



# Florida Department of Environmental Protection

## Memorandum

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TO: Michael G. Cooke, Division of Air Resource Management

THRU: Trina Vielhauer, Bureau of Air Regulation   
Al Linero, Air Permitting South Program

FROM: Jeff Koerner, Air Permitting South Program 

DATE: April 14, 2005

SUBJECT: Air Permit No. 0950203-003-AC  
Northern Star Generation Services  
Orlando Cogen Plant  
"NM" Gas Turbine Upgrade Plus Inlet Air Fogger Project

The Final Permit for this project is attached for your approval and signature, which authorizes the upgrade of the existing Alston 79 MW (ISO) gas turbine from a Model GT 11N1 to a Model GT 11NM and the installation of an inlet air fogging system. The new equipment will be installed at the existing Orlando Cogen Plant, which is located in Orange County at 8275 Exchange Drive, Orlando, Florida. As noted in the attached Final Determination, only minor changes and clarifications were made. The project results in a minor source air construction permit and is not subject to PSD preconstruction review.

Day #90 is June 22, 2005. I recommend your approval of the attached Final Permit for this project.

Attachments

## ADDRESSES

Mr. Todd Shirley, Plant Manager  
Northern Star Generation Services - Orlando Cogen Plant  
8275 Exchange Drive  
Orlando, FL 32809

Mr. Scott Wesson  
PBS&J  
482 South Keller Road  
Orlando, FL 32810-6101

Mr. Len Kozlov  
Florida Department of Environmental Protection  
Central District Office, Air Resources Section  
3319 Maguire Boulevard, Suite 232  
Orlando, Florida 32803-3767

Ms. Marie Driscoll  
Orange County Environmental Protection Division, Air Program  
800 Mercy Drive  
Orlando, FL 32808

Mr. Gregg Worley  
Air, Radiation Technology Branch, Preconstruction/HAP Section  
U.S. EPA – Region 4 Office  
Atlanta Federal Center  
61 Forsyth Street, SW  
Atlanta, GA 30303-8960

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

NOTICE OF FINAL PERMIT

In the Matter of an  
Application for Permit by:

Northern Star Generation Services – Orlando Cogen Plant  
8275 Exchange Drive  
Orlando, FL 32809

Orlando Cogen Limited, L.P.  
Air Permit No. 0950203-003-AC  
Facility ID No. 0950203  
Project: NM GT Upgrade Plus Fogger

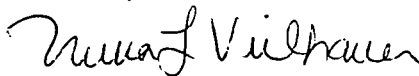
*Authorized Representative:*

Mr. Todd Shirley, Plant Manager

Enclosed is Final Air Permit No. 0950203-003-AC, which authorizes the upgrade of the existing Alston 79 MW (ISO) gas turbine from a Model GT 11N1 to a Model GT 11NM and the installation of an inlet air fogging system. The new equipment will be installed at the existing Orlando Cogen Plant, which is located in Orange County at 8275 Exchange Drive, Orlando, Florida. As noted in the attached Final Determination, only minor changes and clarifications were made. This permit is issued pursuant to Chapter 403, Florida Statutes.

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

Executed in Tallahassee, Florida.



Trina Vielhauer, Chief  
Bureau of Air Regulation

CERTIFICATE OF SERVICE

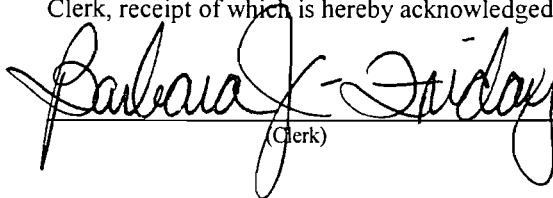
The undersigned duly designated deputy agency clerk hereby certifies that this Notice of Final Permit (including the Final permit) was sent by certified mail (\*) and copies were mailed by U.S. Mail before the close of business on 4/15/05 to the persons listed:

