PERMITTEE:

CPV Cana, Ltd.
35 Braintree Hill Office Park, Suite 107
Braintree, Massachusetts 02184

File No.	1110103-001-AC
Permit No.	PSD-FL-323
SIC No.	4911
Expires:	December 31, 2005

Authorized Representative:

Gary Lambert, Executive Vice President

PROJECT AND LOCATION:

Air construction permit pursuant to the requirements for the Prevention of Significant Deterioration of Air Quality (PSD) for the construction of a nominal 245 MW gas-fired combined cycle electrical power plant. The steam-electrical generator is limited to less than 75 MW. Diesel fuel with a maximum sulfur content of 0.05 percent will be used as back-up fuel. The plant will be known as the CPV Cana Power Generating Facility.

STATEMENT OF BASIS:

This permit is issued under the provisions of Chapter 403 of the Florida Statutes, Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code. The above named permittee is authorized to modify the facility 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 of Environmental Protection (Department).

The attached Appendices are made a part of this permit:

Appendix GC	Construction Permit General Conditions
Appendix BD	BACT Determination
Appendix GG	NSPS Subpart GG Requirements

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Howard L. Rhodes, Director
Division of Air Resources Management

FACILITY DESCRIPTION

The proposed CPV facility is a combined cycle power plant. Key components include:

- One nominal 170 megawatt (MW) gas-fired combustion turbine-electrical generator with an un-fired heat recovery steam generator (HRSG) and 170-foot stack;
- A selective catalytic reduction unit located within the HRSG;
- A 975,000 gallon storage tank for backup No. 2 distillate fuel oil;
- A separate steam-electrical generator;
- A five-cell mechanical draft cooling tower;
- Ancillary facilities including miscellaneous equipment buildings, ammonia storage, demineralized water storage, fire water storage, one diesel-fired 250 hp fire water pump, and a 500 kW emergency generator.

EMISSION UNITS

This permit addresses the following emission units:

EMISSIONS UNIT NO.	SYSTEM	EMISSION UNIT DESCRIPTION
001	Power Generation	One 170-megawatt combustion turbine-electrical generator with unfired heat recovery steam generator
002	Fuel Storage	One 975,000 gallon fuel oil storage tank
003	Water Cooling	One five-cell mechanical cooling tower
004	Ancillary Equipment	One diesel-fired 250 hp fire water pump, one 500 kW emergen generator, and an aqueous ammonia storage tank.

REGULATORY CLASSIFICATION

Title V: This facility is classified as a Major or Title V Source of air pollution because emissions of at least one regulated air pollutant, such as particulate matter (PM/PM_{10}), sulfur dioxide (SO_2), nitrogen oxides (NO_X), carbon monoxide (CO), or volatile organic compounds (VOC) exceeds 100 tons per year (TPY).

PSD: This facility is within an industry included in the list of the 28 Major Facility Categories per Table 62-212.400-1, F.A.C. Because emissions are greater than 100 TPY for at least one criteria pollutant, the facility is also a Major Facility with respect to Rule 62-212.400, Prevention of Significant Deterioration (PSD). With respect to Table 62-212.400-2, this facility results in emissions increases greater than 40 TPY of NO_X and SO_2, 25/15 TPY of PM/PM_{10}, 100 TPY of CO, and 7 TPY of sulfuric acid mist. These pollutants require PSD review and determinations of Best Available Control Technology pursuant to Rule 62-212.400, F.A.C.

Title III: This facility is not a major source of hazardous air pollutants (HAPs). This facility is not subject to MACT applicability.

Title IV: The new combined cycle unit is subject to certain Acid Rain provisions of Title IV of the Clean Air Act.

NSPS: The new combined cycle gas turbine is subject to New Source Performance Standards 40 CFR 60, Subpart GG for Gas Turbines and the Storage Tank is subject to 40 CFR 60, Subpart Kb.

NESHAP: The permittee did not identify any emission unit as being subject to a National Emissions Standards for Hazardous Air Pollutants (NESHAP).

SITING: The project is not subject to Section 403.501-518, F.S., Florida Electrical Power Plant Siting Act, based on information regarding gross electrical power generated from the steam (Rankine) cycle submitted by the applicant and reviewed by the Department.

PERMIT SCHEDULE

- 12/03/01 Notice of Intent to Issue published in The Tribune, St. Lucie County
- 11/19/01 Distributed Intent to Issue Permit
- 10/25/01 Application deemed complete
- 09/05/01 Received PSD Application

RELEVANT DOCUMENTS:

The documents listed below are the basis of the permit. They are specifically related to this permitting action, but are not incorporated into this permit. These documents are on file with the Department.

- Application received on September 5, 2001
- Comments from the Fish and Wildlife Service dated 06/12/01
- Department letter to CPV dated October 2, 2001
- CPV responses dated October 25, 2001
- Department's Intent to Issue and Public Notice Package dated November 21, 2001.
- Department's Final Determination and Best Available Control Technology Determination issued concurrently with this Final Permit.

SECTION II. COMMON SPECIFIC CONDITIONS

GENERAL AND ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: All documents related to applications for permits to construct, operate or modify an emissions unit should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (FDEP), at 2600 Blairstone Road, Tallahassee, Florida 32399-2400 and phone number (850)488-0114.

2. Compliance Authority: All documents related to reports, tests, and notifications should be submitted to the DEP Southeast District Office, 400 North Congress Avenue W, West Palm Beach, Florida, 33401 and phone number 561/681-6755, fax 561-681-6755. Copies shall be sent to the DEP Port St. Lucie Branch Office, 1801 S.E. Hillmoor Dr, C 204, Port St. Lucie, Florida 34952 and phone number 561/398-2806, fax 561/398-2815.

