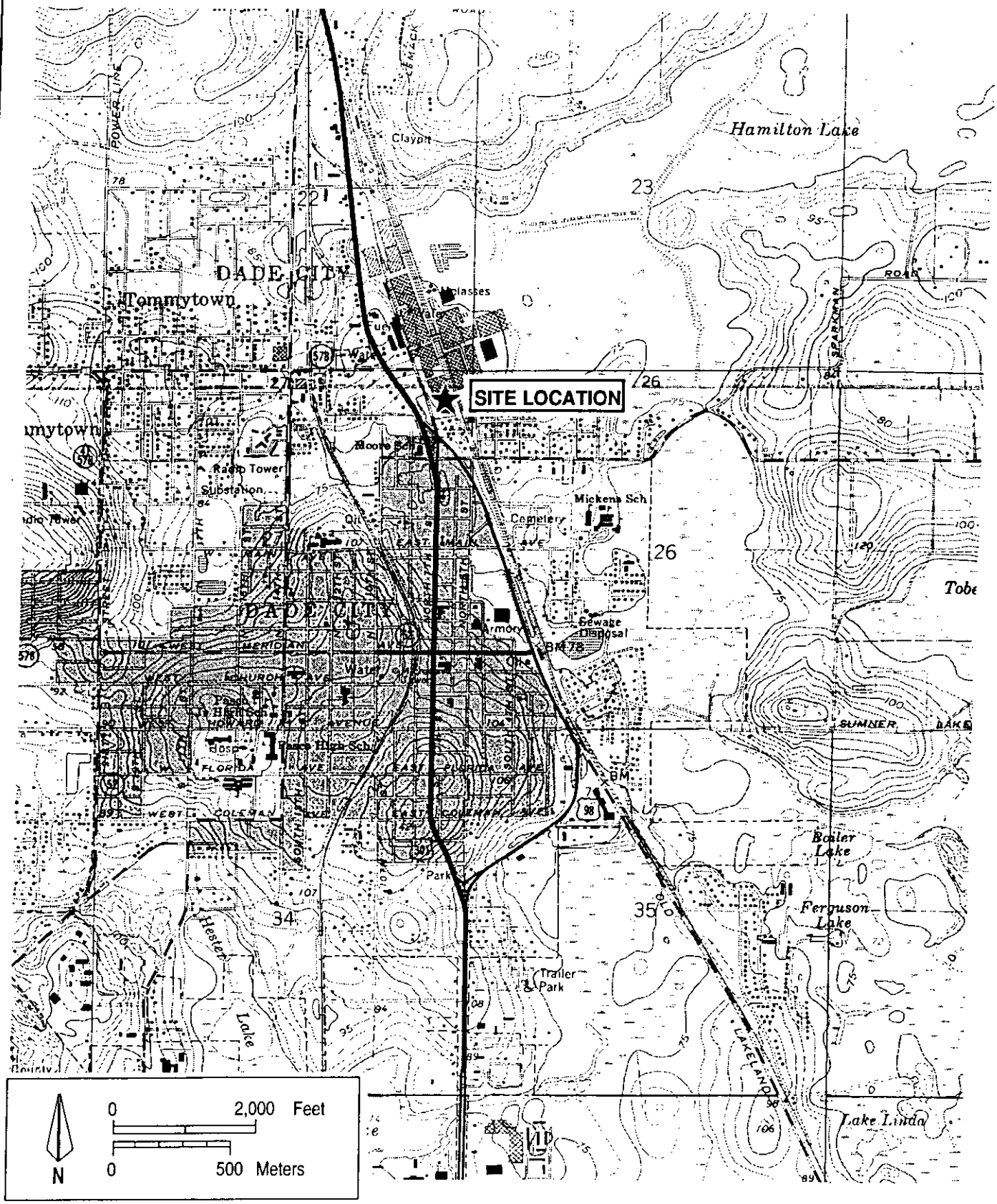
LIST OF APPLICABLE REGULATIONS

Chapter 213 Operation Permits for Major Sources of Air Pollution	
62-213.205	Annual Operation Licensing Fee; (1), (a), (b), (c), (e), (f), (g), (i), (j)
62-213.410	Changes Without Permit Revision.
62-213.420	Permit Applications. (1)(b)2. and 3.
62-213.460	Permit Shield.
62-213.900	Forms and Instructions; (1)

Chapter 296 Stationary Sources – Emission Standards	
62-296.320	General Pollutant Emission Limiting Standards.
	(2) Objectionable Odor Prohibited
	(4) General Particulate Emission Limiting Standards
	(c) Unconfirmed Emissions of Particulate Matter

EPA Part 82 – Protection of Stratospheric Ozone	
Subpart F – Recycling and Emissions Reduction	
82.166	Reporting and record keeping requirements; (k) and (m).

ATTACHMENT PC-FI-E1
AREA MAP



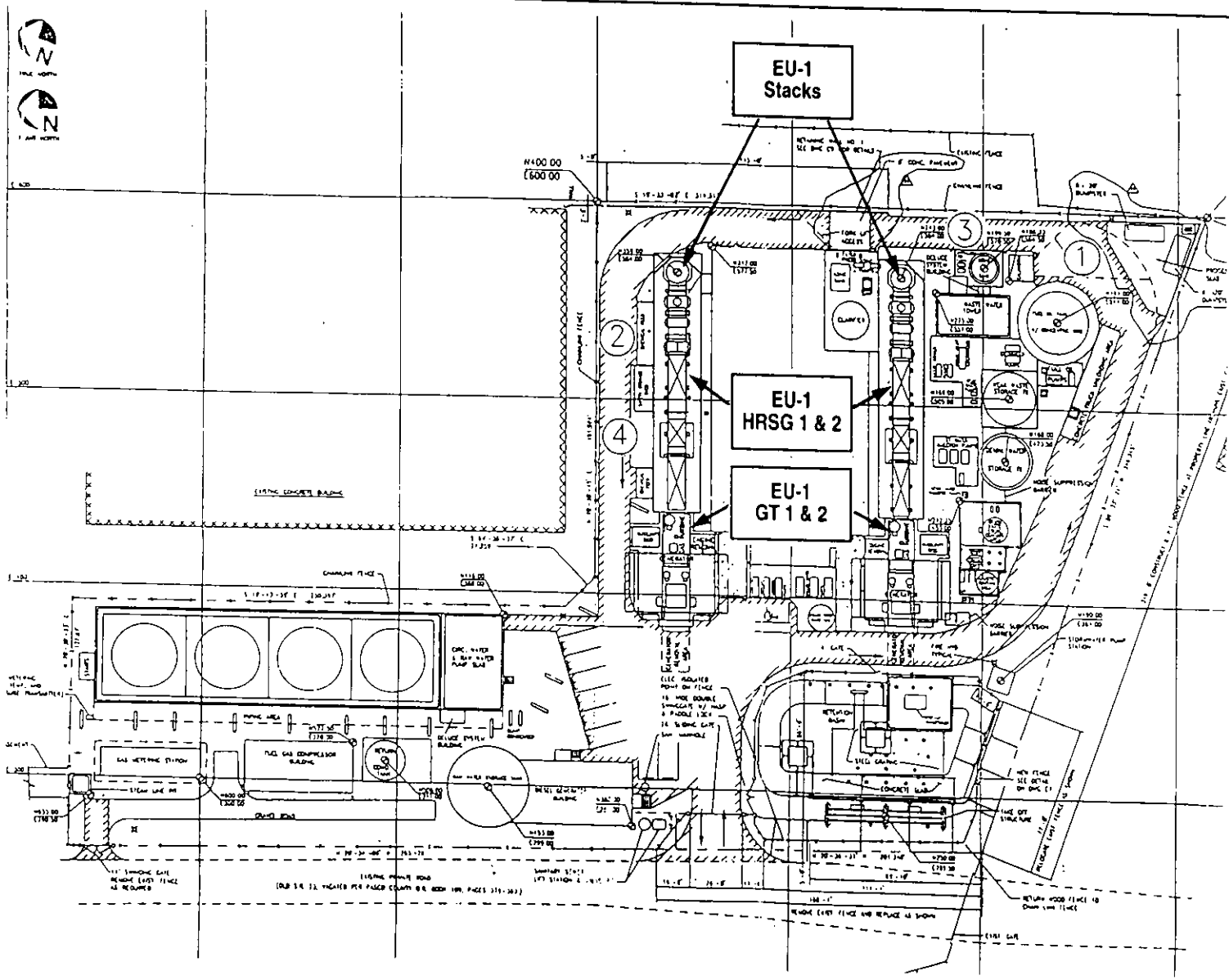
Attachment PC-FI-E1
Location of the Pasco Cogeneration, Limited Facility, Pasco County, Florida

