Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

September 15, 2006

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Richard Christmas, Plant Manager
Pasco Cogeneration, Ltd.
14850 Old State Road 23
Dade City, Florida 33525

Re: Air Permit No. 1010071-002-AC
Pasco Cogeneration Plant
SPRINT Project for Combined Cycle Units 1 and 2
Extension of Air Construction Permit Expiration Date

Dear Mr. Christmas:

On August 25, 2006, the Department received your request for an extension of air construction Permit No. 1010071-002-AC for the Pasco Cogeneration Plant located in Pasco County at 14850 Old State Road 23, Dade City, Florida 33525. This permit authorized the installation of spray inter-cooling technology (SPRINT) for the pair of existing LM-6000 gas turbines (Units 1 and 2). In June of 2006, Pasco Cogeneration successfully completed all work related to the SPRINT project for Unit 2, which is now fully operational and satisfactorily performance tested. However, only the initial engineering design and drawings have been completed for Unit 1. Pasco Cogeneration expects to approve expenditures for the Unit 1 SPRINT project by the end of 2006. This work is planned for April/May of 2007, which is the next available major outage scheduled for this unit. Therefore, Pasco Cogeneration, Ltd. requests a 1-year extension of the air permit to allow completion of the SPRINT project for Unit 1 in 2007.

Determination: The SPRINT project will allow an increase in the maximum power production for Units 1 and 2 from approximately 42.5 to 50.2 MW through the use of spray inter-cooling technology (SPRINT). The Department originally concluded that SPRINT would have a minimal impact on emissions. The air construction permit requires the plant to report emissions for 5 years after installing SPRINT to ensure that the project did not result in a PSD significant net emissions increase. This conclusion remains valid for the permit extension and the Department approves the request. The expiration date is hereby extended from December 1, 2006 to December 1, 2007. A copy of this letter shall be filed with the referenced permit and shall become part of the permit. This permitting decision is issued pursuant to Chapter 403, Florida Statutes.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (F.A.C.). The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Department of Environmental Protection's Bureau of Air Regulation is the Permitting Authority responsible for making a determination for this project. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite #4, Tallahassee, Florida 32301. The Permitting Authority's mailing address is: 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by the applicant or any of the parties listed below must be filed within fourteen (14) days of receipt of this Written Notice of Intent to Issue Air Permit. Petitions filed by any persons other than those entitled to written notice

under Section 120.60(3), F.S., must be filed within fourteen (14) days of receipt of this Written Notice of Intent to Issue Air Permit, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within fourteen (14) days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when each petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Written Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available in this proceeding.

Effective Date: This permitting decision is final and effective on the date filed with the clerk of the Department unless a petition is filed in accordance with the above paragraphs or unless a request for extension of time in which to file a petition is filed within the time specified for filing a petition pursuant to Rule 62-110.106, F.A.C., and the petition conforms to the content requirements of Rules 28-106.201 and 28-106.301, F.A.C. Upon timely filing of a petition or a request for extension of time, this action will not be effective until further order of the Department.

Appeal: Any party to this permitting decision (order) has the right to seek judicial review of it under Section 120.68, F.S., by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel, Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within thirty (30) days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.

Trina Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this order was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 9/15/06 to the persons listed:

Mr. Richard Christmas, Pasco*
Mr. Tom Grace, Pasco c/o Aquila
Ms. Mara Nasca, SWD Office
Mr. Gregg Worley, EPA Region 4 Office

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

(Clerk) 9/15/06 (Date)

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Richard Christmas, Plant Manager
Pasco Cogeneration, Ltd.
14850 Old State Road 23
Dade City, Florida 33525

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) Richard Christmas | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Transfer from service label)* 7000 1670 0013 3110 1236

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	

Postmark Here

Mr. Richard Christmas, Plant Manager
Pasco Cogeneration, Ltd.
14850 Old State Road 23
Dade City, Florida 33525

PS Form 3800, May 2000 See Reverse for Instructions

7000 1670 0013 3110 1236

Memorandum

Florida Department of Environmental Protection

TO: Trina Vielhauer, Bureau of Air Regulation

FROM: Jeff Koerner, Air Permitting North

DATE: September 8, 2006

SUBJECT: Air Permit No. 1010071-002-AC
Pasco Cogeneration, Limited – LM-6000 SPRINT Project
Second Extension of Air Construction Permit Expiration Date