3. General Conditions: The owner and operator is subject to and shall operate under the attached General Permit Conditions G.1 through G.15 listed in Appendix GC of this permit. General Permit Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [Rule 62-4.160, F.A.C.]

4. Terminology: The terms used in this permit have specific meanings as defined in the corresponding chapters of the Florida Administrative Code.

5. Forms and Application Procedures: 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. [Rule 62-210.900, F.A.C.]

6. Modifications: The permittee shall give written notification to the Department when there is any modification to this facility. This notice shall be submitted sufficiently in advance of any critical date involved to allow sufficient time for review, discussion, and revision of plans, if necessary. Such notice shall include, but not be limited to, information describing the precise nature of the change; modifications to any emission control system; production capacity of the facility before and after the change; and the anticipated completion date of the change. [Chapters 62-210 and 62-212, F.A.C.]

7. New or Additional Conditions: Pursuant to Rule 62-4.080, F.A.C., 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.]

8. PSD Approval to Construct Expiration: Approval to construct shall become invalid if construction is not commenced within 18 months after receipt of such approval, or if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. The Department may extend the 18-month period upon a satisfactory showing that an extension is justified. [40 CFR 52.21(r)(2)]

9. Completion of Construction: The permit expiration date is December 31, 2005. Physical construction shall be complete by February 28, 2005. The additional time provides for testing, submittal of results, and submittal of the Title V permit to the Department.

10. Permit Expiration Date Extension: The permittee, for good cause, may request that this PSD permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (Rule 62-4.080, F.A.C.).

11. BACT Determination: In conjunction with extension of the 18 month periods to commence or continue construction, the extension of the December 31, 2004 permit expiration date, or any increases in MW generated by steam, heat input limits, hours of operation, oil firing, low or baseload operation, short-term or annual emission limits, annual fuel heat input limits or similar changes; the permittee may be required to demonstrate the adequacy of any previous determination of best available control technology for the source.
[40 CFR 52.21(j)(4); 40CFR 51.166(j) and Rule 62-4.070 F.A.C.]

12. Application for Title IV Permit: An application for a Title IV Acid Rain Permit must be submitted to the DEP's Bureau of Air Regulation in Tallahassee at least 24 months before the date on which the new unit begins serving an electrical generator greater than 25 MW and a copy to the U.S. Environmental Protection Agency Region IV office in Atlanta, Georgia [40 CFR 72]

13. Application for Title V Permit: An application for a Title V operating permit, pursuant to Chapter 62-213, F.A.C., must be submitted to the DEP's Bureau of Air Regulation, and a copy to the Department's Southeast District Office. [Chapter 62-213, F.A.C.]

OPERATIONAL REQUIREMENTS

14. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]

15. Operating Procedures: Operating procedures shall include good operating practices and proper training of all operators and supervisors. The good operating practices shall meet the guidelines and procedures as established by the equipment manufacturers. All operators (including supervisors) of air pollution control devices shall be properly trained in plant specific equipment. [Rule 62-4.070(3), F.A.C.]

16. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without the applicable air control device operating properly.
[Rule 62-210.650, F.A.C.]

17. Unconfined Particulate Matter Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary.
[Rule 62-296.320(4)(c), F.A.C.]

TESTING REQUIREMENTS

18. Test Notification: The permittee shall notify each Compliance Authority in writing at least 30 days prior to any initial NSPS performance tests and at least 15 days prior to any other required tests. Notification shall include the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and conducting the test.
[Rule 62-297.310(7)(a)9., F.A.C. and 40 CFR 60.7, 60.8]

19. Calculation of Emission Rate: For each emissions performance test, the indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule.
[Rule 62-297.310(3), F.A.C.]

20. Applicable Test Procedures

- *Required Sampling Time*. Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes. The minimum observation period for a visible emissions compliance test shall be sixty (60) minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur. [Rule 62-297.310(4)(a)1. and 2., F.A.C.]
- *Minimum Sample Volume*. Unless otherwise specified in the applicable rule or test method, the minimum sample volume per run shall be 25 dry standard cubic feet.
[Rule 62-297.310(4)(b), F.A.C.]
- *Calibration of Sampling Equipment*. Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1, F.A.C.
[Rule 62-297.310(4)(d), F.A.C.]

21. Determination of Process Variables

- *Required Equipment*. The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards. [Rule 62-297.310(5)(a), F.A.C.]
- *Accuracy of Equipment*. Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured

with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value. [Rule 62-297.310(5)(b), F.A.C.]

22. Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]

23. Stack Testing Facilities: Stack sampling facilities shall be installed in accordance with Rule 62-297.310(6), F.A.C.

24. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. [Rule 62-297.310(2)(b), F.A.C.]

RECORDS

25. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rules 62-4.160(14) and 62-213.440(1)(b)2., F.A.C.]

REPORTS

26. Emissions Performance Test Results Reports: A report indicating the results of any required emissions performance test shall be submitted to each Compliance Authority no later than 45 days after completion of the last test run. The test report shall provide sufficient detail on the tested emission unit and the procedures used to allow the Department to determine if the test was properly conducted and if the test results were properly computed. At a minimum, the test report shall provide the applicable information listed in Rule 62-297.310(8)(c), F.A.C.
[Rule 62-297.310(8), F.A.C.].