Sources: USGS, 1988; KBN, 1996.

KBN
A GOLDER ASSOCIATES COMPANY

ATTACHMENT PC-FI-E2
FACILITY PLOT PLAN

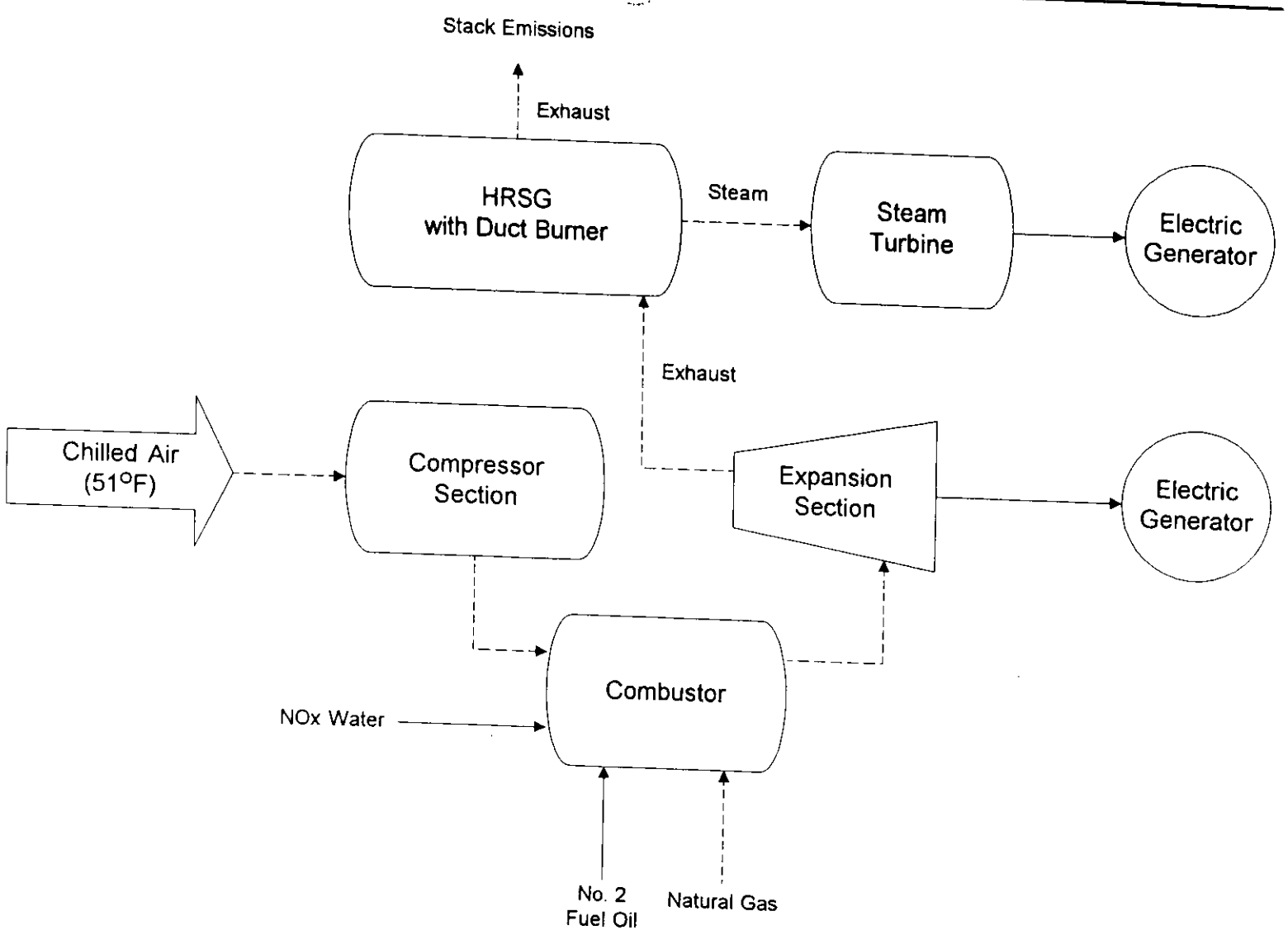
05 30 96



Attachment PC-FI-E2
Facility Plot Plan

KBN
A GOLDER ASSOCIATES COMPANY

ATTACHMENT PC-FI-E3
PROCESS FLOW DIAGRAM

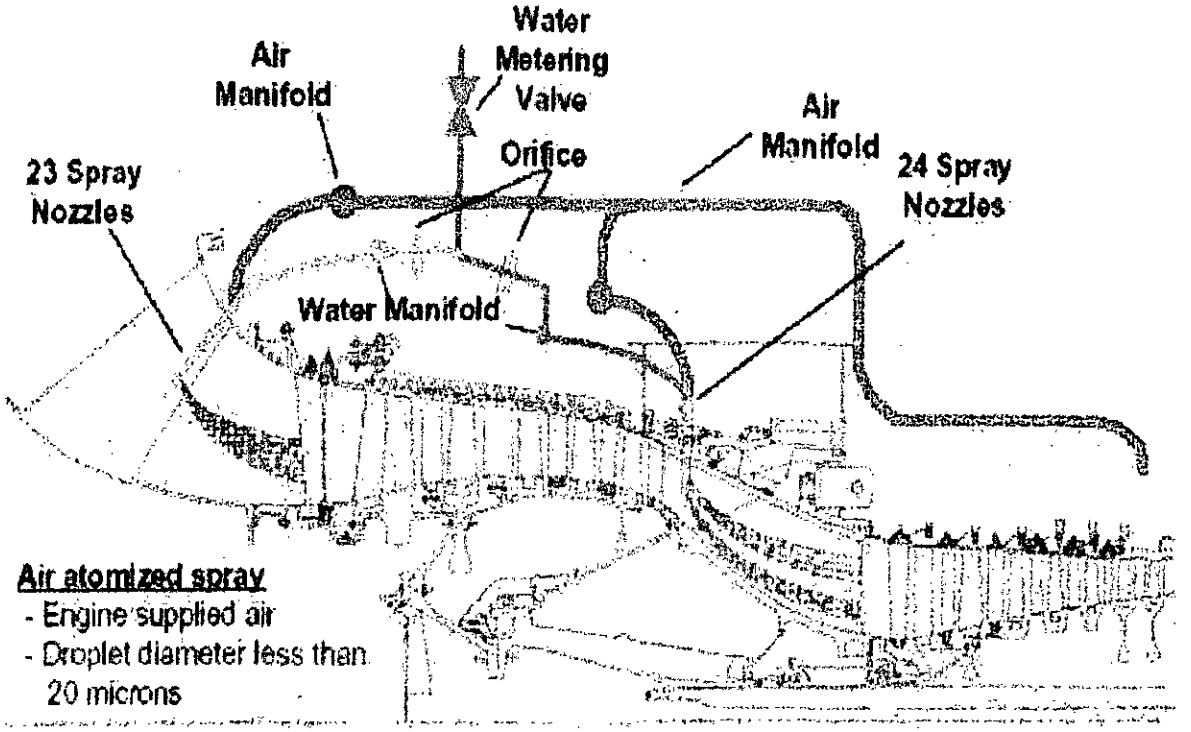


Attachment PC1-EUI1.VSD
Pasco Cogeneration, Ltd.
Process Flow Diagram
Dade City, Florida