Attached for your approval and signature is a permit modification to extend the expiration date for the above referenced permit. In October of 2004, the original project to install SPRINT technology on the pair of existing LM6000 gas turbines was extended from December 1, 2004 to December 1, 2006. In June of 2006, Pasco Cogeneration successfully completed all work related to the SPRINT project for Unit 2, which is now fully operational and satisfactorily performance tested. However, only the initial engineering design and drawings have been completed for Unit 1. Pasco Cogeneration expects to approve expenditures for the Unit 1 SPRINT project by the end of 2006. This work is scheduled for April/May of 2007, which is the next available major outage scheduled for this unit. The installation of SPRINT is expected to result in minimal emissions impacts and the change in plans does not affect the Department's original determination. I recommend your approval and signature.

Attachments

PASCO COGEN, LTD.
NCP Dade Power, LLC., General Partner

14850 Old State Road 23 • Dade City, FL 33523
Tel (352) 523-0062 • Fax (352) 523-0572

August 23, 2006

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

RE: Pasco Cogeneration LP; Facility ID 1010071; Pasco County, Florida;
Request for One Year Extension to Construction Permit 1010071-002-AC

Dear Mr. Koerner:

The purpose of this letter is to follow-up with the conversation we had last Friday, August 18, 2006, concerning the ongoing SPRINT modification project at the Pasco Cogeneration facility and the need to secure an additional extension to the current construction permit.

The Pasco Cogeneration facility, located in Dade City, Pasco County, Florida, has a construction permit to install SPRINT units on its two LM-6000 Combustion Turbine units that is scheduled to expire on December 1, 2006. Progress on having both Combustion Turbines modified with the SPRINT technology is being made, but will not be fully completed by the current December 1, 2006 permit deadline. To successfully complete this effort, Pasco Cogeneration is requesting an additional one year extension to the construction permit. As explained below, progress is being made, but at a pace somewhat slower than originally anticipated by the project.

To date the following work evolutions have occurred or are about to occur with regard to the installation of SPRINT technology in the two Combustion Units at Pasco Cogeneration.

- As of June 6, 2006, all work on the Combustion Turbine Unit 2 SPRINT modification has been completed with the unit having been successfully tested and now fully functional.
- The drawings for the Unit 1 SPRINT modification and initial engineering for design application have been completed.
- Prior to December 1, 2006, Pasco Cogeneration and GE will complete negotiations for the second unit installation and will have secured Partnership Approvals for expenditures.
- To accept beneficial pricing from GE, the PO for purchase of the modification equipment and initial shipment of hardware must be done prior to the end of the first quarter of 2007.

- A major plant outage is scheduled for sometime in either April or May of 2007, at which time the facility will be out of service and available to have the modification components installed and the system testing completed.

Based on the time line provided above, a one year additional extension to the construction permit is anticipated to meet the project needs.

If you have any questions or concerns with regard to this request for an additional time extension to the SPRINT modification construction permit, please feel to call either Richard Christmas, Pasco Cogeneration Plant Manager, at 352-523-0062, or myself, at 775-850-2248. We look forward to hearing back from you at your earliest convenience.

For Pasco Cogeneration
Sincerely,

Thomas A. Grace, CHMM
Manager, Environmental Services

Cc: R. Christmas
J. Delgado
T. DeRocher

Koerner, Jeff

From: Thomas Grace [tgrace@caithnessenergy.com]
Sent: Wednesday, September 06, 2006 4:21 PM
To: Koerner, Jeff
Subject: FW: Scanned from TOSHIBA 09/06/2006 13:01

Attachments: DOC090606.pdf

DOC090606.pdf
(474 KB)

Jeff,

Per our earlier conversation, here are attached the scanned pages from the recent source test. Normally Pasco is not required to do CO testing annually, only every five years prior to Title V permit renewal submittal, but we had it done as a separate test on Unit 2 this time due to the SPRINT addition (see table on last page of scan). The original of this source test was submitted last month to Southwest District.

I hope this addresses your needs for the extension approval for Unit 1. If you need any further info let me know.

Thanks once again for your help.

