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

December 4, 2003

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

(850) 921-9536

RE: Pasco Cogen, Draft Air Permit No. 1010071-002-AC, Document Review Comments

Dear Mr. Koerner:

We have taken the opportunity to review the draft Construction Permit along with the Department's Technical Evaluation and Preliminary Determination. We have several minor comments for the Department's review and incorporation. We do not deem any of the comments of serious nature, but are incorporated to correctly state the nature of the uprating process to the two LM-6000 Combustion Turbine units.

From the Technical Evaluation and Preliminary Determination:

1. Page 2 of 9, Project Description, line 2. The gas turbines began operation in 1993, not 1995.
2. Page 2 of 9, Project Description, line 8. Change "39.5" to "42.5".
3. Page 4 of 9, Description of SPRINT Technology, line 2. Change "6-7 gpm", to "9-12 gpm".
4. Page 5 of 9, Schematic of CT. Change LM6000 Basic "43.4" MW to "42.5 MW "and change "47.3" MW to "50.2 MW".

From the Draft Permit:

1. Page 1 of 6, Project and Location, line 2. Insert " at the" between "...EU-002)" and " Pasco Cogeneration..."
2. Page 4 of 6, Emissions Units Nos. 001 and 002, Description, line 1. Modify " LM06000" to " LM6000".
3. Page 4 of 6, Equipment and Performance restrictions, line 3. Change "approximately 6-7 gpm" to approximately "9-12 gpm".

This is the extent of our comments to the draft Construction Permit documents for the LM6000 uprating process. A marked up copy is also attached for your use.

103097pasco

If there are any questions or concerns regarding this submittal, please feel free to call me. My telephone no. is (816) 527-1160. Once again, on behalf of the Project, we thank-you for all of your help with this matter.

For Pasco Cogen Ltd.
Sincerely,

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

W/attachment

Cc: L. Rajter, w/o
R. Christmas, w/o
B. Andrew, w/o
A. Williams, w/o

File: 274-2010.1
Q. Kissel, EWD
G. Worley, EPA
Q. Burrpah, NPS

103097pasco

TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

PROJECT

Air Permit No. 1010071-002-AC
Addition of SPRINT Inter-Cooling to Existing 2-on-1 Combined Cycle Gas Turbine Unit
(Emissions Units 001 and 002)

COUNTY

Pasco County, Florida

APPLICANT

Pasco Cogeneration, Limited
ARMS Facility ID No. 1010071

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation
New Source Review Section

October 28, 2003

(Filename: 1010071-002-AC - TEPD)

1. GENERAL PROJECT INFORMATION

Applicant Name and Address

Pasco Cogeneration, Limited
20 West 9th Street
Kansas City, MO 64105

Authorized Representative:
Mr. Leo Rajter, Vice President

Processing Schedule

06/10/03 Received the application for a minor source air pollution construction permit to avoid PSD review.
06/20/03 Department requested additional information.
09/17/03 Department received additional information.
10/07/03 Department requested additional information.
10/22/03 Department received additional information; application complete.

Facility Description and Location

The existing facility primarily consists of two 42 MW combined cycle gas turbines (EU-001 and EU-002) configured with chiller systems to maintain the inlet compressor air at 51° F and 100% relative humidity. Each combined cycle unit incorporates a 90 MMBtu per hour, gas-fired duct burner system in the heat recovery steam generator (HRSG). Each HRSG directs steam to a common steam turbine-electrical generator set, which produces another 26.5 MW of electricity. Alternatively, steam may be delivered to an adjacent citrus processing plant. The gas turbines primarily fire natural gas, but can also fire No. 2 distillate oil as a restricted alternate emergency backup fuel. Other sources of air pollution include a 170,000 gallon oil storage tank (EU-003), two 1274 kW diesel emergency generators (EU-004), and fugitive emissions (EU-005). [1]

The existing facility is located in Pasco County at 14850 Old State Road 23, Dade City, Florida. The UTM Coordinates are Zone 17, 383.5 km East and 3139.0 km North.

SIC No. 4931 – Electric and other services combined (cogeneration)

Regulatory Categories

Title III: Based on the application, the existing facility is not a major source of hazardous air pollutants (HAP).

Title IV: Based on the application, the existing facility has no units subject to the acid rain provisions.

Title V: The existing facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.

PSD: The existing facility is a PSD-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

NSPS: The existing facility operates units subject to the New Source Performance Standards of 40 CFR 60.