Process Flow Legend
Solid / Liquid
Gas

Emission Unit: Combustion Turbine Unit (1 and 2)
Process Area:
Filename: PC1-EUI1.VSD
Latest Revision Date: 5/20/96

KBN Engineering and Applied Sciences, Inc.



Schematic diagram of the Sprint system showing water droplets being injected into the LPC and HPC of an LM6000.

ATTACHMENT PC-FI-E4
PRECAUTIONS TO PREVENT EMISSIONS OF UNCONFINED PARTICULATE MATTER

ATTACHMENT PC-FI-E4

PRECAUTIONS TO PREVENT EMISSIONS OF UNCONFINED PARTICULATE MATTER

The facility has negligible amounts of unconfined particulate matter as a result of the operation of the facility. Potential examples of particulate matter include:

- Fugitive dust from paved and unpaved roads,
- Fugitive particulates from the use of bagged chemical products, and
- Storage and handling of zero-liquid-discharge (ZLD) salt cake.

Operational measures are undertaken at the facility which also minimize particulate emissions, in accordance with 62-296.310(3), F.A.C.:

- Maintenance of paved areas as needed,
- Regular mowing of grass and care of vegetation,
- Limiting access to plant property by unnecessary vehicles,
- Use of bagged chemical products in enclosed or semi-enclosed areas, and
- Storage of ZLD byproduct in covered enclosed containers.

ATTACHMENT PC-FI-E5
FUGITIVE EMISSIONS IDENTIFICATION

ATTACHMENT PC-FI-E5
FUGITIVE EMISSIONS IDENTIFICATION

It should be noted that many fugitive emissions at the plant site have been classified as "exempt" or "trivial" activities and as such are not addressed here. The discussion below provides information on fugitive emissions that may occur at the facility.

Criteria and Precursor Air Pollutants

Fugitive particulate emissions are addressed in Attachment PC-FI-E4. Pasco Cogeneration, LT. Is not aware of fugitive emission of sulfur dioxide, nitrogen oxides, carbon monoxide, or lead compounds which would exceed the thresholds defined in the permit application instructions.

Volatile Organic Compounds (VOCs)

Fugitive emissions of VOCs include those resulting from the use of cleaners and solvents for maintenance and operation. VOCs are also emitted by the fuel oil storage tanks on the plant property, and by the combined-cycle units. VOC emissions for each of these emission units are covered in the respective Facility Pollutant or Emission Unit sections of this permit application.

Fugitive HAPs Emissions

The following hazardous air pollutants are present on the facility property and are potential sources of fugitive HAPs emissions:

- Chlorine
- Naphthalene
- Methyl ethyl ketone
- Toluene
- Xylene

Chlorine – Present in 150-lb cylinders. Used for water treatment at the facility. Presumptively exempt under category #27 of the FDEP Title V Insignificant Source Summary dated May 20, 1994.

Methyl Ethyl Ketone, Toluene, Xylene – The facility routinely maintains 5 gallons of paint thinner and solvents (which may contain MEK, toluene, or xylene) for use inplant maintenance activities. These containers are kept closed and are stored in weather-tight buildings. These emissions as a whole are addressed in the VOC section (preceding page).

Regulated Toxic or Flammable Substances

The following regulated toxic or flammable substances are present at the Pasco Cogeneration facility:

- Chlorine
- Sulfuric acid
- Acetylene
- Methane (natural gas)
- Cyclohexylamine

Chlorine – considered on the preceding page.

Sulfuric Acid – The facility maintains a 6,000-gallon Sulfuric Acid storage tank for water treatment use.

Acetylene – Present on the facility property in two 125-lb cylinders which are used for plant maintenance (welding and cutting). These operations are identified by EPA as trivial activities, and are exempt by Rule 62-210.3000.

Methane – Is a primary component of natural gas. The facility has a natural gas pipeline which delivers fuel to the generating units. This fuel delivery system is normally airtight, but does have safety valves which occasionally relieve (open) when an overpressure condition develops in the gas line.

Cyclohexylamine – The facility maintains several covered tote bins of a pH-adjustant chemical (Nalco Tri-Act 1820 Inhibitor) with up to 40% by weight of cyclohexylamine.

PC-FI-E6
SUPPLEMENTAL INFORMATION
FOR CP APPLICATION

PC-F1-E6: Supplemental Information For CP Application

Pasco Cogen plans to uprate its 2 GE LM6000 PA series Combustion Turbines (CTs) into more efficient units using GE's current uprate program. Given the nature of the facility's PPA and steam export requirements to Pasco Beverage (steam host facility), the only way to improve plant performance is to decrease fuel consumption while maintaining current power loads and export steam levels. Modification of the current LM-6000 model with the proposed uprate can help Pasco Cogen achieve this goal. Pasco will physically upgrade one unit on site, while replacing the second, with a newly reconditioned and upgraded unit.

The primary advantage of the newer LM6000 uprate technology for Pasco Cogen will be the fact that the modified CTs will experience significantly better fuel economy than the current PA series CTs. The key reason for this improved fuel efficiency is the use of GE's "**spr**ay **int**ercooling" or Sprint modification technology. Spray intercooling involves the injection of a fine mist of demineralized water into the inlet of the CT compressor section. The small water droplets (< 20 micron), rapidly evaporate as the compressed air heats up within the compressor unit. The evaporation process extracts heat from the air and lowers the discharge temperature of the compressor. The lower discharge temperature allows the firing temperature of the engine to be increased because the compressor discharge air is used to cool the most critical parts of the hot sections of the engine. By providing this cooling, the modification allows the engine to operate more efficiently. The hotter firing temperature, or increased delta in temperature, produces more power with improved fuel efficiency.

The results seen from this modification are especially noticeable in warm /hot weather. Based upon ASHRAE weather data for the past 50 years in the vicinity of Pasco Cogen, the average ambient temperature observed during on-peak hours of operation is approximately 80°F. At that temperature, the facility can produce 109 MW of power using the PC Sprint engines with no inlet chilling or supplemental firing.

Based upon emission levels seen from similar uprates in other units, the NOx and CO emissions resulting from the CT uprate modification are expected to remain within compliance of the current permit concentration (ppm) requirements. The total plant emission rates for NOx and CO are expected to be elevated slightly. NOx, is anticipated to rise from its current 85.5 lb/hr to 86.0 lb/hr., while CO is expected to increase slightly from 56.0 lb/hr to 56.5 lb/hr, for CO, both while firing on natural gas. Currently, the site's LM6000 PA engines use water injection into the combustion chamber to meet permit limits. The water moderates the flame temperature, which suppresses NOx formation. It is anticipated that this same technique will continue to be used to maintain control of NOx emissions at 25 ppmvd and CO emissions at 28 ppmvd with the modified units also. As shown in the synthetic cap table, Pasco is willing to accept less hours of operation or additional hours of lower load operation to meet the lower annual tonnage caps in order to have the ability to have this additional coverage.