27. Annual Operating Reports: Pursuant to Rule 62-210.370(2), F.A.C., Annual Operation Reports, the permittee is required to submit annual reports on the actual operating rates and emissions from this facility. Annual operating reports shall be sent to the DEP's Southeast District Office by March 1st of each year.

APPLICABLE STANDARDS AND REGULATIONS

1. Regulations: Unless otherwise indicated in this permit, the construction and operation of the subject emission units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of Chapter 403, F.S. and Florida Administrative Code Chapters 62-4, 62-17, 62-204, 62-210, 62-212, 62-213, 62-214, 62-296, and 62-297; and the applicable requirements of the Code of Federal Regulations Section 40, Parts 52, 60, 72, 73, and 75.

2. Applicable Requirements: Issuance of a permit does not relieve the owner or operator of an emissions unit from complying with any applicable requirements, any emission limiting standards or other requirements of the air pollution rules of the Department or any other such requirements under federal, state, or local law, notwithstanding that these applicable requirements are not explicitly stated in this permit. In cases where there is an ambiguity or conflict in the specific conditions of this permit with any of the above-mentioned regulations, the more stringent local, state, or federal requirement applies.
   [Rules 62-204.800 and Rules 62-210.300 and 62-4.070 (3) F.A.C.]

3. Construction Authorization: The permittee is authorized to construct/install:

   a. EU 001: A combined cycle unit consisting of a General Electric Model PG7241FA gas turbine-electrical generator set, an unfired heat recovery steam generator (HRSG), and a steam turbine-electrical generator set. The combined cycle unit shall be designed as a system to generate a nominal 170 MW of shaft-driven electrical power and less than 75 MW of steam-generated electrical power. The unit is also subject to Subpart GG of 40 CFR 60, an NSPS for gas turbines as specified in Appendix GG of this permit.

   b. EU 002: One nominal 975,000-gallon distillate fuel oil storage tank. This unit is subject to NSPS requirements as stated in Section III, Specific Condition No.3. {Permitting Note: Tanks store fuel with relatively low Reid Vapor Pressure. Potential VOC emissions are expected to be less than 0.5 tons per year.}

   c. EU 003: One five-cell mechanical draft cooling tower with drift eliminators: This unit shall be designed and maintained to reduce drift to 0.0005 percent of the circulating water flow rate. {Permitting Note: Potential PM/PM_{10} emissions are expected to be less than 0.8 lb/hr and 3.5 ton/year}.

   d. EU 004: Ancillary equipment as follows:

      - One 500 kW Emergency Generator: This generator shall be operated with diesel fuel with a maximum sulfur content of 0.05%. {Permitting Note: Potential emissions in tons per year are expected to be less than 0.1 for PM/PM_{10}, SO_2, or VOC, less than 4.0 for NO_X, and less than 1.1 for CO.}

- One 250 HP Diesel Fire Water Pump: This engine shall be operated with diesel fuel with a maximum sulfur content of 0.05%. {Permitting Note: Potential emissions in tons per year are expected to be less than 0.2 for PM/PM_{10}, 2.2 for NO_X, 0.5 for CO, 0.02 for SO_2 and 0.2 for VOC}
- One Aqueous Ammonia Storage Tank: This tank shall contain aqueous ammonia (less than 20 percent concentration by volume) and is not subject to applicable provisions of 40 CFR 68, Chemical Accident Provisions.
- One Exhaust Stack: The stack shall be approximately 170 feet tall and 18.5 feet in diameter.

[Application, Rule 62-204.800(7)(b), F.A.C., and 40 CFR 60 Subparts GG and Kb]

4. NSPS Requirements: The combined cycle gas turbine (Emissions Unit 001) shall comply with the applicable provisions of 40CFR60, Subpart GG, Standards of Performance for Stationary Gas Turbines, adopted by reference in Rule 62-204.800(7)(b), F.A.C. The diesel fuel storage tank (Emissions Unit 002) shall comply with all applicable provisions of 40CFR60, Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels, adopted by reference in Rule 62-204.800, F.A.C. Emissions units subject to a specific NSPS subpart shall also comply with the applicable requirements of 40 CFR 60, Subpart A, General Provisions including:

- 40CFR60.7, Notification and Recordkeeping
- 40CFR60.8, Performance Tests
- 40CFR60.11, Compliance with Standards and Maintenance Requirements
- 40CFR60.12, Circumvention
- 40CFR60.13, Monitoring Requirements
- 40CFR60.19, General Notification and Reporting requirements

GENERAL OPERATION REQUIREMENTS

5. Authorized Fuels: The combined cycle gas turbine and ancillary units shall fire only pipeline-quality natural gas or diesel fuel containing no more than 0.05 percent sulfur by weight. [Rules 62-210.200 (Definitions - Potential Emissions) and 62-212.400, F.A.C.]

6. Combined Cycle Gas Combustion Turbine: The maximum heat input to the combined cycle gas turbine shall not exceed 1,680 million Btu per hour (mmBtu/hr) when firing natural gas nor 1,898 mmBtu/hr when firing distillate fuel oil. The heat input limits are based on the lower heating value (LHV) of each fuel, 100% load, and ambient conditions of 25°F temperature, 60% relative humidity, and 14.7 psi pressure. These maximum heat input rates will vary depending upon ambient conditions and the combustion turbine characteristics. Manufacturer's curves corrected for site conditions or equations for correction to other ambient conditions shall be provided to the Department within 45 days of completing the initial compliance testing. [Design, Rule 62-210.200, F.A.C. (Definitions - Potential Emissions)]

7. Hours of Operation: The combined cycle gas turbine may operate 8760 hours per year while firing natural gas. Diesel fuel firing shall not exceed 720 hours during any consecutive 12 months. Power

augmentation while firing gas is permitted 2000 hours per year and is not limited if oxidation catalyst is installed. The 2000-hour limit may be revised at the request of the applicant based upon review of actual performance and control equipment cost-effectiveness following proper public notice. [Applicant Request, Rule 62-210.200 (Definitions - Potential Emissions), F.A.C.]