Project Description

Initial Permit No. PSD-FL-177 to construct the 2-on-1 combined cycle gas turbine system was issued on November 20, 1991. The gas turbines began operation in 1995. The applicant proposes to add SPRINT technology to the two existing gas turbines to enhance performance. "SPRINT" stands for *SPR*ay *INT*ercooling, which involves the injection of atomized water into the compressor between the high-pressure and low-pressure compressors. This results in evaporative cooling of the compressor inlet air and higher mass flow rates. Benefits include increased power output with more efficient fuel usage. The maximum heat input rate when firing natural gas is expected to increase from 423 to 427 MMBtu per hour. The power output is expected to increase from 39.5 to 50.2 MW depending on ambient conditions. [2] The applicant initially provided the

following PSD applicability analysis with regard to CO and NOx emissions.

Table 1A. Applicant's Initial CO and NOx PSD Applicability Analysis

Pollutant	2-Year Avg. TPY	Proposed Cap TPY	Difference TPY	PSD SER TPY	Subject to PSD?
Carbon Monoxide (CO)	237.6	337.0	99.4	100	No
Nitrogen Oxides (NOx)	328.4	368.0	39.6	40	No

The 2-year average shown in the table is based on 1998 and 1999 operation data. During these years, the gas turbines averaged about 7850 hours per year of operation. The applicant initially proposed CO and NOx emission caps just below the PSD significant emissions rates to avoid PSD preconstruction review for the project. [2] However, the applicant later changed this request. As an electric utility steam generating unit, the applicant does not believe the proposed project will result in actual increased annual emissions discounting any emissions that can be attributed to demand growth. As such, the applicant requests a permit to authorize the construction and reporting requirements to demonstrate that the proposed project did not result in PSD-significant emissions increases.

2. APPLICABLE REGULATIONS

State Regulations

This project is subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The Florida Statutes authorize the Department of Environmental Protection to establish rules and regulations regarding air quality as part of the Florida Administrative Code (F.A.C.). This project is subject to the applicable rules and regulations defined in the following Chapters of the Florida Administrative Code.

Chapter	Description
62-4	Permitting Requirements
62-204	Ambient Air Quality Requirements, PSD Increments, and Federal Regulations Adopted by Reference
62-210	Required Permits, Public Notice, Reports, Stack Height Policy, Circumvention, Excess Emissions, and Forms
62-212	Preconstruction Review, PSD Requirements, and BACT Determinations
62-213	Operation Permits for Major Sources of Air Pollution
62-296	Emission Limiting Standards
62-297	Test Methods and Procedures, Continuous Monitoring Specifications, and Alternate Sampling Procedures

Federal Regulations

This project is also subject to the applicable federal provisions regarding air quality as established by the EPA in the following sections of the Code of Federal Regulations (CFR).

Title 40, CFR	Description
Part 60	Subpart A - General Provisions for NSPS Sources
	NSPS Subpart Dc - Small Industrial-Commercial-Institutional Steam Generating Units
	NSPS Subpart GG – Gas Turbines
	Applicable Appendices

General PSD Applicability

The Department regulates major air pollution sources in accordance with Florida's Prevention of Significant Deterioration (PSD) program, as approved by the EPA in Florida's State Implementation Plan and defined in Rule 62-212.400, F.A.C. A PSD review is required only in areas currently in attainment with the National

Ambient Air Quality Standard (AAQS) or areas designated as "unclassifiable" for a given pollutant. A new facility is considered "major" with respect to PSD if it emits or has the potential to emit:

- 250 tons per year or more of any regulated air pollutant, or
- 100 tons per year or more of any regulated air pollutant and the facility belongs to one of the 28 PSD Major Facility Categories (Table 62-212.400-1, F.A.C.), or
- 5 tons per year of lead.

For new projects at existing PSD-major sources, actual pollutant emissions increases are reviewed for PSD applicability based on emissions thresholds known as the Significant Emission Rates listed in Table 62-212.400-2, F.A.C. Increases in actual pollutant emissions resulting from the project that exceed these rates are considered "significant" and the applicant must employ the Best Available Control Technology (BACT) to minimize emissions of each such pollutant and evaluate the air quality impacts. Although a facility may be "major" with respect to PSD for only one regulated pollutant, it may be required to install BACT controls for several "significant" regulated pollutants.

PSD Applicability for Project

The existing plant site is located in Pasco County, which is an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to state and federal Ambient Air Quality Standard (AAQS). Actual and potential emissions of carbon monoxide (CO) and nitrogen oxides (NOx) are greater than 250 tons per year. Therefore, the existing plant is a PSD-major facility in accordance with Rule 62-212.400, F.A.C. Therefore, new projects must undergo a review for PSD applicability.