ATTACHMENT PC-FI-E8
LIST OF EQUIPMENT/ACTIVITIES REGULATED UNDER TITLE VI

ATTACHMENT PC-FI-E8

LIST OF EQUIPMENT/ACTIVITIES REGULATED – TITLE VI

Pasco Cogeneration, Limited currently has over 9 refrigeration and air-conditioning units on the plant site. Of these, 3 chiller units currently meet the 50-pound threshold established by the Department.

Model Name, Number	**General Area**	**Amount**
Trane Centravac Water Chiller Model CVHF1270	CT/HRSG Chiller (2 units)	1,250 tons (each unit)
Mitsubishi Steam Absorption Chiller Model MDHU	Auxiliary Building	1,500 tons

ATTACHMENT PC-FI-E9
ALTERNATIVE METHODS OF OPERATION

ATTACHMENT PC-FI-E9

ALTERNATE METHODS OF OPERATION

Alternate methods of operation which could simultaneously affect more than one emissions unit include the following:

1. Use of alternate fuels (e.g. distillate oil) for any unit could simultaneously affect insignificant emissions from the fuel storage tanks based on increased or decreased use of the fuel stored in the tank.

ATTACHMENT PC-FI-E14
COMPLIANCE REPORT AND PLAN

ATTACHMENT PC-FI-E14

COMPLIANCE REPORT AND PLAN
PASCO COGEN LIMITED COGENERATION FACILITY

In accordance with Chapter 62-213, F.A.C. and based upon FDEP Permit No. AC51-196460, PSD-FL-177, the Cogeneration Facility Units 1 and 2 must comply with the following tests and reports as follows:

Table 1. Compliance Report and Plan, Pasco Cogeneration, Limited, Combined Cycle Units 1 and 2

Parameter	Value	Compliance Schedule/Method
Operating Hours	8,760 max., limit of 240 annual hours on fuel oil	Annual Operating Report
Heat Input Rate	427.2 MMBtu/hr-natural gas (51° F, LVH)per CT (corresponds to 407 MMBtu/hr ISO) (fuel increase) 424 MMBtu/hr-No. 2 fuel oil (51°F, LHV)per CT (corresponds to 406 MMBtu/hr ISO) 90 MMBtu/hr-natural gas (HHV) per duct burner 525,000 MMBtu/yr-natural gas per duct burner	Annual Operating Reprot Daily fuel usage records
Fuel Usage Rate	2,921 gal/hr per CT-No2 fuel oil 701,050 gal/yr per CT-No.2 fuel oil	Annual Operating Report Daily fuel usage records
Fuel Oil Specifications	0.1 percent sulfur by weight Monitor nitrogen content and lower and higher heating values of fuel oil	Tested by approved ASTM Methods Records maintained for 3 years
Natural Gas Specifications	Sulfur content	Custom fuel monitoring schedule Records maintained for 3 years
Nitrogen Oxides	86.0 lb/hr – CT BG (BACT 25 ppmvd @ 15% O_2) 148.3 lb/hr – CT DFO (BACT 42 ppmvd @15% O_2) 18.0 lb/hr – DB NG (BACT 0.1 lb/MMBtu) 104.0 lb/hr – CT&DB NG 368.0 TPY (synthetic cap of NOX) (36.7 TPY reduction)	Annual Stack Test (Gas only) Quarterly Excess Emissions Report Monitoring of water-fuel ration
Particulate Matter	5.0 lb/hr – CT NG (BACT 25 ppmvd @ 15% O_2) 20.0 lb/hr – CT DFO (BACT 42 ppmvd @15% O_2) 2.6 lb/hr – DB NG (BACT 0.1 lb/MMBtu) 7.6 lb/hr – CT&DB NG 27.0 TPY (worst case fuel firing-by permit, Table 1a)	Compliance based on meeting VE limit Annual test required if VE exceeds 10%
Sulfur Dioxide	87.6 lb/hr (0.1% sulfur) – CT DFO 21.0 TPY	Fuel Oil Analysis (if>400 hr/yr oil use) Quarterly Excess Emissions Report
Carbon Monoxide	56.5 lb/hr – CT NG (BACT 28 ppmvd) 34.5 lb/hr – CT DFO (BACT 18 ppmvd) 36.0 lb/hr – DB NG (BACT 0.2 lb/MMBtu) 92.5 lb/hr – CT&DB NGa) 337 TPY Synthetic cap for CO) (13.3 TPY reduction)	Stack Test Upon Permit Renewal (Gas only)
VOC	3.4 lb/hr – CT NG 8.7 .b/hr – CT DFO 5.4 lb/hr – DB NG 8.8 lb/hr – CT&DB NG 30.8 TPY (worst case fuel firing-by permit, Table 1a)	Based on demonstration of compliance with CO emission limit
Visible Emissions	10% opacity	Annual Visible Emissions Test
Mercury	0.0003 TPY – CT DFO	Requesting Deletion of Reporting
Lead	0.0008 TPY – CT DFO	Requesting Deletion of Reporting
Beryllium	0.0002 TPY – CT DFO	Requesting Deletion of Reporting
Sulfuric Acid Mist	0.80 TPY – CT DFO	Requesting Deletion of Reporting

Notes

CT=combustion turbine; DB=duct burner; DFO=distillate fuel oil; NG=natural gas

All stack testing must be conducted separately during operation of the CT only, and combined operation of the CT and HRSG duct burner.

Nitrogen oxide and visible emissions test must be conducted annually prior to September 9 of each year.
A copy of the fuel/water continuous monitoring data must be submitted with each stack test report.

Annual Report

An annual operation report must be submitted on the form supplied by FDEP on or before March 1 of each year

ATTACHMENT PC-FI-E15
COMPLIANCE STATEMENT

ATTACHMENT PC-FI-E15

COMPLIANCE STATEMENT

I, the undersigned, am the responsible official as defined in Chapter 62-213, F.A.C., of the Title V source for which this report is being submitted. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made and data contained in this report are true, accurate, and complete.

Signature, Responsible Official

6/6/03
Date

ATTACHMENT PC-E01-D
LIST OF APPLICABLE REGULATIONS

Emission Unit Applicable Requirement List - Pasco Cogeneration - Combustion Turbine

Chapter 210 Stationary Sources -- General Requirements	
62-210.650	Circumvention.
62-210.700	Excess Emissions; (1); (4); (6)

Chapter 204 Air Pollution Control -- General Provisions (State Only)	
62-204.800	Standards of Performance for New Stationary Sources (NSPS).
	(7) General Provisions Adopted.
	(b) The following Standards of Performance for New Stationary Sources contained in 40 CFR 60, revised as of July 1, 1994, or later as specifically indicated.
	4. 40 CFR 60.40c Subpart Dc, Small Industrial - Commercial - Institutional Steam Generating Units.
	37. 40 CFR 60.330 Subpart GG, Stationary Gas Turbines.
	(e) Appendices Adopted. The following appendices of 40 CFR Part 60, revised as of July 1, 1994 or later as specifically indicated, are adopted and incorporated by reference.
	1. 40 CFR 60 Appendix A, Test Methods, are adopted by reference.
	2. 40 CFR 60 Appendix B, Performance Specifications.
	5. 40 CFR 60 Appendix F, Quality Assurance Procedures.