CONTROL TECHNOLOGY

8. Automated Control System: The permittee shall install an automated gas turbine control system (Speedtronic™ Mark VI). The system shall monitor and control the gas turbine combustion process and operating parameters including, but not limited to: air/fuel distribution and staging, turbine speed, load conditions, temperatures, heat input, and fully automated startup/shutdown. [Design; 62-212.400(BACT), F.A.C.]

9. DLN Combustion Technology: The permittee shall install, tune, operate and maintain the General Electric Dry Low-NO_X combustion system (DLN 2.6 or better) to control NO_X emissions from the combined cycle gas turbine. Prior to the initial emissions performance tests for the gas turbine, the dry low-NO_X combustors and automated gas turbine control system shall be tuned to optimize the reduction of CO, NO_X, and VOC emissions.

   Thereafter, the system shall be maintained and tuned in accordance with the manufacturer's recommendations to minimize these pollutant emissions. The permittee shall provide at least 5 days advance notice prior to any tuning session. The permittee shall provide manufacturer's emissions performance versus load diagrams for the DLN and wet injection systems upon installation and completion of testing. [Design; Rule 62-212.400(BACT), F.A.C.]

10. Wet Injection: A wet injection system shall be installed for use during diesel fuel firing to reduce NO_X emissions from the combustion turbine exhaust entering the HRSG. [Design, Rule 62-212.400, F.A.C.]

11. Selective Catalytic Reduction (SCR) System: The permittee shall install, optimize, operate and maintain an SCR system to control NO_X emissions from the combined cycle gas turbine. The SCR system consists of an ammonia injection grid, catalyst, aqueous ammonia storage, monitoring and control system, electrical, piping and other support equipment. The SCR system shall be designed to control NO_X emissions to the permitted levels with an ammonia slip no greater than 5 ppmvd corrected to 15% oxygen. [Design, Rule 62-212.400, F.A.C.]

12. Drift Eliminators: Drift eliminators shall be installed on the cooling tower to reduce PM/PM_{10} emissions.

EMISSION LIMITS AND STANDARDS

13. Nitrogen Oxides (NO_X) Emissions:

NO_X emissions are defined as oxides of nitrogen measured as NO_2.

a. **Performance Tests**:

When firing natural gas, NO_X emissions from the combined cycle gas turbine shall not exceed 2.5 ppmvd @ 15% oxygen nor 17.2 pounds per hour, based on a 24-hour average.

When firing distillate oil, NO_X emissions from the combined cycle gas turbine shall not exceed 10 ppmvd @ 15% oxygen nor 80 pounds per hour, based on a 24-hour average.

Compliance shall be determined in accordance with EPA Method 7E or Method 20 (40CFR60, Subpart GG).

b. **CEM System**:

When firing natural gas, NO_X emissions from the combined cycle gas turbine shall not exceed 2.5 ppmvd @ 15% oxygen, based on a 24-hour block average.

When firing distillate oil, NO_X emissions from the combined cycle gas turbine shall not exceed 10 ppmvd @ 15% oxygen, based on a 24-hour block average.

Compliance shall be determined by valid data from the required NO_X CEM system.

[Rule 62-212.400, F.A.C., BACT Determination]

14. Carbon Monoxide (CO) Emissions:

a. **Performance Tests**:

When firing natural gas (excluding operation in the Power Augmentation Mode), CO emissions from the combined cycle gas turbine shall not exceed 8 ppmvd @15% O_2 nor 31 pounds per hour, based on a 24-hour average.

When firing natural gas and operating in the Power Augmentation Mode, CO emissions from the combined cycle gas turbine shall not exceed 13 ppmvd @15% O_2 nor 50 pounds per hour, based on a 24-hour average.

When firing diesel fuel, CO emissions from the combined cycle gas turbine shall not exceed 17 ppmvd @15% O_2 nor 70 pounds per hour, based on a 24-hour average.

Compliance shall be determined in accordance with EPA Method 10.

b. **CEM System**:

When firing natural gas, (excluding operation in the Power Augmentation Mode), CO emissions from the combined cycle gas turbine shall not exceed 8 ppmvd @15% O_2 based on a 24-hour block average.

When firing natural gas and operating in the Power Augmentation Mode, CO emissions from the combined cycle gas turbine shall not exceed 13 ppmvd @15% O_2 based on a 24-hour block average.

When firing diesel fuel, CO emissions from the combined cycle gas turbine shall not exceed 17 ppmvd @15% O_2 at 90-100 percent of full load, 19 ppmvd @15% O_2 at 76-89 percent of full load nor 26 ppmvd @ 15% O_2 at 50-75 percent of full load based on a 24-hour block average.

Compliance shall be determined by valid data from the required CO CEM system.