3. DEPARTMENT'S REVIEW

9-12

Description of SPRINT Technology

As previously mentioned, "SPRINT" is an acronym for *SPR*ay *INT*er-cooling, which can provide up to 20% more power output for the given ambient conditions. An automated control system meters approximately 6-7 gpm of de-mineralized water to a series of 24 spray nozzles. The water is atomized into droplets that are less than 20 μm in diameter, which are then injected between the high-pressure and low-pressure compressors. The LM6000 is a high-pressure ratio gas turbine design, which carefully controls the compressor discharge temperature because the compressed air is used to cool the hot section components. Injecting atomized water just before the high-pressure compressor significantly reduces the temperature, which increases the mass flow rate and provides a greater compression ratio. The result is higher output and improved efficiency. The following figure is a half section view of the LM6000 SPRINT gas turbine, which shows the location of the spray nozzles between the low pressure and high pressure compressors. [3, 4, 5]

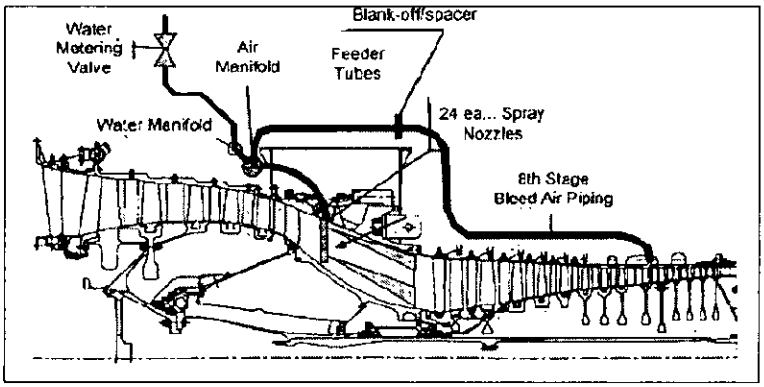

Figure 3-1. Half Section View of LM6000 Gas Turbine Compressor Section [3]

The benefits of SPRINT are more pronounced at high ambient temperatures. At ISO conditions (59° F), SPRINT can provide an additional 9% more power. However, at an ambient temperature of 90° F, SPRINT can provide 20% more power. The following figure schematically shows the impacts of SPRINT inter-cooling.

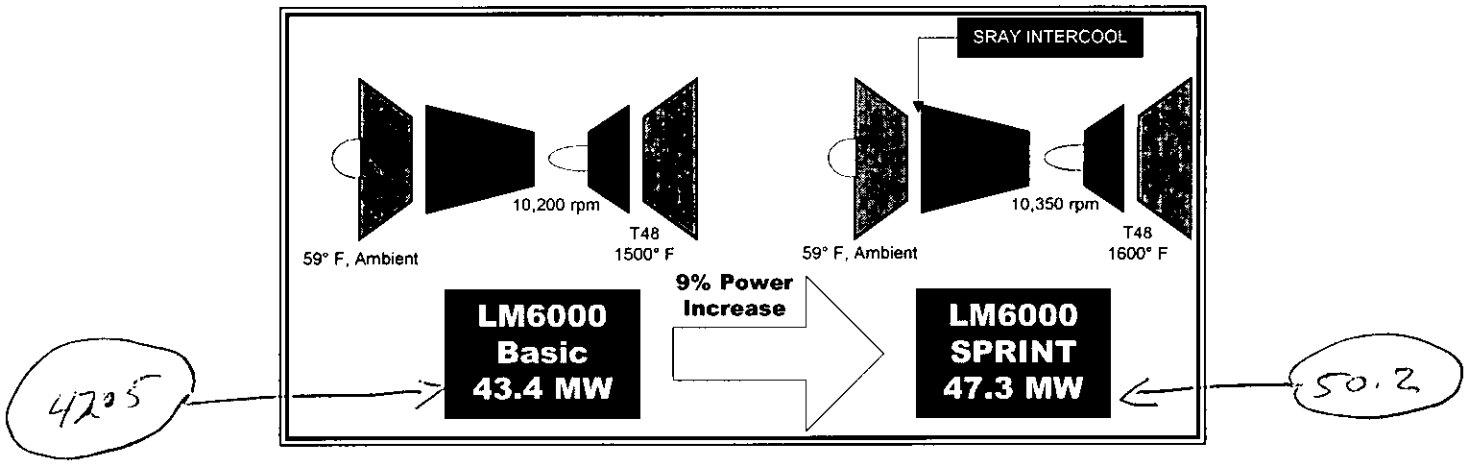

Figure 3-2. Schematic of SPRINT Inter-Cooling Technology[4]

SPRINT technology can be incorporated into new units or be retrofitted to either existing LM6000 PC model (conventional combustors) or the LM6000PD (dry low emissions combustors) model gas turbines systems. The Pasco Cogeneration gas turbines use the more conventional combustors with water injection to reduce NOx emissions. For the LM6000 gas turbine, SPRINT can improve the maximum output to nearly 55 MW with a thermal efficiency of 52%. In previous retrofit applications, SPRINT allowed some plants to shut off, or greatly reduce, usage of existing chiller systems to save associated operating and maintenance costs.