Chapter 297 Stationary Sources -- Emission Monitoring	
62-297.310	General Test Requirements.
	(1) Required Number of Test Runs.
	(2) Operating Rate During Testing (a) Reserved for CTs
	(4) Applicable Test Procedures. (a)1.; (b); (c); (d); (e)
	(5) Determination of Process Variables.
	(6) Required Stack Sampling Facilities (a); (c); (d); (e); (f); (g)
	(7) Frequency of Compliance Tests (a)1., 3.; 4.b, 5., 9.
	(8) Test Reports.

Part 60 - EPA Regulations on Standards of Performance for New Stationary Sources (CT)	
Subpart A — General Provisions	
60.7	Notification and record keeping. (b); (f)
60.8	Performance tests. (e)
60.11	Compliance with standards and maintenance requirements. (a), (b), (c), (d), (e)
60.12	Circumvention.
60.13	Monitoring requirements. (a), (b), (d)
Subpart GG — Standards of Performance for Stationary Gas Turbines	
60.332	Standard for nitrogen oxides. (a) (1)
60.333	Standard for sulfur dioxide.
60.334	Monitoring of operations.
60.335	Test methods and procedures.

Part 60 - EPA Regulations on Standards of Performance for New Stationary Sources (Duct Burner)	
Subpart A — General Provisions	
60.7	Notification and record keeping (b); (f).
Subpart Dc — Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	
60.48c	Reporting and Record keeping; (g).

ATTACHMENT PC-E01-E14
EMISSION POINT COMMENT

Table PC-E01-E14. Design Information and Stack Parameters for Pasco Cogen Combustion Turbine Units 1 and 2 Simple/Combin

Data	Gas Turbine (Each Unit)	
	Combined Fuel Firing	
	No. 2 Fuel Oil	Natural Gas
General		
Power (MW)	38.9	39.5
Heat Input (MMBtu/hr)	424	423
Estimated Heat Rate (Btu/kwh)	10,900	10,709
Annual Capacity Factor (%)	100	100
Hours of Operation	240	8,520
Volume Flow (acfm) = [(Mass Flow (lb/hr) x 1,545 x (Temp. (°F)+ 460°F)] ÷ [Molecular weight x 2116.8] ÷ 60 min/hr		
Mass Flow (lb/hr)	1,081,322	1,079,779
Temperature (°F)	815	806
Molecular Weight	28.38	28.03
Volume Flow (acfm)	590,949	593,257
Volume Flow (dscfm)= [(Mass Flow (lb/hr) x 1,545 x (68°F + 460°F)] ÷ [Molecular weight x 2116.8] ÷ 60 min/hr x [(1- Moisture(%)/10		
Mass Flow (lb/hr)	1,081,322	1,079,779
Temperature (°F)	68	68
Molecular Weight	28.38	28.03
Moisture (% Vol.)	9.30	11.00
Volume Flow (dscfm)	221,963	220,208
HRSG Stack Data		
Stack Height (ft)	100	100
Diameter (ft)	11.0	11.0
Volume Flow (acfm) from HRSG = [Volume Flow (acfm) from CT x (HRSG temp.(°F) + 460°F)] ÷ [CT temp.(oF) + 460oF]		
Volume Flow (acfm) from CT	590,949	593,257
CT Temperature (°F)	815	806
HRSG Temperature (°F)	232	232
Volume Flow (acfm) from HRSG	320,735	324,276
Velocity (ft/sec) = Volume flow (acfm) from HRSG ÷ [((diameter)²÷ 4) x 3.14159] ÷ 60 sc/min		
Volume Flow (acfm) from HRSG	320,735	324,276
Diameter (ft)	11.0	11.0
Velocity (ft/sec)	56.2	56.9

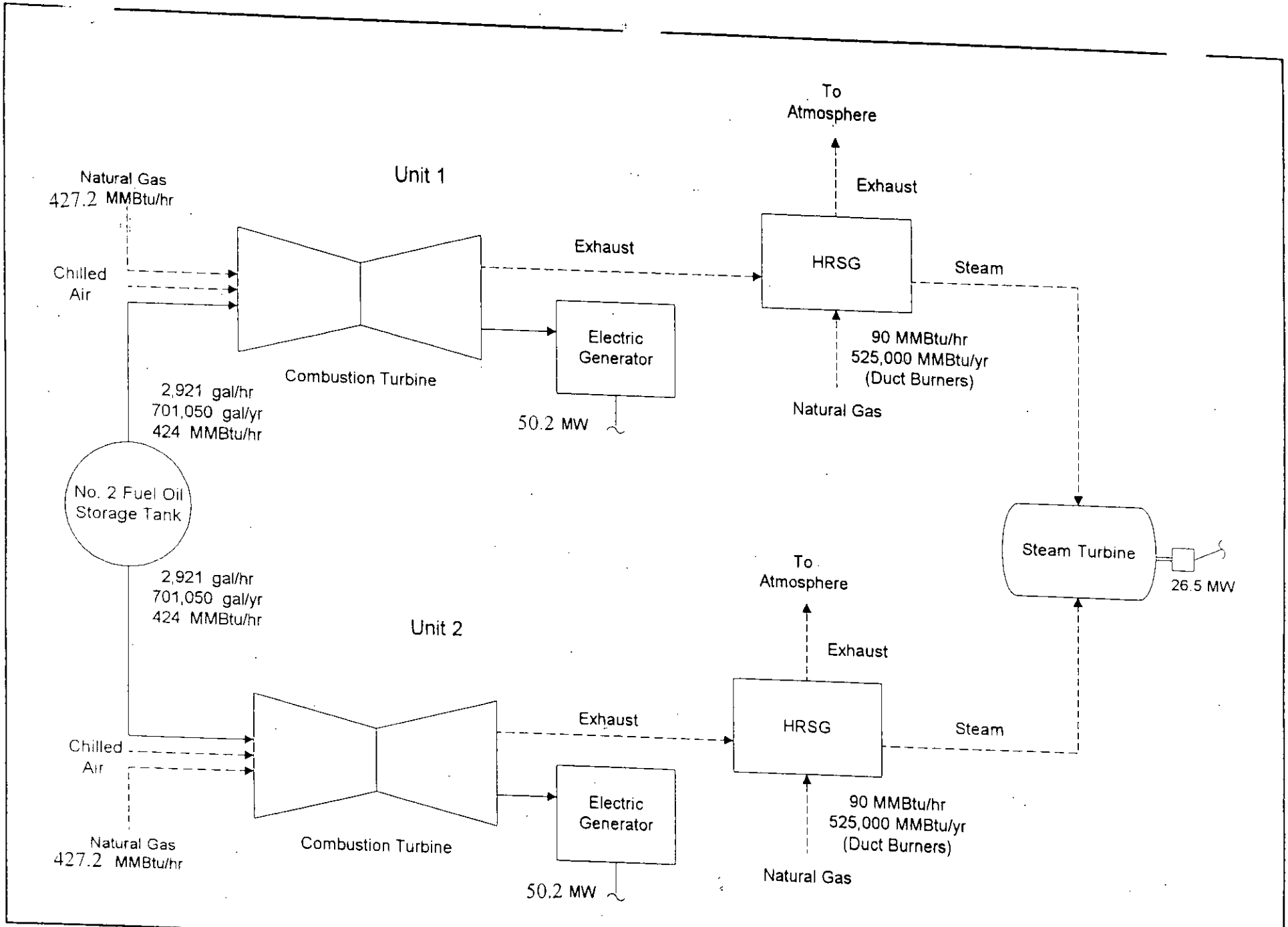
Source: Pasco Cogen, Ltd. Air construction permit application, KBN Engineering, 1991; Air Operating Permit, issued 7/20/94.