Tom Grace
775-850-2248

-----Original Message-----
From: Caithness Energy [mailto:gpotts@cenyc.com]
Sent: Wednesday, September 06, 2006 1:01 PM
To: Thomas Grace
Subject: Scanned from TOSHIBA 09/06/2006 13:01

Scanned from TOSHIBA.
Date: 09/06/2006 13:01
Pages:10
Resolution:200x200 DPI

AIR CONSULTING AND ENGINEERING, INC.
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

BIAS CORRECTION AND EMISSION RESULTS
PASCO COGEN
CT-2 OUTLET
DADE CITY,FLORIDA
JULY 13, 2006 **CT BASE LOAD**

F-FACTOR 8710

1306-1413		Cal Gas	Pre Run		Post Run		Average		Run	Corrected			
CT ONLY		Value	Bias	Zero	Bias	Zero	Bias	Zero	Average	Value	NOx @ 15%	LB/MMBTU	LB/HR
RUN 1	NOx	24.78	24.71	0.07	24.84	0.25	24.77	0.16	26.92	26.95	24.44	0.0900	40.31
	CO	27.75	27.72	-0.04	27.84	0.01	27.78	-0.02	27.50	27.47		0.0559	25.00
	O2	13.93	13.92	-0.01	13.94	0.01	13.93	0.00	14.39	14.39			
GAS FLOW (SCFM)		7237											
HEATING VALUE:		1031	BTU/SCF										

1435-1535		Cal Gas	Pre Run		Post Run		Average		Run	Corrected			
CT ONLY		Value	Bias	Zero	Bias	Zero	Bias	Zero	Average	Value	NOx @ 15%	LB/MMBTU	LB/HR
RUN 2	NOx	24.78	24.84	0.25	24.77	0.26	24.80	0.26	27.20	27.20	24.68	0.0909	40.71
	CO	27.75	27.84	0.01	27.82	0.01	27.83	0.01	27.10	27.02		0.0550	24.61
	O2	13.93	13.94	0.01	13.90	0.01	13.92	0.01	14.39	14.40			
GAS FLOW (SCFM)		7237											
HEATING VALUE:		1031	BTU/SCF										

1552-1652		Cal Gas	Pre Run		Post Run		Average		Run	Corrected			
CT ONLY		Value	Bias	Zero	Bias	Zero	Bias	Zero	Average	Value	NOx @ 15%	LB/MMBTU	LB/HR
RUN 3	NOx	24.78	24.77	0.26	24.47	0.03	24.62	0.15	27.08	27.28	24.80	0.0914	40.9
	CO	27.75	27.82	0.01	27.82	-0.03	27.82	-0.01	27.16	27.10		0.0552	24.7
	O2	13.93	13.90	0.01	13.90	0.02	13.90	0.02	14.38	14.41			
GAS FLOW (SCFM)		7232											
HEATING VALUE:		1031	BTU/SCF										

SOURCE TEST REPORT
FOR
COMBINED CYCLE COMBUSTION TURBINES
WITH AUXILIARY DUCT BURNERS

INTEGRATED FACILITY UNITS 1 AND 2
COMPLIANCE EVALUATION
FOR
NATURAL GAS FIRING
OXIDES OF NITROGEN,
SULFUR DIOXIDE AND VISIBLE EMISSIONS

FDEP PERMIT NUMBER 1010071-003-AV

PASCO COGENERATION LIMITED
DADE CITY, FLORIDA

JULY 13-14, 2006

PREPARED FOR:

CAITHNESS ENERGY, L.L.C.
9790 GATEWAY DRIVE, STE. 220
RENO, NEVADA 89521

PREPARED BY:

AIR CONSULTING AND ENGINEERING, INC.
2106 NW 67TH PLACE, SUITE 4
GAINESVILLE, FLORIDA 32653
(352) 335-1889

424-06-04

ACE
AIR CONSULTING
& ENGINEERING, INC.

2106 N.W. 67th Place • Suite 4 • Gainesville, Florida • 32653
(352) 335-1889 FAX (352) 335-1891

REPORT CERTIFICATION

To the best of my knowledge, all applicable field and analytical procedures comply with the Florida Department of Environmental Protection requirements and all test data and plant operating data are true and correct.