Hourly Emission Rates

The following table shows the maximum expected hourly emission rates before and after the addition of SPRINT.[2]

Table 3A. Comparison of Short Term Emission Rates

Pollutant	Current, lb/hr		Proposed, lb/hr		SPRINT Difference, lb/hr	
	Gas Only	Gas w/DB	Gas Only	Gas w/DB	Gas Only	Gas w/DB
Carbon Monoxide (CO)	56.0	92.0	56.5	92.5	0.5	0.5
Nitrogen Oxides (NOx)	85.5	103.5	86.0	104.0	0.5	0.5
Particulate Matter (PM/PM10)	5.0	7.6	5.0	7.6	Neg.	Neg.
Sulfuric Acid Mist (SAM)	0.2	0.3	0.2	0.3	Neg.	Neg.
Sulfur Dioxide (SO_2)	4.6	5.6	4.6	5.6	Neg.	Neg.
Volatile Organic Compounds (VOC)	3.4	8.8	3.4	8.8	Neg.	Neg.

Notes:

a. Consistent with the current permits, hourly emissions are the total for both gas turbine units.

b. Maximum hourly emission rates are from the current Title V permit and the proposed application.

c. SO_2 emissions from gas firing were estimated based on the maximum heat input rates and a conservative assumption for fuel sulfur of 2 grains of sulfur per 100 scf of natural gas.

d. Similar to oil firing calculations, SAM emissions were assumed to be 4% of the SO_2 emissions.

The following table summarizes CO and NOx emissions test data as compiled form the Department's ARMS database.

Table 3B. Actual Hourly CO and NOx Emissions, Firing Natural Gas

Test Date [1]	Unit 1		Unit 2	
	CO ppmvd	NOx ppmvd @ 15% O2	CO ppmvd	NOx ppmvd @ 15% O2
09/1996	---	23.5 21.32 w/DB	---	23.4 22.5 w/DB
09/1997	23.6 19.1 w/DB	20.9 18.0 w/DB	16.0 13.4 w/DB	23.1 18.5 w/DB
07/1998	---	24.1	---	24.6
03/1999	21.3	24.9	---	---
08/1999	---	25.0	---	24.9
07/2000	---	25.0	---	24.5
07/2001	---	---	---	24.6
08/2001	---	23.7	---	---
08/2002	---	23.4	---	23.8
07/2003	---	---	---	24.3
08/2003	---	24.5	---	---

Notes:

a. Based on information in the Department's ARMS database.

b. Tests conducted in September of 1995 were reported in terms of "lb/hour". The Department did not have enough information to estimate emissions in terms of "ppmvd".

In general, the test data shows that actual CO and NOx emissions are maintained below the emissions standards of 28 and 25 ppmvd, respectively. It is interesting to note that both the CO and NOx concentrations when duct firing were lower than without duct firing.

Annual Emission Rates

As shown in the table for hourly emission rates, the project is expected to have a negligible impact with regard to emissions of PM/PM10, SAM, SO2, and VOC. Therefore, the potential annual emissions increases from both gas turbines will remain less than the PSD significant emission rates for these pollutants. In addition, the gas turbines have fired little oil. Based on past Annual Operating Reports, the maximum oil firing occurred in 1998 when Unit 1 fired oil for approximately 7 hours (19,690 gallons) and Unit 2 for approximately 17 hours (48,380 gallons). According to the plant engineer, oil is only occasionally fired to prove to the steam host that it is reliable as a backup fuel. [6] Therefore, this review does not consider oil firing because oil firing is restricted to emergency backup operation ($\leq$ 240 hours per year) and the project will not change any conditions related to oil firing. The remainder of this review will focus on emissions of carbon monoxide (CO) and nitrogen oxides (NOx) from gas firing. The following table shows the future potential emissions with SPRINT compared to the two-year annual average emissions from the two gas turbines combined.

Table 3C. Comparison of Past Actual to Future Potential Annual Emissions

Pollutant	2-Year Avg. TPY	Future Potential TPY	Difference TPY	PSD SER TPY	Subject to PSD?
Carbon Monoxide (CO)	237.6	344.8	107.2	100	Potentially
Nitrogen Oxides (NOx)	328.4	406.9	78.5	40	Potentially

Notes:

a. The 2-year average actual emission rate is based on the Annual Operating Reports for 1998 and 1999 and includes gas combustion in the duct burner system.

b. Future potential emissions are based on the maximum expected hourly emissions from firing only natural gas and an average turbine inlet temperature of 59° F.

c. Maximum annual emissions are based on 8760 hours per year of gas firing, of which 5833 hours include duct burning. Originally, each HRSG duct burner was specified at 150 MMBtu per hour and limited to 525,000 MMBtu per year, which is equivalent to 3500 hours per year of full load operation. Each installed HRSG duct burner is actually 90 MMBtu per hour, which results in about 5833 hours of operation per year based on the annual gas firing limitation.