[Rule 62-212.400, F.A.C, BACT Determination]

15. Sulfur Dioxide (SO_2) and Sulfuric Acid Mist Emissions (SAM): The fuel specifications listed Condition No. 5 of this section effectively limit the potential emissions of SO_2 and SAM. Compliance with the fuel sulfur limits shall be demonstrated by the fuel sampling, analysis, record keeping and reporting requirements of Condition No. 27 of this section.
[Rule 62-212.400, F.A.C.; 40 CFR 60.333]

16. PM/PM_{10} and Visible Emissions (VE): When firing either natural gas or diesel fuel, visible emissions shall not exceed 10% opacity, based on a 6-minute average as determined by EPA Method 9. The fuel specifications in conditions No. 5 and 27 of this section combined with the efficient combustion design and good operating practices for the combined cycle gas turbine represent the Best Available Control Technology (BACT) requirements for particulate matter.

    {Permitting Note: Particulate matter emissions are expected to be less than 11 pounds per hour when firing natural gas and less than 36 pounds per hour when firing diesel fuel, as determined by EPA Method 5, front-half catch only.} [Rule 62-212.400(BACT), F.A.C.]

17. Ammonia Emissions: The concentration of ammonia in the stack exhaust gas shall not exceed 5 ppmvd @15% O_2 as determined by EPA Method CTM-027.
[Rules 62-4.070 and 62-212.400(BACT), F.A.C.]

COMPLIANCE DETERMINATION

18. Test Methods: Required tests shall be performed in accordance with the following reference methods.

EPA Method	Description of Method and Comments
CTM-027	Procedure for Collection and Analysis of Ammonia in Stationary Source • This is an EPA conditional test method. • The minimum detection limit shall be 1 ppm.
5	Determination of Particulate Matter Emissions from Stationary Sources • For gas firing, the minimum sampling time shall be two hours per run and the minimum sampling volume shall be 60 dscf per run. • For oil firing, the minimum sampling time shall be one hour per run and the minimum sampling volume shall be 30 dscf per run.
7E	Determination of Nitrogen Oxide Emissions from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources

10	Determination of Carbon Monoxide Emissions from Stationary Sources • The method shall be based on a continuous sampling train. • The ascarite trap may be omitted or the interference trap of section 10.1 may be used in lieu of the silica gel and ascarite traps.
20	Determination of Nitrogen Oxides, Sulfur Dioxide and Diluent Emissions from Stationary Gas Turbines

Except for Method CTM-027, the methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. Method CT-027 is published on EPA's Technology Transfer Network Web Site at "http://www.epa.gov/ttn/emc/ctm.html". No other methods may be used for compliance testing unless prior written approval is received from the administrator of the Department's Emissions Monitoring Section in accordance with an alternate sampling procedure pursuant to 62-297.620, F.A.C. [Rules 62-204.800 and 62-297.100, F.A.C.; 40 CFR 60, Appendix A]

19. Testing Modes of Operation: The permittee shall conduct all required tests for each mode of operation defined below:

    a. **Standard Operation**: Separate tests shall be conducted when firing the combustion turbine with natural gas as well as low sulfur diesel fuel.

    b. **Alternate Mode of Operation**: Separate tests shall be conducted when firing the combustion turbine with natural gas and implementing the power augmentation mode with steam injection. Hourly rates of steam injection for power augmentation (pounds of steam) shall be restricted to the rates that demonstrated compliance during the test for this alternate mode of operation.

    The maximum steam injection rate (lb steam/hour) for power augmentation shall be established in the operation permit. Note: Alternate mode of operation is not allowed when firing low sulfur fuel oil. [Rule 62-4.070(3), F.A.C.]

20. Initial Compliance Tests: The combined cycle gas turbine shall be tested when firing each authorized fuel to demonstrate compliance with the emission standards for CO, NO_X, visible emissions and ammonia slip. The tests must be conducted within 60 days after achieving at least 90% of the maximum permitted capacity, but not later than 180 days after initial operation of the combined cycle gas turbine.

    Tests for CO and NO_X shall be conducted concurrently. Certified CEM system data may be used to demonstrate compliance with all CO and NO_X standards.
    [Rule 62-297.310(7)(a)1., F.A.C.; 40 CFR 60.335]

21. Initial and Quarterly Ammonia Stack Compliance Tests: An initial and quarterly stack emissions test shall be conducted when firing natural gas and fuel oil to demonstrate compliance with the limit on ammonia slip. The initial and annual (one of the quarters) NO_X and ammonia tests shall be conducted at four points within the operating range of the gas turbine. The test results for ammonia slip shall also report the ammonia injection rates and average NO_X emissions during each test run. [Rules 62-4.070 (3) and 62-212.400(BACT), F.A.C.]

22. Annual Compliance Tests: During each federal fiscal year (October 1st to September 30th), the combined cycle gas turbine shall be tested when firing natural gas to demonstrate compliance with the emission standards for CO, NO_X, ammonia slip and visible emissions. If the combined cycle gas turbine fires more than 200 hours of diesel fuel during the federal fiscal year, it shall also be tested for visible emissions and ammonia slip when firing oil. RATA data can substitute for annual compliance testing for CO and NO_X.

23. Tests After Substantial Modifications: All performance tests required for initial start up shall also be required by the Department after any substantial modifications (and shake down period not to exceed 100 days after re-starting the gas turbine) of air pollution control equipment such as installation of an oxidation catalyst or change of combustors. [Rule 62-4.070 (3) F.A.C]

24. Compliance with the CO/NO_X Emissions Limits: Annual compliance with the applicable CO and NOx emissions standards shall also be demonstrated with valid data collected by the required CEM systems during the required annual RATA at permitted capacity. Refer to Specific Conditions 18 and 22. Continuous compliance shall be demonstrated as specified in Specific Conditon 30. [Rule 62-212.400(BACT) and 62-297.310(7)(a)4., F.A.C.]