Dagmar Fick

Dagmar Fick, Staff Engineer

8/14/2006

Date

EXECUTIVE SUMMARY

The annual compliance test results for the Unit 1 (EU001) and the Unit 2 (EU002) Combustion Turbines meet all mass emission requirements listed in the Florida Department of Environmental Protection (FDEP) Permit Number 1010071-003-AV. All tests were conducted on natural gas firing only. The allowable lower heating value (LHV) heat input to each unit is 424 MMBTUH. Testing was conducted at 395.0 and 405 MMBTUH, respectively, due to restrictions imposed by G.E.

Pollutant	Source	Actual Emissions	Total Plant Allowable Emissions
UNIT 1			
NO_x	CT	38.4 lbs/hr, 24 ppm,d @ 15% O_2	85.5 lbs/hr CT1 & CT2 combined 25ppm,d @ 15% O_2
	DB	0.74 lbs/hr, 0.016 lbs/MMBTU	18.0 lbs/hr DB1 & DB2 combined 0.1 lbs/MMBTU
	CT & DB	39.1 lbs/hr	103.5 lbs/hr Total
UNIT 2			
NO_x	CT	40.6 lbs/hr, 25 ppm,d @ 15% O_2	85.5 lbs/hr CT1 & CT2 combined 25ppm,d @ 15% O_2
	DB	-2.01 lbs/hr, -0.038 lbs/MMBTU	18.0 lbs/hr DB1 & DB2 combined 0.1 lbs/MMBTU
	CT & DB	38.6 lbs/hr	103.5 lbs/hr Total

Mass emission limitations are total for both units combined.

Emission results at full load are provided in Tables 1 (Unit 1) and 2 (Unit 2), which include demonstration of compliance at ISO ambient corrected NO_x emission concentrations to ensure that CFR 40 Part 60 Subpart GG emission limits are also met. ISO corrected NO_x allowable is approximately 112.5 ppm.

No visible emissions were detected from full gas turbine or full gas turbine plus full duct burner operations from both units.

SO_2 emissions based on fuel analysis were 1.05×10^{-2} for Unit 1 at 42 MW and 1.01×10^{-2} lb/hr for Unit 2 at 47.4 MW.

1.0 INTRODUCTION

On July 13 and 14, 2006 Air Consulting and Engineering, Inc. (ACE) performed annual compliance testing for Oxides of Nitrogen (NO_x) and Opacity on the exhaust stacks of the Combustion Turbines, Units 1 and 2, at Pasco Cogeneration Limited in Dade City, Florida.

The Units were tested at full load to satisfy conditions of the current Florida Department of Environmental Protection (FDEP) Title V Permit 1010071-003-AV (see Appendix A).

United States Environmental Protection Agency (EPA) Method 20 (NO_x and O_2) and Method 9 (VE) were used to determine turbine emissions with and without duct burner operation. Sulfur Dioxide (SO_2) emissions were calculated from the fuel analysis.

Mr. Warren Park of Pasco Cogeneration, Ltd. coordinated testing and provided plant production data. Mr. Tom Grace of Caithness Energy, L.L.C. served as Project Director.

2.0 SUMMARY AND DISCUSSION OF RESULTS

The facility demonstrated compliance with permit conditions. Results of the emission tests are summarized in Tables 1 and 2. The Units were fired on natural gas.

The contribution of NO_x emissions of the gas fired duct burners was determined by performing a test series with and without duct burner firing. The difference in emission rates was attributed to the duct burners.

Duct burner NO_x contributions averaged 0.016 pounds per Million BTUs (lbs/MMBTU) for Unit 1 and -0.038 lbs/MMBTU for Unit 2. The power output of the combustion turbines 1 and 2 was 42 and 47.4 megawatts (MW) with and without duct burners. Unit 2's Inlet Air Temperature and Water Flow Rates were 60.2° F and 38.0 GPM for CT operation only and 58.4° F and 38.1 GPM for CT plus Duct Burner Operations. The NO_x water to fuel ratio averaged 1.39 for both operating conditions (see Appendix F for Plant Data). The apparent negative emission rate was possibly caused by a slight increase in the water injection rate and a slight decrease in CT heat input as well as a higher inlet air temperature during the DB test. DB contribution for NO_x are difficult to accurately demonstrate due to the relative low (10%) DB contribution to the total heat input. Allowable emissions are 0.1 lbs/MMBTU NO_x.