The above table shows that a direct comparison of the past actual to future potential annual emissions could trigger PSD applicability. For this reason, the applicant initially requested a CO cap of 337 tons per year and a NOx cap of 368 tons per year, which result in net emissions increases just below the PSD significant emission rates. However, in accordance with Rule 62-210.200(97), F.A.C., the existing combined cycle unit is considered *electric utility steam generating unit*, which is defined as:

> "Any steam electric generating unit that is constructed for the purpose of supplying more than one-third of its potential electric output capacity and more than 25 MW electrical output to any utility power distribution system for sale. Any steam supplied to a steam distribution system for the purpose of providing steam to a steam-electric generator that would produce electrical energy for sale is also considered in determining the electrical energy output capacity of the unit."

As previously mentioned, the rated capacity of the steam turbine electrical generator in the existing 2-on-1 combined cycle unit is 26.5 MW. In addition, steam that is supplied to the steam host represents only a small fraction of the potential capacity. Therefore, the existing 2-on-1 combined cycle system is considered an electric utility steam generating unit. Rule 62-212.200(11)(d), F.A.C. defines *actual emissions* for these units as:

> "For an electric utility steam generating unit (other than a new unit or the replacement of an existing unit) actual emissions of the unit following a physical or operational change shall equal the representative actual annual emissions of the unit following the physical or operational change, provided the owner or operator maintains and submits to the Department on an annual basis, for a period of 5 years representative of normal post-change operations of the unit, within the period not longer than 10 years following the change, information demonstrating that the physical or operational change did not result in an emissions increase. The definition of "representative actual annual emissions" found in 40 CFR 52.21(b)(33) is adopted and incorporated by reference in Rule 62-204.800, F.A.C."

40 CFR 52.21(b)(33) defines *representative actual annual emissions* as:

> "Representative actual annual emissions means the average rate, in tons per year, at which the source is projected to emit a pollutant for the two-year period after a physical change or change in the method of operation of a unit, (or a different consecutive two-year period within 10 years after that change, where the Administrator determines that such period is more representative of normal source operations), considering the effect any such change will have on increasing or decreasing the hourly emissions rate and on projected capacity utilization. In projecting future emissions the Administrator shall:
>
> (i) Consider all relevant information, including but not limited to, historical operational data, the company's own representations, filings with the State or Federal regulatory authorities, and compliance plans under title IV of the Clean Air Act; and
>
> (ii) Exclude, in calculating any increase in emissions that results from the particular physical change or change in the method of operation at an electric utility steam generating unit, that portion of the unit's emissions following the change that could have been accommodated during the representative baseline period and is attributable to an increase in projected capacity utilization at the unit that is unrelated to

the particular change, including any increased utilization due to the rate of electricity demand growth for the utility system as a whole."

As an electric utility steam generating unit, Pasco Cogeneration Ltd. projects that the addition of SPRINT will have little impact with regard to actual emissions from these units. In other words, future representative actual emissions due to the addition of SPRINT technology would be less than the 2-year average actual annual emissions discounting any emissions due to demand growth that could have been accommodated prior to the change. The applicant agrees to submit the required reports for a period of 5 years demonstrating that the SPRINT project did not result in a net actual annual emissions increase.

Conclusion

Based on conversations with the applicant[6], current operating practices for the plant include the following:

- Both units operate near capacity during the day;
- One unit shuts down at night and one unit continues to operate as necessary;
- Units are cycled each day for the nighttime shutdown to maintain equivalent hours on each unit;
- Duct burners are used for on-peak demand;
- Chiller system is used for on-peak demand, mostly during the summer; and
- Units only fire distillate oil as a restricted emergency backup fuel (< 240 hours per year).

Although the addition of SPRINT is a substantial investment (~ $7 million for both units combined), it will not change the current operating practices at the plant. SPRINT will be used nearly all of the time, which is expected to decrease operation of the chiller system and duct firing in order to save on operational expenses. SPRINT will also be used when firing oil, but will have a negligible impact with regard to emissions for the 240 hours per year allowed for oil firing. For comparison purposes, the following table shows the maximum annual emissions increases due *solely* to the addition of SPRINT technology when firing natural gas and neglecting emissions from other operating conditions.

Table 3C. Potential Annual Emissions Increases Due Solely to the Addition of SPRINT

Pollutant	Gas Only TPY	Gas w/DB TPY	Total TPY
Hours per Year	2927	5833	8760
Carbon Monoxide (CO)	0.7	1.5	2.2
Nitrogen Oxides (NOx)	0.7	1.5	2.2

Notes:

a. Potential annual emissions are the total for both units firing natural gas.

b. Potential annual emissions are based on the difference between the current permitted maximum hourly emission rate and the proposed maximum hourly emissions rate with SPRINT.

c. Maximum annual emissions are based on 8760 hours per year of gas firing, of which 5833 hours include duct burning.