25. Compliance with the Ammonia Emissions Limits: The permittee shall calculate and report the ppmvd ammonia slip @15% O_2 at the measured lb/hr emission rate as a means of compliance with the BACT standard. The compliance procedures are described in Specific Conditions 18 and 21. [Rule 62-212.400 F.A.C. (BACT)]

26. Compliance with the VE and PM/PM_{10} Emissions Limits: Compliance with the VE limits shall be demonstrated by stack tests. Compliance with the fuel specifications, CO standards, and visible emissions standards of this section shall serve as surrogate standards for particulate matter. [Rule 62-212.400 F.A.C. (BACT)]

27. Compliance with the SO_2/H_2SO_4- Fuel Sulfur Limits: The permittee shall demonstrate compliance with the fuel sulfur limits specified in this permit by maintaining the following records of the sulfur contents.

    a. Compliance with the fuel sulfur limit for *natural gas* shall be demonstrated by keeping reports obtained from the vendor indicating the sulfur content of the natural gas being supplied from the pipeline for each month of operation. Methods for determining the sulfur content of the natural gas shall be ASTM D4084-82, D3246-81 or more recent versions.

    b. Compliance with the *fuel oil* sulfur limit shall be demonstrated by taking a sample, analyzing the sample for fuel sulfur, and reporting the results to each Compliance Authority before initial startup. Sampling the fuel oil sulfur content shall be conducted in accordance with ASTM D4057-88, Standard Practice for Manual Sampling of Petroleum and Petroleum Products, and one of the following test methods for sulfur in petroleum products: ASTM D129-91, ASTM D1552-90, ASTM D2622-94, or ASTM D4294-90. More recent versions of these methods may be used. For each subsequent fuel delivery, the permittee shall maintain a permanent file of the certified fuel sulfur analysis from the fuel vendor. At the request of a Compliance Authority, the permittee shall perform additional sampling and analysis for the fuel sulfur content.

    The above methods shall be used to determine the fuel sulfur content in conjunction with the provisions of 40 CFR 75 Appendix D. [Rules 62-4.070(3) and 62-4.160(15), F.A.C.]

EXCESS EMISSIONS

28. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction are prohibited. These emissions shall be included in the 24-hour compliance averages for NO_X and for CO emissions.
[Rule 62-210.700(4), F.A.C.]

29. Excess Emissions Defined: During startup, shutdown, and documented unavoidable malfunction of the combined cycle gas turbine, the following permit conditions allow excess emissions or the exclusion of monitoring data for specifically defined periods of operation. These conditions apply only if operators employ the best operational practices to minimize the amount and duration of excess emissions during such incidents.

    a. During startup and shutdown, visible emissions shall not exceed 10% opacity except for up to ten, 6-minute averaging periods during any calendar day, which shall not exceed 20% opacity. Data for each 6-minute averaging period shall be exclusive from other 6-minute averaging periods.

    b. *Best Operational Standard*: The unit will reach Mode 5Q with x, y, and z minutes for cold, warm, and hot startups respectively (to minimize CO and NOX emissions). Ammonia injection will be initiated within x, y, and z minutes for cold, warm, and hot startups respectively to minimize NOX emissions. The following measures shall be employed following shutdowns to reduce subsequent excess startup emissions: (Note: Times and measures to be determined for modification of this permit and incorporation of the final conditions into the required Title V Operation permit.

    c. *Low-Load Restriction*: Except for startup and shutdown, operation under DLN Modes 1, 2, 3, and 4 is prohibited.

    d. In accordance with Condition No. 30 of this section, specific data collected by the CEM systems during startup, shutdown, malfunction, and tuning may be excluded from the CO and NO_X compliance averaging periods.

    If a CEM system reports emissions in excess of a 24-hour block emissions standard, the permittee shall notify the Compliance Authority within (1) working day with a preliminary report of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Department may request a written summary report of the incident.

    [G.E. Combined Cycle Startup Curves Data and Rule 62-210.700, F.A.C.]

MONITORING REQUIREMENTS

30. Continuous Emission Monitoring System: The owner or operator shall install, calibrate, maintain, and operate a continuous emission monitoring (CEM) system in the combustion turbine exhaust stack (EU 001) to measure and record the emissions of NO_X and CO in a manner sufficient to demonstrate compliance with the CEM emission standards of this permit. The oxygen content or the carbon dioxide (CO_2) content of the flue gas shall also be monitored at the location where NO_X and CO are monitored to correct the measured CO and NO_X emissions rates to 15% oxygen. If a CO_2 monitor is installed, the oxygen content of the flue gas shall be calculated by the CEM system using F-factors that are appropriate for the fuel fired. The CEM system shall be used to demonstrate compliance with the CEM emission standards for NO_X and CO specified in this permit.