Notes:

Universal gas constant = 1,545 ft-lb(force)/°R;

Atmospheric pressure = 2,116.8 lb(force)/ft²

ATTACHMENT PC-E01-L1
PROCESS FLOW DIAGRAM



Attachment PC-FD-3.VSD
Pasco Cogeneration, Ltd.
Process Flow Diagram
Dade City, Florida

Process Flow Legend
Solid / Liquid
Gas

Emission Unit: Facility
Process Area: Facility
Filename: PC-FD-3.VSD
Latest Revision Date: 4/17/03

ATTACHMENT PC-E01-L2
FUEL ANALYSIS OR SPECIFICATION

FGT
Last Updated 4/8/03 9:56

Station Name	Total Sulfur Previous Day Avg ppm 04/07/03	Total Sulfur Previous Day Avg Grains/hcf 04/07/03
Perry 36" Stream #1 (Pasco)	0.195	0.012
Perry 30" Stream #2	0.326	0.020
Perry 24" Stream #3	0.264	0.017
Brooker 24" Stream	5.853	0.366

Florida Gas makes no warranty or representation whatsoever as to the accuracy of the information provided.
This information is provided on a best efforts basis and is an estimate.
The information is not used for billing purposes.
Florida Gas is not responsible for any reliance on this information by any party.

Stream History

Gas Day	Index	Perry 36" Stream #1 15SA36PSUL.A Avg ppm	Pasco ↓ Perry 36" Stream #1 Avg Grains/hcf	Perry 30" Stream #2 15SA30PSUL.A Avg ppm	Perry 30" Stream #2 Avg Grains/hcf	Perry 24" Stream #3 15SA24PSUL.A Avg ppm	Perry 24" Stream #3 Avg Grains/hc
04/06/03	33	0.195	0.012	0.326	0.020	0.264	0.017
04/05/03	32	0.148	0.009	0.269	0.017	0.256	0.016
04/04/03	31	0.087	0.005	0.147	0.009	0.127	0.008
04/03/03	30	1.263	0.079	2.329	0.146	2.295	0.143
04/02/03	29	4.056	0.254	6.917	0.432	6.694	0.418
04/01/03	28	3.563	0.223	5.568	0.348	5.356	0.335
03/31/03	27	4.035	0.252	4.458	0.279	4.323	0.270
03/30/03	26	3.923	0.245	4.382	0.274	4.442	0.278
03/29/03	25	3.731	0.233	3.650	0.228	3.945	0.247
03/28/03	24	2.781	0.174	3.083	0.193	3.213	0.201
03/27/03	23	2.917	0.182	3.021	0.189	2.874	0.180
03/26/03	22	2.876	0.180	2.945	0.184	2.935	0.183
03/25/03	21	2.624	0.164	3.412	0.213	3.413	0.213
03/24/03	20	2.974	0.186	3.246	0.203	3.151	0.197
03/23/03	19	2.220	0.139	2.550	0.159	3.151	0.197
03/22/03	18	2.520	0.157	3.066	0.192	3.151	0.197
03/21/03	17	1.907	0.119	2.409	0.151	3.151	0.197
03/20/03	16	2.254	0.141	2.574	0.161	3.151	0.197
03/19/03	15	2.233	0.140	2.592	0.162	3.151	0.197
03/18/03	14	2.190	0.137	2.488	0.156	3.151	0.197
03/17/03	13	1.847	0.115	2.585	0.162	3.151	0.197
03/16/03	12	2.257	0.141	3.196	0.200	3.151	0.197
03/15/03	11	2.485	0.155	3.340	0.209	3.151	0.197
03/14/03	10	2.388	0.149	3.024	0.189	3.151	0.197
03/13/03	9	2.601	0.163	3.490	0.218	3.151	0.197
03/12/03	8	3.081	0.193	3.330	0.208	3.151	0.197

03/11/03	7	3.709	0.232	4.560	0.285	3.151	0.197
03/10/03	6	4.285	0.268	4.992	0.312	3.151	0.197
03/09/03	5	4.296	0.269	4.809	0.301	3.151	0.197
03/08/03	4	4.609	0.288	5.177	0.324	3.151	0.197
03/07/03	3	4.648	0.290	5.262	0.329	3.151	0.197
03/06/03	2	4.885	0.305	5.925	0.370	3.151	0.197
03/05/03	1	4.820	0.301	5.719	0.357	3.151	0.197

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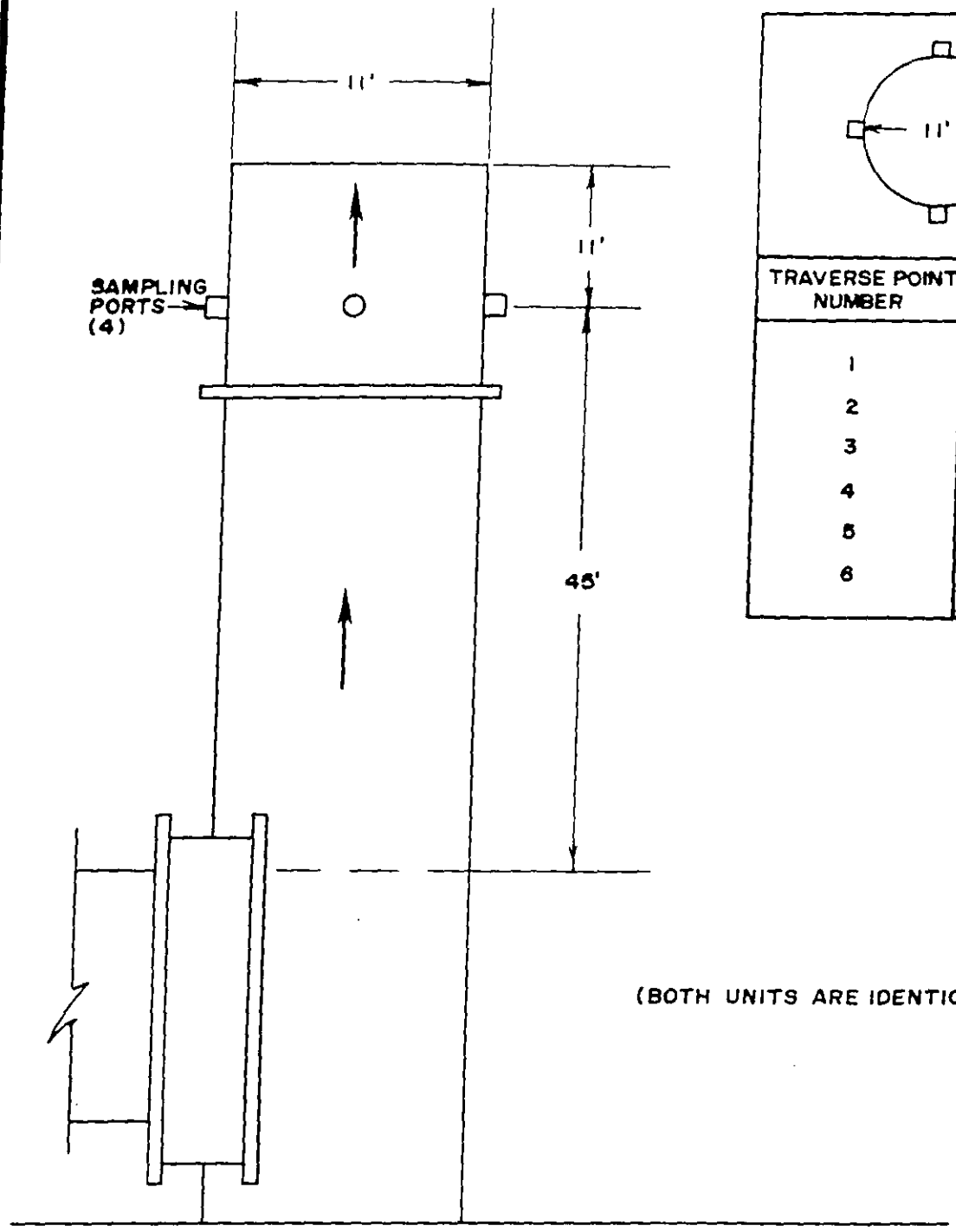
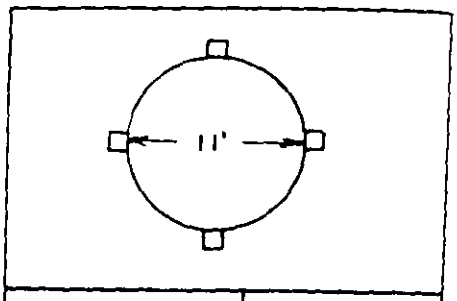
ATTACHMENT PC-E01-L4
DESCRIPTION OF STACK SAMPLING FACILITIES