As shown, the maximum expected impacts due only to SPRINT appear minimal. Although SPRINT allows operation at a higher generating capacity with slightly increased emissions, it will also tend to replace operation of the existing chiller and duct burner systems, which provide similar benefits. Therefore, it is unlikely that the SPRINT project will result in increased actual emissions.

4. PRELIMINARY DETERMINATION

The Department approves the applicant's request and will issue a draft permit to authorize the project with the following requirements:

- Authorization to install SPRINT inter-cooling technology on each unit.

- Modification of the maximum hourly CO and NOx mass emission rates (lb/hour) when using SPRINT.
- Requirement for initial and annual CO and NOx emissions tests that will establish the actual emission rates from each modified unit.
- Identification of the 2-year average CO and NOx annual emissions.
- Submittal of reports for at least 5 years following the SPRINT project to demonstrate that the project did not result in PSD-significant net emissions increases.
- Requirement for PSD preconstruction review should the SPRINT project result in actual net emissions increases greater than the PSD significant emission rates.

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. No air quality modeling analysis is required because the project does not result in significant net emissions increases. Jeff Koerner is the project engineer responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the project engineer at the Department's Bureau of Air Regulation at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

REFERENCES

1. Title V Air Operation Permit No. 1010071-001-AV for Pasco Cogeneration Ltd.
2. Application by Pasco Cogeneration Ltd. Requesting an Air Construction Permit to Add SPRINT Technology to the Two Existing Gas Turbines (Project No. 1010071-002-AC).
3. "LM6000 SPRINT in Service with British REC"; Article from the magazine *International Turbomachinery* dated September/October 1998
4. "LM6000 Now with SPRINT Power Boost"; Article from a 1999 Company Brochure by S&S Energy Products: A GE Power Systems Business
5. "Inter-cooling for LM6000 Gas Turbines" by Mark McNeely; Article from the 1998 July/August Edition of the magazine *Diesel and Gas Turbine Worldwide*
6. Phone conference between the Department (Jeff Koerner) and the applicant (Tom Grace and plant engineer); October 1, 2003

DRAFT PERMIT

PERMITTEE:

Pasco Cogeneration, Limited
20 West 9th Street
Kansas City, MO 64105
Authorized Representative:
Mr. Leo Rajter, Vice President

Pasco Cogeneration, Limited
Air Permit No. 1010071-002-AC
Facility ID No. 1010072
SIC No. 4931
Permit Expires: December 1, 2004

PROJECT AND LOCATION

This permit authorizes construction to add "SPRINT" spray inter-cooling technology to the two existing gas turbines (EU-001 and EU-002) at the Pasco Cogeneration Plant, which is located in Pasco County at 14850 Old State Road 23, Dade City, Florida 33525. The UTM coordinates are Zone 17, 383.5 km East, and 3139.0 km North.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to install the proposed equipment in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department. The conditions of this permit supplement all previously issued air construction and operation permits for this emissions unit. Unless otherwise specified, these conditions are in addition to all other applicable permit conditions and regulatory requirements.

CONTENTS

(DRAFT)

Michael G. Cooke, Director
Division of Air Resources Management

(Effective Date)

FACILITY AND PROJECT DESCRIPTION

The existing facility consists of the following emissions units:

ID	Emission Unit Description
001	Unit 1 - Combined cycle gas turbine with duct burner system
002	Unit 2 - Combined cycle gas turbine with duct burner system
003	Oil storage tank
004	Emergency diesel generators
005	Fugitive VOC emissions

REGULATORY CLASSIFICATION

Title III: Based on the application, the existing facility is not a major source of hazardous air pollutants (HAP).

Title IV: Based on the application, the existing facility has no units subject to the acid rain provisions.

Title V: The existing facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.

PSD: The existing facility is a PSD-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

NSPS: The existing facility operates units subject to the New Source Performance Standards of 40 CFR 60.

RELEVANT DOCUMENTS

The permit application and additional information received to make it complete are not a part of this permit; however, the information is specifically related to this permitting action and is on file with the Department.

1. Permitting Authority: Applications for permits regarding PSD preconstruction review shall be submitted to the New Source Review Section of the Department's Bureau of Air Regulation at 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400. Applications for permits regarding operation or minor sources shall be submitted to the Air Resources Section of the Department's Southwest District Office at 3804 Coconut Palm Drive, Tampa, Florida 33619-8218.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Air Resources Section of the Department's Southwest District Office at 3804 Coconut Palm Drive, Tampa, Florida 33619-8218.

3. Appendices: The following Appendices are attached as part of this permit: Appendix A (Citation Format); Appendix B (General Conditions); and Appendix C (Standard Conditions).

4. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of the subject emissions unit shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403 of the Florida Statutes (F.S.); Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.); and Title 40, Part 60 of the Code of Federal Regulations (CFR), adopted by reference in Rule 62-204.800, F.A.C. The terms used in this permit have specific meanings as defined in the applicable chapters of the Florida Administrative Code. The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]

5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]

6. Modifications: The permittee shall notify the Compliance Authority upon commencement of construction. No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]

7. Title V Permit Revision: Pursuant to Rule 62-213.420(1)(a)2, F.A.C., the permittee shall submit an application for a revised Title V air operation permit at least 90 days before the expiration of this permit, but no later than 180 days after commencing operation. In accordance with Rule 62-213.412(2), F.A.C., the permittee may immediately implement the changes authorized by this air construction permit after submitting the application for a revised Title V air operation permit to the Permitting Authority and providing copies of the application to EPA Region 4 and each Compliance Authority. To apply for a revised Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. As necessary, the application shall include a Compliance Assurance Monitoring Plan. The application shall be submitted to the Department's Southwest District Office at the address identified above. [Rules 62-4.030, 62-4.050, 62-4.220, 62-213.412, and 62-213.420, F.A.C.]

C. EU-001/002, Units 1 and 2 Combined Cycle Gas Turbines

This section of the permit addresses the following emissions unit. LM 6000

Emissions Unit Nos. 001 and 002
Description: Each unit consists of a General Electric Model LM06000 gas turbine, heat recovery steam generator (HRSG) with duct firing, chiller system, and SPRINT spray inter-cooling. Steam generated in the HRSGs is directed to a common steam turbine-electrical generator, which is rated at 26.5 MW. Alternatively, steam can be directed to an independent steam host (an adjacent citrus processing facility). *Fuel*: Each unit fires pipeline natural gas as the primary fuel and distillate oil as a restricted alternate fuel. *Capacity*: At a turbine inlet temperature of 51° F, the maximum heat input rate from gas firing (LHV) without SPRINT is 423 MMBtu per hour, which produces approximately 42 MW. At a turbine inlet temperature of 51° F, the maximum heat input rate from gas firing (LHV) with SPRINT is 427 MMBtu per hour, which produces approximately 52 MW. *NOx Controls*: A water injection system is used to reduce NOx emissions. The water-to-fuel ratio is monitored continuously and adjusted by the automatic control system based on load conditions. *Stack Parameters*: The stack is a maximum of 11 feet in diameter and at least 100 feet tall. After the HRSGs and steam turbine-electrical generator, the exhaust exits at approximately 232° F with a volumetric flow rate of approximately 325,000 acfm.

{Permitting Note: The units remain subject to the applicable requirements of previous air construction Permit No. PSD-FL-177 (Project No. AC51-196460) and current Title V air operation Permit No.1010071-001-V.}

PREVIOUS APPLICABLE REQUIREMENTS

1. Other Permits: The conditions of this permit supplement all previously issued air construction and operation permits for this emissions unit. Unless otherwise specified, these conditions are in addition to all other applicable permit conditions and regulatory requirements. The permittee shall continue to comply with the conditions of these permits, which include restrictions and standards regarding capacities, production, operation, fuels, emissions, monitoring, record keeping, reporting, etc. [Rule 62-4.070, F.A.C.]

EQUIPMENT AND PERFORMANCE RESTRICTIONS

2. SPRINT Upgrade: This permit authorizes the construction activities necessary to add General Electric's "SPRINT" spray inter-cooling technology. In general, the equipment consists of a system that will automatically meter approximately 6-7 (9-12) gpm of de-mineralized water to a series of 24 spray nozzles. [Applicant Request]
3. Permitted Capacity: At a turbine inlet temperature of 51° F, the maximum heat input rate from firing natural gas (LHV) when utilizing the SPRINT system is 427 MMBtu per hour, which produces approximately 52 MW of direct power. [Rule 62-210.200(PTE), F.A.C.]

{Permitting Note: This permit does not alter any previous requirements for other methods of operation or modify any specifications related to authorized fuels, fuel consumption, or allowable hours of operation.}

EMISSIONS STANDARDS

4. Carbon Monoxide (CO)
   a. **Combustion Turbines (CTs)**: When firing natural gas and utilizing SPRINT, CO emissions from each unit shall not exceed 28 ppmvd. In addition, the maximum CO mass emission rate from both units combined shall not exceed 56.5 pounds per hour based on a turbine inlet temperature of 51° F. *{Permitting Note: The concentration-based standard (ppmvd) remains consistent with the BACT determination made in Permit No. PSD-FL-177.}*

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

November 24, 2003

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

(850) 921-9536

RE: Pasco Cogen, Draft Air Permit No. 1010071-002-AC, Legal Notice Publication in the Tampa Tribune Pasco County Edition, November 21, 2003

Dear Mr. Koerner:

Attached you will a Notary signed and sealed document attesting to the publication of the Public Notice of Intent to issue the draft construction permit for the SPRINT Uprate project at Pasco Cogen. Accompanying the certification is a copy f the article as published on Friday November 21, 2003.