    a. *Data Collection*. Compliance with the CEM emission standards for NO_X and CO shall be based on a 24-hour block average starting at midnight of each operating day. The 24-hour block average shall be calculated from 24 consecutive hourly average emission rate values. If a unit operates less than 24 hours during the block, the 24-hour block average shall be the average of available valid hourly average emission rate values for the 24-hour block. Each hourly value shall be computed using at least one data point in each fifteen minute quadrant of an hour, where the unit combusted fuel during that quadrant of an hour. Notwithstanding this requirement, an hourly value shall be computed from at least two data points separated by a minimum of 15 minutes (where the unit operates for more than one quadrant of an hour). The owner or operator shall use all valid measurements or data points collected during an hour to calculate the hourly averages. All data points collected during an hour shall be, to the extent practicable, evenly spaced over the hour. If the CEM system measures concentration on a wet basis, the CEM system shall include provisions to determine the moisture content of the exhaust gas and an algorithm to enable correction of the monitoring results to a dry basis (0% moisture). Alternatively, the owner or operator may develop through manual stack test measurements a curve of moisture contents in the exhaust gas versus load for each allowable fuel, and use these typical values in an algorithm to enable correction of the monitoring results to a dry basis (0% moisture). Final results of the CEM system shall be expressed as ppmvd, corrected to 15% oxygen.

    b. *NO_X Certification*. The NO_X monitor shall be certified and operated in accordance with the following requirements. The NO_X monitor shall be certified pursuant to 40 CFR Part 75 and shall be operated and maintained in accordance with the applicable requirements of 40 CFR Part 75, Subparts B and C. For purposes of determining compliance with the CEM emission standards of this permit, missing data shall not be substituted. Instead the block average shall be determined using the remaining hourly data in the 24-hour block. Record keeping and reporting shall be conducted pursuant to 40 CFR Part 75, Subparts F and G. The RATA tests required for the NO_X monitor shall be performed using EPA Method 20 or 7E, of Appendix A of 40 CFR 60. The NO_X monitor shall be a dual range monitor. The span for the lower range shall not be

greater than 10 ppm, and the span for the upper range shall not be greater than 30 ppm, as corrected to 15% O_2.

c. *CO, CO_2, and Oxygen Certification.* The CO monitor and CO_2 monitor shall be certified and operated in accordance with the following requirements. The CO monitor shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 4. The CO_2 monitor shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 3. The oxygen monitor shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 3. Quality assurance procedures shall conform to the requirements of 40 CFR 60, Appendix F, and the Data Assessment Report of section 7 shall be made each calendar quarter, and reported semi-annually to each Compliance Authority. The RATA tests required for the CO monitor shall be performed using EPA Method 10, of Appendix A of 40 CFR 60. The Method 10 analysis shall be based on a continuous sampling train, and the ascarite trap may be omitted or the interference trap of section 10.1 may be used in lieu of the silica gel and ascarite traps. The CO monitor shall be a dual range monitor. The span for the lower range shall not be greater than 20 ppm, and the span for the upper range shall not be greater than 60 ppm, as corrected to 15% oxygen. The RATA tests required for the CO_2 monitor shall be performed using EPA Method 3B, of Appendix A of 40 CFR 60. The RATA tests required for the oxygen monitor shall be performed using EPA Method 3B, of Appendix A of 40 CFR 60.

d. *Data Exclusion.* Emissions data for NO_X, CO and CO_2 (or oxygen content) shall be recorded by the CEM system during episodes of startup, shutdown and malfunction. NO_X and CO emissions data recorded during these episodes may be excluded from the block average calculated to demonstrate compliance with the CEM emission standards as provided in this paragraph.

(1) Periods of data excluded for a cold startup shall not exceed four hours in any block 24-hour period. A "*cold star*tup" is defined as a startup to combined cycle operation following a complete shutdown lasting at least 48 hours.

(2) Periods of data excluded for a warm startup shall not exceed two hours in any block 24-hour period. A "*warm startup*" is defined as a startup to combined cycle operation following a complete shutdown lasting 8 hours or more, but less than 48 hours.

(3) Periods of data excluded for a hot startup shall not exceed one hour in any block 24-hour period. A "*hot startup*" is defined as a startup to combined cycle operation following a complete shutdown lasting less than 8 hours.

(4) Periods of data excluded for a shutdown shall not exceed three hours in any block 24-hour period. A "*shutdown*" is the process of bringing a gas turbine off line and ending fuel combustion.

(5) Periods of data excluded for a documented unavoidable malfunction shall not exceed two hours in any 24-hour block period. A "*documented unavoidable malfunction*" is a

malfunction beyond the control of the operator that is documented within 24 hours of occurrence by contacting each Compliance Authority by telephone or facsimile transmittal.

(6) If the permittee provides at least five days advance notice prior to a *tuning session*, data may be excluded from the block average calculated to demonstrate compliance with the CEM emission standards. Periods of data excluded for such episodes shall not exceed a total of three hours in any 24-hour block period. Tuning sessions must be performed in accordance with the manufacturer's recommendations. No more than two tuning sessions are expected during any year.

All periods of data excluded for any startup, shutdown or malfunction episode shall be consecutive for each episode. The permittee shall minimize the duration of data excluded for startup, shutdown and malfunctions, to the extent practicable. Data recorded during startup, shutdown or malfunction events shall not be excluded if the startup, shutdown or malfunction episode was caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure, which may reasonably be prevented.