Mr. Todd Shirley, Orlando Cogen\*  
Mr. Scott Wesson, PBS&J  
Mr. Len Kozlov, Central District Office

Ms. Marie Driscoll, Orange County EPD  
Mr. Gregg Worley, EPA Region 4 Office

Clerk Stamp

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

  
(Clerk) 4/15/05 (Date)

## FINAL DETERMINATION

### **PERMITTEE**

Northern Star Generation Services – Orlando Cogen Plant  
8275 Exchange Drive  
Orlando, FL 32809

#### *Authorized Representative:*

Mr. Todd Shirley, Plant Manager

### **PERMITTING AUTHORITY**

Florida Department of Environmental Protection  
Division of Air Resource Management  
Bureau of Air Regulation, Air Permitting South Program  
2600 Blair Stone Road, MS #5505  
Tallahassee, Florida, 32399-2400

### **PROJECT**

Air Permit No. 0950203-003-AC  
Orlando Cogen Limited, L.P.

This permit authorizes the upgrade of the existing Alston 79 MW (ISO) gas turbine from a Model GT 11N1 to a Model GT 11NM and the installation of an inlet air fogging system. The new equipment will be installed at the existing Orlando Cogen Plant, which is located in Orange County at 8275 Exchange Drive, Orlando, Florida.

### **NOTICE AND PUBLICATION**

The Department distributed an "Intent to Issue Permit" package on March 23, 2005. The applicant published the "Public Notice of Intent to Issue" in the Orlando Sentinel on March 30, 2005. The Department received the proof of publication on April 7, 2005. No petitions for administrative hearings or extensions of time to petition for an administrative hearing were filed.

### **COMMENTS**

No comments on the Draft Permit were received from the public, the Department's Central District Office, the Orange County Environmental Protection Division, EPA Region 4, or the applicant.

### **CONCLUSION**

Only minor revisions were made to correct typographical errors. The final action of the Department is to issue the permit with the changes described above.



# Department of Environmental Protection

Jeb Bush  
Governor

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

Colleen M. Castille  
Secretary

## PERMITTEE:

Northern Star Generation Services – Orlando Cogen Plant  
8275 Exchange Drive  
Orlando, FL 32809

### Authorized Representative:

Mr. Todd Shirley, Plant Manager

Orlando Cogen Limited, L.P.  
Air Permit No. 0950203-003-AC  
Facility ID No. 0950203  
SIC No. 4931  
Permit Expires: July 1, 2008

## PROJECT AND LOCATION

This permit authorizes the upgrade of the existing Alston 79 MW (ISO) gas turbine from a Model GT 11N1 to a Model GT 11NM and the installation of an inlet air fogging system. The new equipment will be installed at the existing Orlando Cogen Plant, which is located in Orange County at 8275 Exchange Drive, Orlando, Florida. The UTM coordinates are Zone 17, 459.5 km East, and 3146.1 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.) and Title 40, Part 60 of the Code of Federal Regulations. 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.

## CONTENTS

- Section 1. General Information
- Section 2. Administrative Requirements
- Section 3. Emissions Units Specific Conditions
- Section 4. Appendices

Michael G. Cooke, Director  
Division of Air Resource Management

4-15-05

(Date)

**SECTION 1. GENERAL INFORMATION**

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**FACILITY AND PROJECT DESCRIPTION**

The existing facility consists of a 129 MW combined cycle gas turbine system. This project will only affect the following existing emissions unit.

ID	Emission Unit Description
001	The existing 79 MW (ISO) Alstom Model GT 11N1 gas turbine will be upgraded to a Model NM unit.

**REGULATORY CLASSIFICATION**

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

Title IV: The gas turbine is subject to the acid rain provisions of the Clean Air Act.

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

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

NSPS: The gas turbine is subject to the New Source Performance Standards in Subpart GG 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. The gas turbine remains subject the applicable terms and conditions of original Permit No. PSD-FL-184 issued in 1992. This current minor source air construction permit supplements the original PSD permit.