ATTACHMENT PC-EU1-L4
DESCRIPTION OF STACK SAMPLING FACILITIES

Pasco Cogen is required by Permit AC51-196460 to perform annual stack testing for emissions from the combustion turbine in accordance with standard EPA reference methods. Pursuant to FAC 62-297.310(7), the annual stack test required is performed with the required stack sampling facilities. As specified by rule, the permanent test facilities meet the following:

- The exhaust stack is circular with a diameter of 11 feet.
- The sampling ports have a minimum effective diameter of 3 inches.
- The location of the sampling ports meet FAC 62-297.310(6) requirements (i.e., 2 stack diameters downstream and 0.5 stack diameters upstream of flow disturbances).
- There are four sampling ports, 90 degrees apart have been installed on the circular stack.
- The working platform is at least 24 square feet in area, at least 3 feet wide, extends 180 degrees around the stack, has safety rails, toeboards, and a hinged floor opening attached to it. There are no obstructions 14 inches below the port and 6 inches on either side of the port.
- The platform access ladder is equipped with a safety apparatus.





TRAVERSE POINT NUMBER	INCHES INSIDE STACK WALL
1	2.77
2	8.84
3	15.54
4	23.36
5	33.00
6	46.99

(BOTH UNITS ARE IDENTICAL.)

NOTE: NOT TO SCALE

FIGURE 1.
SAMPLING POINT LOCATION
UNITS 1 & 2
PASCO **COGEN LIMITED**
DADE CITY **, FLORIDA**

AIR CONSULTING
and
ENGINEERING

ATTACHMENT PC-E01-L6
PROCEDURES FOR STARTUP AND SHUTDOWN

ATTACHMENT PC-E01-L6

PROCEDURES FOR STARTUP/SHUTDOWN

Startup for the combustion turbines begins with "lighting off" of the machines on natural gas or distillate oil. A period of from two to several hours is required to allow metal temperatures in the heat recovery steam generator (HRSG) and in the steam turbine to equilibrate without undue metal stress, before putting the unit "on the line" and sending electrical power to the grid.

The combustion turbines (CTs) utilize water injection for NO_x control during startup and shutdown. Emissions are continuously monitored by Continuous Monitor in System (CMS) for water to fuel ratio. If excess emissions are encountered during startup or shutdown, the nature and cause of any malfunction is identified, along with the corrective actions taken or preventative measures adopted. Corrective actions may include switching the unit from automatic (remote) to local control, or changing fuel combination(s). Best Operating Practices are adhered to and all efforts to minimize both the level and duration of excess emissions are undertaken.

Shutdown is performed by reducing the unit load (electrical production) to a minimum level, opening the breaker (which disconnects the unit from the system electrical grid), shutting off the fuel and coasting down to stop. The CT is then put "on turning gear" to prevent possible disfiguration of the turbine components.

ATTACHMENT PC-E01-10
ALTERNATIVE MEDTHODS OF OPERATION

ATTACHMENT PC-E01-L10

ALTERNATE METHODS OF OPERATION
GAS TURBINE UNITS 1 AND 2

The combustion turbine units are permitted to burn either natural gas or No. 2 fuel oil with a sulfur content not to exceed 0.1 percent (by weight). The units may operate continuously (i.e., 8,760 hours per year) on natural gas, or utilizing No. 2 fuel oil for no more than 701,050 gal/yr for each unit. The units may operate at various load conditions. Routine maintenance includes injection of a turbine wash chemical to clean the inlet turbine (compressor). These chemicals consist of detergents and surfactants.

ATTACHMENT PC-E01-E14

DESIGN INFORMATION AND STACK PARAMETERS FOR PASCO COGEN COMBUSTION UNITS 1 AND 2 – REFLECTING DATA SUBMITTED 05/20/96 VS. DATA CHANGES DUE TO THE INDIVIDUAL LM-6000 UNIT UPRATINGS

Table PC-E01-E14: Design Information and Stack Parameters for Units 1 and 2 (per unit)

Data	No. 2 Fuel Oil (05/20/96)	Combined Fuel Firing: Natural Gas (05/20/96)	Natural Gas (04/17/03 uprate request)
General Information:			
• Power (MW)	38.9	39.5	50.2
• Heat Input (MMBtu/hr.)	424	423	427.2
• Annual Capacity Factor (%)	100	100	100
• Hours of Operation	240 (max.)	8760 (max.)	8760 (max.)
Volume Flow (acfm) = [(Mass flow (lb/hr) x 1,545 x (Temp (°F) + 460°F)] / {Molecular weight x 2116.8} / 60 min/hr			
• Mass Flow (lb/hr)	1,081,322	1,079,779	1,083,240
• Temperature (°F)	815	806	825
• Molecular Weight	28.38	28.03	28.13
• Volume Flow (acfm)	590,949	593,257	603,915
Volume Flow (dscfm) = [(Mass flow (lb/hr) x 1,545 x (68 °F + 460°F)] / {Molecular weight x 2116.8} / 60 min/hr x [(1 – Moisture (%)/10)]			
• Mass Flow (lb/hr)	1,081,322	1,079,779	1,083,240
• Temperature (°F)	68	68	68
• Molecular Weight	28.38	28.03	28.13
• Moisture (% vol.)	9.3	11.0	10.4
• Volume Flow (acfm)	221,963	220,208	245,565

Data	No. 2 Fuel Oil (05/20/96)	Natural Gas (05/20/96)	Natural Gas (04/17/03 uprate request)
HRSG Stack Data:			
• Stack Height (ft)	100	100	100
• Diameter (ft)	11.0	11.0	11.0

Volume Flow (acfm) from HRSG = [Vol. Flow (acfm) from CT x (HRSG temp. (°F) + 460°F)] / CT temp (°F) + 460°F]

• Volume Flow (acfm) from CT	590,949	593,257	603,915
• CT Temperature (°F)	815	806	825
• HRSG Temperature (°F)	232	232	232
• Volume Flow from the HRSG (acfm)	320,735	324,276	325,221

Velocity (ft/sec) = Volume Flow (acfm) from HRSG / [((diameter of stack)^2 / 4) x 3.14159] / 60 sec/min

• Volume Flow (acfm) from HRSG	320,735	324,276	325,221
• Stack Diameter (ft)	11.0	11.0	11.0
• Velocity (ft/sec)	56.2	56.9	57.0

ATTACHMENT PC-E02-B6
EMISSIONS UNIT COMMENT

TRIVIAL ACTIVITIES

The trivial activities identified in this application are provided for information only and are identified as examples of, but not limited to, the trivial activities identified by the Division of Air Resources Management's (DARM's) guidance. It is understood that such activities do not have to be included in with the Title V Application. The trivial activities identified herein are consistent, in terms of amounts of emissions and types, with those activities listed in DARM's guidance.