It is our understanding that all comments regarding the draft construction permit must be submitted to you no later than Friday, December 5, 2003.

If there are any questions or concerns regarding this submittal, please feel free to call me. My telephone no. is (816) 527-1160. Once again, on behalf of the Project thank you for all of your help.

For Pasco Cogen Ltd.
Sincerely,

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

W/attachment

Cc: L. Rajter, w/o
R. Christmas, w/o
B. Andrew, w/o
A. Williams, w/o
Q. Kissel, SWD
File: 274-2010.1
M. Worley, EPA
Q. Bennett, NPS

103094pasco

THE TAMPA TRIBUNE

Published Daily
Tampa, Hillsborough County, Florida

State of Florida }
County of Hillsborough } ss.

Before the undersigned authority personally appeared C. Pugh, who on oath says that she is the Advertising Billing Supervisor of The Tampa Tribune, a daily newspaper published at Tampa in Hillsborough County, Florida; that the attached copy of advertisement being a

LEGAL NOTICE THE PASCO TRIBUNE

in the matter of PUBLIC NOTICE OF INTENT

was published in said newspaper in the issues of

NOVEMBER 21, 2003

Affiant further says that the said The Tampa Tribune is a newspaper published at Tampa in said Hillsborough County, Florida, and that the said newspaper has heretofore been continuously published in said Hillsborough County, Florida, each day and has been entered as second class mail matter at the post office in Tampa, in said Hillsborough County, Florida for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that she has neither paid nor promised any person, this advertisement for publication in the said newspaper.

C Pugh

Sworn to and subscribed by me, this 21 day of NOVEMBER, A.D. 20 03

Personally Known ✓ or Produced Identification ____
Type of Identification Produced ____

Susie Lee Slaton

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Draft Air Permit No. 1010071-002-AC

Pasco Cogeneration, Limited SPRINT Project

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit to Pasco Cogeneration, Limited (Applicant) to install "SPRINT" spray inter-cooling technology on the two existing LM-6000gas turbines (Emissions Units 001 and 002). The new equipment will be installed at the Pasco Cogeneration Plant, which is located in Pasco County at 14850 Old State Road 23, Dade City, Florida 33525. The applicant's authorized representative and mailing address is: Mr. Leo Rajter, Vice President, Pasco Cogeneration, Limited, 20 West 9th Street, Kansas City, MO 64105.

The applicant proposes to add SPRINT technology to the two existing gas turbines to enhance performance. "SPRINT" stands for SPRay INTer-cooling and involves the injection of atomized water into the compressor between the high-pressure and low-pressure

compressors. This results in evaporative cooling of the compressor inlet air and higher mass flow rates. Benefits include increased power output with more efficient fuel usage. The maximum heat input rate when firing natural gas is expected to increase from 423 to 427 MMBtu per hour. The power output is expected to increase from 39.5 to 50.2 MW depending on ambient conditions.

As an electric utility steam generating unit, Pasco Cogeneration Ltd. projects that the addition of SPRINT will have little impact with regard to actual emissions from these units. In other words, future representative actual emissions due to the addition of SPRINT technology would be less than the 2-year average actual annual emissions discounting any emissions due to demand growth that could have been accommodated prior to the change. The draft permit authorizes the SPRINT project and specifies emissions standards for carbon monoxide and nitrogen oxides. Initial and annual testing is required for these pollutants. The permittee is required to submit reports comparing actual emissions after implementing SPRINT to the past actual emissions (2-year average) before the project. If the comparison shows an increase in actual emissions greater than the PSD significant emission rates defined in Table 212.400-2, F.A.C., then Units 1 and 2 shall be subject to PSD pre construction review at that time. The review shall include a determination of the Best Available Control Technology (BACT) for each PSD-significant pollutant.

The Department will issue the Final Permit with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions. The Department will accept written comments concerning the proposed permit issuance action for a period of fourteen (14) days from the date of publication of this Public Notice of Intent to Issue Air Construction Permit. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57, F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen (14) days of receipt of this notice of intent. 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 publication of the public notice or within fourteen (14) days of receipt of this notice of intent, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Department 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 Department'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 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 indicate; (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 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 Department'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 Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Florida Department of Environmental Protection
Bureau of Air Regulation, New Source Review Section
(111 S. Magnolia Drive, Suite 4)
2600 Blair Stone Road, MS #5505
Tallahassee, Florida, 32399-2400
Telephone: 850/488-0114

Florida Department of Environmental Protection
Air Resources Section
Southwest District Office
3804 Coconut Palm Drive
Tampa, Florida 33619-8218
Telephone: 813/744-6100

The complete project file includes the application, Technical Evaluation and Preliminary Determination, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Bureau of Air Regulation's review engineer for this project for additional information at the address and phone number listed above.

3862 11/21/03