Best operational practices shall be used to minimize hourly emissions that occur during episodes of startup, shutdown and malfunction. Emissions of any quantity or duration that occur entirely or in part from poor maintenance, poor operation, or any other equipment or process failure, which may reasonably be prevented, shall be prohibited.

e. *Data Exclusion Reports.* A summary report of duration of data excluded from the block average calculation, and all instances of missing data from monitor downtime, shall be reported semi-annually to each Compliance Authority. This report shall be consolidated with the report required pursuant to 40 CFR 60.7. For purposes of reporting "excess emissions" pursuant to the requirements of 40 CFR 60.7, excess emissions shall be defined as the hourly emissions which are recorded by the CEM system during periods of data excluded for episodes of startup, shutdown and malfunction, as allowed above. The duration of excess emissions shall be the duration of the periods of data excluded for such episodes. Reports required by this paragraph and by 40 CFR 60.7 shall be submitted no less than semi-annually, including semi-annual periods in which no data is excluded or no instances of missing data occur.

f. *Data Conversion.* Upon request from the Department, the CEM systems emission rates shall be corrected to ISO conditions to demonstrate compliance with the applicable standards of 40 CFR 60.332.

g. *Availability.* The NO_X and CO monitor availability threshold shall not be less than 95% in any calendar quarter. The report required by this section shall be used to demonstrate monitor availability. In the event 95% availability is not achieved, the owner or operator shall provide the Department with a report identifying the problems in achieving 95% availability and a plan of corrective actions that will be taken to achieve 95% availability. The owner or operator shall implement the reported corrective actions within the next calendar quarter.

{Permitting Note 1: As required by EPA's March 12, 1993 determination, the NO_X monitor shall meet the applicable requirements of 40 CFR 60.13, Appendix B and Appendix F for certifying, maintaining, operating and assuring the quality of the system; shall be capable of calculating NO_X emissions concentrations corrected to 15% oxygen; shall have no less than 95% monitor availability in any given calendar quarter; and shall provide a minimum of four data points for each hour and calculate an hourly average. The requirements for the CEMS specified by the specific conditions of this permit satisfy these requirements.}

{Permitting Note 2: Compliance with these requirements will ensure compliance with the other applicable CEM system requirements such as: NSPS Subpart GG; Rule 62-297.520, F.A.C.; 40 CFR 60.7(a)(5) and 40 CFR 60.13; 40 CFR Part 51, Appendix P; 40 CFR 60, Appendix B - Performance Specifications; and 40 CFR 60, Appendix F - Quality Assurance Procedures.}

[Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

31. Ammonia Monitoring Requirements: In accordance with the manufacturer's specifications, the permittee shall install, calibrate, maintain and operate, an ammonia flow meter to measure and record the ammonia injection rate to the SCR system. The permittee shall document the general range of ammonia flow rates required to meet emissions limitations over the range of combustion turbine load conditions allowed by this permit by comparing NO_X emissions recorded by the NO_X monitor with ammonia flow rates recorded using the ammonia flow meter. During NO_X monitor downtimes or malfunctions, the permittee shall operate at the ammonia flow rate that is consistent with the documented flow rate for the combustion turbine load. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

32. SCR Operational Requirements: The SCR shall operate at all times that the turbine is operating, except during turbine start-up and shutdown periods, as dictated by the manufacturer's guidelines and in accordance with this permit. During turbine start-up, permittee shall begin use of SCR (i.e., commence ammonia injection) as soon as possible and within two (2) hours of the initial turbine firing or when the temperature of the catalyst bed reaches a suitable predetermined temperature level, whichever occurs first. During turbine shutdown, permittee shall discontinue use of the SCR (i.e., discontinue ammonia injection) when the catalyst bed temperature drops below the predetermined temperature levels, but no more than one hour prior to the time at which the fuel feed to the turbine is discontinued.

    Suitable temperature for activation and deactivation of the SCR shall be established during performance testing. The permittee shall, whenever possible, operate the facility in a manner so as to optimize the effectiveness of the SCR unit while minimizing ammonia slip to below the emission limit. Design, Rule 62-212.400, F.A.C.]

33. Fuel Consumption Monitoring of Operations: To demonstrate compliance with the fuel consumption limits, the permittee shall monitor and record the rates of consumption of each allowable fuel in accordance with the provisions of 40 CFR 75 Appendix D. To demonstrate compliance with the turbine capacity requirements, the permittee shall monitor and record the operating rate of the

combined cycle gas turbine on a daily average basis, considering the number of hours of operation during each day (including the times of startup, shutdown and malfunction).

Such monitoring shall be made using a monitoring component of the CEM system required above, or by monitoring daily rates of consumption and heat content of each allowable fuel in accordance with the provisions of 40 CFR 75 Appendix D. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

34. Fuel Consumption Rates Monthly Monitoring: By the fifth calendar day of each month, the permittee shall record the monthly fuel consumption and hours of operation for the gas turbine. The information shall be recorded in a written (or electronic log) and shall summarize the previous month of operation and the previous 12 months of operation. Information recorded and stored as an electronic file shall be available for inspection and printing within at least three days of a request by the Department. [Rule 62-4.070(3), F.A.C.]

NOTIFICATION, REPORTING, AND RECORDKEEPING

35. Records: All measurements, records, and other data required to be maintained by CPV shall be recorded in a permanent form and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. These records shall be made available to DEP representatives upon request. [Rules 62-4.160 and 62-213.440, F.A.C]

36. NSPS Notifications: All notifications and reports required by the 40CFR 60, Subpart A applicable requirements shall be submitted to each Compliance Authority.

37. Semi-Annual Reports: Semi-annual excess emission reports, in accordance with 40 CFR 60.7 (a)(7)(c) (2000 version), shall be submitted to each Compliance Authority.

38. Continuous Compliance with the 74.9 MW Steam Power Generated Limitation: Electrical power from the steam-electrical generator shall be limited to 74.9 MW (as measured at the generator) on an hourly basis. CPV Cana shall be capable of demonstrating to the Department, continuous compliance with the 74.9 MW rolling one-hour average limit by the stored information in the power plant's electronic data system.