NOTIFICATION OF TEMPORARY EXEMPTIONS

Pursuant to Rule 62-210.300(3)(b)1., notice is herein provide that the emissions units listed below are not subject to a permit issued by the Department of Environmental Protection and are exempt from permitting until a final determination is made under the Title V permitting requirements (Rule 62-213 F.A.C.). These units would not have triggered review under Rules 62-212.400 or 62-212.500 or any new source performance standard listed in Rule 62-204.800 F.A.C.

Attachment PC-E02-B6

Area	Emission Unit Description	Number of Units	Type/ Pollutant	Applicable Regulations
CT/ST BUILDING AREA	CT Lube Oil Vents	2	Vent/VOC	Trivial
	CT Lube Oil Storage Tank	2	Vent/VOC	Trivial
	ST Lube Oil Tank Vent	1	Vent/VOC	Trivial
	ST Lube Oil Filter Vent	1	Vent/VOC	Trivial
	Electric Generator Mineral Oil Vent	2	Vent/VOC	Trivial
	Turbine Cleaning Operation	2	Stack/VOC	Unregulated
	Water Wash Tanks	3	Fug.	Trivial
	Turbine Cooling Air	2	Vent	Trivial
	Various Pumps	Multiple	Fug.	Trivial
	Miscellaneous Drains Tank	6	Vent	Trivial
	Hydraulic Equipment	4	Fug.	Trivial
HRSG	Natural Gas Relief Valves	14	Vent	Trivial
	Various Steam Vents & Pressure Relief Valves	Various	Vents	Trivial
	Nitrogen Lines	3	Fug.	Trivial
HRSG AREA	Blowdown Quench Tank	3	Vent	Trivial
	Blowdown Flash Tank	1	Vent	Trivial
	Various Pumps (feedwater, and chemical feed)	Multiple	Fug.	Trivial
	CEM Equipment & Calibration Gas Venting	2 Systems	Fug.	Trivial
	Fuel Oil Storage Tank 170,000 gal capacity	1	Vent/VOC	Regulated/NSPS Kb
WATER TREATMENT (BOILER,WASTEWATER)	Raw Water/Fire Water Storage Tank 376,012 gal capacity	1	Fug.	Trivial
	Demin-Filter Holding Tank	1	Fug.	Unregulated
	Chlorine Cylinders 150 lb each	6	Valve HAP	Unregulated
	Sulfuric Acid (H2SO4) Tank 6,016 gal capacity	1	Fug.	Unregulated
	Boiler Feedwater Chemical Treatment Tanks	Multiple	Fug.	Unregulated
	Sodium Hydroxide (NaOH) Tank 6,610 gal capacity	1	Fug.	Trivial
	Brine Tank 9,306 gal capacity	1	Fug.	Trivial

Attachment PC-E02-B6

Area	Emission Unit Description	Number of Units	Type/ Pollutant	Applicable Regulations
	Brine Containment Tank 16,545 gal capacity	1	Fug.	Unregulated
	Chilled Water Storage Tank 25,000 gal capacity	1	Fug.	Trivial
	RO Surge Tank 10,857 gal capacity	1	Fug.	Trivial
	Weak Waste Tank 151,222 gal capacity	1	Fug.	Trivial
	Condensate Return Tank 25,000 gal capacity	1	Fug.	Trivial
	Demin Water Storage Tank 102,000 gal capacity	1	Fug.	Trivial
	Decarbonator/Degasifier Removes CO2 from raw water	1	Fug.	Trivial
	Equalization Tank 22,000 gal capacity	1	Fug.	Trivial
	Neutralization Basin and Pumps	1	Fug.	Trivial
	Wastewater Cooling Tower	1	Fug.	Trivial
	Filter Press	1	Fug.	Trivial
	Various Pumps	Multiple	Fug.	Trivial
	Crystallizer	1	Fug.	Trivial
	Soda Ash Handling	1	Fug/PM	Trivial
COOLING TOWER	Fresh Water Cooling Tower	1	Vents	Unregulated
	Nalco 7342 (NaBr) Tank 492 lb capacity	1	Fug.	Trivial
	Cooling Water Pumps	Multiple	Fug.	Trivial
	Steam Condensing Unit	1	Fug.	Trivial
	Brine Cooling Tower	1	Fug. PM	Unregulated
CHILLER AREA	Refrigeration Chillers	3	Fug.	Unregulated
	Chiller Condensate Tank	1	Vent	Trivial
	Various pumps	Multiple	Fug.	Trivial
GENERAL SITE	Surface Coating < 6.0 gal/day	NA	Fug.	Exempt by Rule
	Sewer Vents	Multiple	Vent/Fug	Trivial
	Brazing, Soldering or Welding	NA	Fug.	Trivial/Exempt by Rule
	Plant Grounds Maintenance	NA	Fug.	Trivial

Attachment PC-E02-B6

Area	Emission Unit Description	Number of Units	Type/ Pollutant	Applicable Regulations
	Routine Maintenance	NA	Fug.	Trivial
	Non-halogenated Solvent	NA	Fug.	Unregulated
	Emergency Generators 1,275 kW Diesel	2	Stack	Unregulated
	Diesel Fuel Storage Tanks (300-400 gal capacity)	2	Vent/VOC	Unregulated
	Diesel Fire Pump 216 hp; 1,750 rpm	1	Stack	Trivial/Exempt by Rule
	Diesel Fire Pump Water Storage Tank	1	Vent/VOC	Trivial
	Diesel Powered Portable Welder/ Air Compressor	1	Vent/VOC	Trivial
	Salt Cake Storage	NA	Fug/PM	Trivial
OFFICE SHOP AREA	Office Equipment Operation	NA	Fug.	Trivial
	Routine Repairs	NA	Fug.	Trivial
	Indoor Fugitives (grinder, drill press, etc.)	NA	Fug.	Trivial
	Degreaser Non-Halogenated Solvent	1	Fug.	Trivial
	Laboratory	1	Fug.	Trivial/Exempt by Rule
	Storage Area	NA	Fug.	Trivial
	Propane Forklift	1	Vent	Trivial
	Air Compressor	1	Vent	Trivial
	Battery Room	1	Fug.	Trivial
	CO2 Fire System (Control Room)	1 System	Fugitive	Trivial/Exempt by Rule
	Bead Blaster	1	Vent	Trivial
SWITCHYARD/ SUBSTATION AREA	Transformers and Associated Equipment	Multiple	Fug./VOC	Trivial
	Breakers-SF6	2	Fug	Trivial
PARKING LOT	Vehicles	Multiple	Exhausts	Trivial/Exempt by Rule

Note: CT = Combustion Turbine; HRSG = Heat Recovery Steam Generator; ST = Steam Turbine
Trivial reflects EPA determination as stated in the White Paper (EPA, 1995).
Exempt by Rule refers to Rule 62-210.300(3)(a)