Units 1 and 2 without duct burners averaged 23.9 and 24.6 parts per million (ppm) NO_x at 15% O_2, respectively, which is within the permitted standard of 25 ppm at 15% O_2.

To also demonstrate compliance with Federal New Source Performance Standards (NSPS) by 40CFR 60 Subpart GG, observed NO_x concentrations were first adjusted to 15% O_2 and than finally to ISO standard ambient conditions using the following equation:

$$\text{ISO } NO_x \text{ Emissions} = (NO_{xobs}\text{ppm})\left(P_{ref}/P_{obs}\right)^{0.5} e^{19(H_{obs}-0.00633)} (288°K/T_{amb})^{1.53}$$

Where:
NO_{xobs} = measured NO_x ppm at 15% O_2
P_{ref} = reference combustor inlet absolute pressure at 101.3 kilopascal ambient pressure (29.92 in. Hg)
P_{obs} = measured combustor inlet absolute pressure at test ambient pressure (actual barometric pressure in in. Hg)
H_{obs} = specific humidity at ambient air at test (g H_2O/g air)
T_{amb} = temperature of ambient air at test
e = 2.718 - transcendental constant

Allowable NO_x emissions for NSPS are approximately 112.5 ppm @ ISO ambient conditions. Both units were in compliance with this standard.

Table 1. Emission Summary
Unit 1 Combustion Turbine - Gas Fired
Pasco Cogeneration, Ltd.
Dade City, Florida
July 14, 2006

Run Number	Time	Oxygen %	NOx Emissions ppm	ppm 15% O2	ppm @ISO	lbs/hr	lbs/MMBTU	COMBUSTION TURBINE Gas Flow scfm	CT Heat Input MMBTUH HHV	MMBTUH LHV	DUCT BURNERS Gas Flow scfm	Heat Input MMBTUH HHV	CT + DB Heat Input MMBTUH HHV	NOx Contr. lbs/MMBTU
Full Load CT only at 41.9 MW														
1	1113-1222	14.28	26.79	23.87	31.60	38.45	0.0879	7076	437.3	395.5	NA	NA	NA	NA
2	1238-1338	14.28	26.58	23.68	30.60	38.08	0.0872	7064	436.6	394.8	NA	NA	NA	NA
3	1355-1455	14.28	26.96	24.01	31.30	38.60	0.0885	7059	436.2	394.6	NA	NA	NA	NA
Average	—	14.28	26.78	23.85	31.17	38.38	0.0879	7066	438.4	395.0	NA	NA	NA	NA
Full Load CT at 42.0 MW with Duct Burner														
1	1513-1613	13.40	27.74	21.82	NA	38.75	0.0804	7060	436.3	394.6	740	45.7	482.1	0.007
2	1632-1732	13.41	27.99	22.05	NA	39.30	0.0812	7081	437.6	395.8	746	46.1	483.7	0.026
3	1746-1847	13.38	28.28	22.19	NA	39.30	0.0817	7037	434.9	393.4	750	46.4	481.3	0.015
Average	—	13.40	28.00	22.02	NA	39.12	0.0811	7059	436.3	394.6	745	46.1	482.3	0.016

Natural Gas Fd-Factor = 8710 MMBTU/dscf *MW NOx = 46 lbs/lb-mole*
lbs/hr = ppm(2.595 x 10^E-9)MW (20.9/20.9-%O2)(Fd)(Heat Input HHV)
Heat Input HHV = (gas flow)(1030 dry Btu/cf)(60 min/hr)/10E6

SO2 Emissions (Subpart GG NSPS) = 1.05E-02 lbs/hr 0.299 gr/hcf

Allowable Emissions
NOx =25 ppmvd @ 15%O2
DB NOx = 0.1 lbs/MMBTU

Table 2. Emission Summary
Unit 2 Combustion Turbine - Gas Fired
Pasco Cogeneration, Ltd.
Dade City, Florida
July 13, 2006

Run Number	Time	Oxygen %	NOx Emissions ppm	ppm 15% O2	ppm @ISO	lbs/hr	lbs/MMBTU	COMBUSTION TURBINE Gas Flow scfm	CT Heat Input MMBTUH HHV	MMBTUH LHV	DUCT BURNERS Gas Flow scfm	Heat Input MMBTUH HHV	CT + DB Heat Input MMBTUH HHV	NOx Contr. lbs/MMBTU
Full Load CT only at 47.4 MW														
1	1306-1413	14.39	26.95	24.44	32.90	40.31	0.0900	7237	447.7	405.0	NA	NA	NA	NA
2	1435-1535	14.40	27.20	24.68	30.30	40.71	0.0909	7237	447.7	405.0	NA	NA	NA	NA
3	1552-1652	14.41	27.28	24.80	30.30	40.90	0.0914	7232	447.4	404.7	NA	NA	NA	NA
Average	---	14.40	27.14	24.64	31.17	40.64	0.0908	7235	447.6	404.9	NA	NA	NA	NA
Full Load CT at 47.4 MW with Duct Burner														
1	1717-1817	13.38	26.82	21.05	NA	38.72	0.0776	7231	447.3	404.6	838	51.9	499.2	-0.031
2	1830-1930	13.40	26.62	20.94	NA	38.56	0.0771	7234	447.5	404.8	849	52.5	500.0	-0.041
3	1944-2044	13.43	26.51	20.93	NA	38.60	0.0771	7235	447.6	404.8	847	52.4	499.9	-0.044
Average	---	13.40	26.65	20.97	NA	38.63	0.0773	7233	447.5	404.8	845	52.3	499.7	-0.038

Natural Gas Fd-Factor = 8710 MMBTU/dscf ***MW NOx = 46 lbs/lb-mole***
lbs/hr = ppm(2.595 x 10^E-9)MW (20.9/20.9-%O2)(Fd)(Heat Input HHV)
Heat Input HHV = (gas flow)(1031 dry Btu/cf)(60 min/hr)/10E6

SO2 Emissions (Subpart GG NSPS) = 1.01E-02 lbs/hr 0.279 gr/hcf

Allowable Emissions
NOx =25 ppmvd @ 15%O2
DB NOx = 0.1 lbs/MMBTU

Actual combined mass emissions for both turbines are 79.0 lbs/hr NO_x at a total heat input of 799.9 MMBTUH (LHV). Combined mass emissions with duct burners are 77.8 lbs/hr NO_x at a total heat input of 799.4 MMBTUH (LHV).

Mass emissions for in pounds per hour were calculated using the actual heat input and the pollutant concentration.

Sulfur Dioxide (SO_2) emissions were determined by fuel analysis performed by the SGS North America, Inc.. SO_2 emissions based on 4.470 ppmv (7/13/06) and 4.788 ppmv (7/14/06) Sulfur content averaged 2.06×10^{-2} lbs/hr for both Units combined (see Appendix F for fuel analysis).

Visible emission tests were conducted on both units during turbine operation only and combined turbine and duct burner operation. Visible emissions on both turbine exhaust stacks at both conditions averaged 0.0 percent opacity for the highest six minute period of each test (see Appendix D for VE data). Permitted emissions are 10 percent opacity.

Gaseous emission data with data logger results and strip chart copies are provided in Appendices B and C, respectively.

3.0 PROCESS DESCRIPTION AND OPERATION

The Pasco Cogeneration Limited facility consists of two GE LM6000 PA combustion gas turbine generating sets with a nominal generating capacity of 42 MW each. Each turbine is exhausted through a Heat Recovery Steam Generator (HRSG) with supplemental duct burner firing. The steam produced by the HRSG is exhausted through a common steam turbine generator originally rated for 26.5 MW. The duct burners are permitted for up to 90 MMBTU heat input each. The gas turbines can be fired on either natural gas or oil. The duct burners are fired only with natural gas. The gas turbines have a chiller system, which maintains inlet combustion air at 51°F to 58°F and 100% relative humidity year round. Water is injected at the turbine combustor ring to reduce NO_x emissions.

Unit 2 is equipped with a "Sprint" system that injects atomized water in the combustor inlet. This increases power and further reduces NO_x.

During the compliance test the Units generated 42 MW (Unit 1) and 47.4 MW (Unit 2) at full load (see Appendix F for plant production data).

ESN 185-103 GAS TURBINE 2

45.00 TO 50.00 3 One Hour runs

DATE: 08/11/06

TAKE READINGS EVERY 15 MINUTES DURING THE TEST

					YOKAGOWA		PLANT METERS								ACE							
	TIME	INLET AIR T2	GTMW	NOX WATER		TURBINE GAS FLOW		TURBINE GAS FLOW		NOX RAMP	WATER/FUEL		NOX PPH	NOX PPH	CO2 PPM	NOX PPM	% O2	CO2 PPM	NOX PPM	P0	Plant Barom	Airport Barom	Amb
				TOTALIZER GALLONS	FLOW GPM	TOTALIZER SCF	FLOW SCFM	TOTALIZER KSCF	FLOW KSCFH	NETCON	RATIO PLT MTR	RATIO DCS	NETCAL	DCS	UNCORRECTED			CORRECTED		Pres	Pres	Pres	Temp
	13:05	60.00	47.40	21,376,871.00	38.10	10592.70	7249.00	85559.00	434.40	1.000		1.39			N/A	26.84	14.39	27.60	24.31	14.42	14.79	14.79	91.80
	13:20	59.50	47.40	21,377,412.00	38.00	11581.10	7250.00	85634.00	434.30	1.000		1.39			N/A	26.91	14.40	27.23	24.40	14.41	14.79	14.79	92.50
	13:36	60.20	47.40	21,377,969.00	38.10	12634.00	7252.00	85742.00	434.12	1.000		1.39			N/A	26.89	14.41	27.38	24.43	14.41	14.79	14.79	92.40
	13:51	60.10	47.40	21,378,524.00	38.10	13679.00	7252.00	85845.00	434.00	1.000		1.40			N/A	27.02	14.40	27.54	24.51	14.41	14.79	14.79	91.80
RUN 1	14:00	60.00	47.40	21,379,132.00	38.20	14795.00	7252.00	85970.00	434.40	1.000		1.40			N/A	27.02	14.39	27.58	24.47	14.41	14.79	14.79	92.60
															N/A								
															N/A								
															N/A								
															N/A								
															N/A								
	14:35	61.30	47.40	21,380,219.00	38.00	16791.00	7260.00	86172.00	433.90	1.000		1.39			N/A	27.18	14.37	27.56	24.52	14.41	14.79	14.79	93.80
	14:51	59.20	47.40	21,380,793.00	37.90	17855.00	7258.00	86291.00	434.60	1.000		1.39			N/A	27.12	14.39	27.57	24.61	14.41	14.79	14.79	93.30
	15:06	60.80	47.40	21,381,444.00	37.90	19089.00	7259.00	86403.00	433.90	1.000		1.39			N/A	27.26	14.39	27.17	27.70	14.40	14.79	14.79	95.20
	15:20	60.10	47.40	21,381,916.00	38.10	19936.00	7260.00	86495.00	434.20	1.010		1.39			N/A	27.12	14.39	27.02	24.56	14.40	14.79	14.79	95.20
RUN 2	15:36	60.00	47.40	21,382,503.00	38.00	21025.00	7258.00	86606.00	434.60	1.010		1.39			N/A	27.45	14.38	26.82	24.84	14.40	14.79	14.79	93.30
															N/A								
															N/A								
															N/A								
															N/A								
	15:52	59.90	47.40	21,383,209.00	38.00	22351.00	7259.000	86737.00	433.80	1.010		1.39			N/A	27.16	14.37	27.18	24.55	14.40	14.77	14.77	92.40
	16:07	60.20	47.40	21,383,755.00	38.10	23340.00	7254.000	86847.00	433.50	1.010		1.39			N/A	27.13	14.38	27.02	24.53	14.40	14.77	14.77	94.10
	16:22	60.20	47.40	21,384,279.00	38.20	24327.00	7259.000	86947.00	433.70	1.010		1.39			N/A	26.97	14.38	27.50	24.45	14.40	14.77	14.77	93.50
	16:40	60.60	47.40	21,385,019.00	38.10	25690.00	7263.000	87089.00	434.50	1.010		1.39			N/A	27.21	14.36	27.25	24.58	14.40	14.76	14.76	94.10
RUN 3	16:51	60.90	47.40	21,385,387.00	38.10	26369.00	7264.00	87147.00	434.2	1.010		1.39			N/A	27.16	14.39	27.13	24.61	14.41	14.76	14.76	81.40
															N/A								
															N/A								
															N/A								
															N/A								
RUN TOTALS	53.12	41.82	8,516.00	33.58	16473.81										N/A								
															N/A								
															N/A								