## SECTION 2. ADMINISTRATIVE REQUIREMENTS

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1. Permitting Authority: All documents related to applications for permits to construct, modify, or operate emissions units regulated by this permit shall be submitted to the Bureau of Air Regulation of the Florida Department of Environmental Protection (DEP) at 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400.
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Air Resource Section of the Orange County Environmental Protection Division, 800 Mercy Drive, Orlando, FL 32808.
3. Appendices: The following Appendices are attached as part of this permit: Appendix CF (Citation Format); Appendix GC (General Conditions); and Appendix SC (Common 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: The permittee shall apply for a Title V operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after completing the gas turbine upgrade to an "NM" model and commencing operation. To apply for a 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. The application shall be submitted to the appropriate Permitting Authority with copies to the Compliance Authority. *{Permitting Note: The fogging project does not result in any additional permit requirements other than notification of the construction schedule. Therefore, the fogging project shall be included with the Title V revision application submitted for the gas turbine upgrade project or at the next re-opening of the Title V permit for some other cause.}* [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

## SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

### A. 79 MW Alstom Gas Turbine (EU-001)

This section of the permit addresses the following emissions unit.

ID	Emission Unit Description
001	79 MW (ISO) Alstom Model GT 11NM gas turbine

#### ADMINISTRATIVE REQUIREMENTS

1. Previous Permit Conditions: Issuance of this permit does not alter any requirements established in any previously issued air construction or Title V operation permits for the existing gas turbine. The conditions of this minor air construction permit supplement, and are in addition to, all current valid requirements. [Rule 62-210.300, F.A.C.]

#### PROPOSED PROJECTS

2. Gas Turbine Upgrade: The permittee is authorized to upgrade the existing 79 MW (ISO) Alstom Model GT 11N1 gas turbine to a Model NM unit by the following physical changes: increasing the channel height, equalizing the turbine stage loading, using airfoils with improved aerodynamics, implementing advanced blade cooling technology, and improving the seals to reduce air leakage. The upgrade is designed to improve the thermal efficiency of the unit. [Application]
3. Fogging System: The permittee is authorized to install a high-pressure fogging system consisting of nozzles, piping, pumps, control system, etc. The fogging system will be designed to provide evaporative cooling of the compressor inlet air stream to produce additional power. [Application]
4. Notifications: Within one week of beginning construction on each project, the permittee shall provide notification that construction has commenced including a schedule for completing the project. The permittee shall also provide notice if a project will not be constructed. The schedule shall be updated for any major changes as necessary. *{Permitting Note: The projects are likely to be constructed in separate phases over two different outages.}* [Rule 6-4.070(3), F.A.C.]

#### EMISSIONS AND PERFORMANCE REQUIREMENTS

*{Permitting Note: The authorized projects will not alter the permitted emissions rates, permitted capacity, authorized fuel, or other current operational requirements.}*

#### TESTING REQUIREMENTS

5. Initial Compliance Tests: The gas turbine shall be tested to demonstrate initial compliance with the existing emissions standards for carbon monoxide specified in the Title V permit. The initial tests shall be conducted within 60 days after completing the gas turbine upgrade. The tests shall consist of at least three 1-hour test runs conducted in accordance with EPA Method 10 and EPA Methods 1-4 as necessary. For each of the CO test runs, nitrogen oxides (NOx) emissions data collected from the installed CEMS shall be used to demonstrate compliance with the NOx standard. Other notification, testing, and reporting requirements are specified in Appendix C. *{Permitting Note: No initial tests are required after the installation of the inlet fogging system.}* [Rule 62-297.310(7)(a)1, F.A.C.]

#### ANNUAL REPORTING

6. CO/NOx Emissions Reports: For a period of five years following completion of the gas turbine upgrade, the permittee shall submit an annual report demonstrating that the project did not result in a significant increase in CO and NOx emissions. The first report shall be submitted for the first full calendar year after completing the gas turbine upgrade. Reports shall be submitted by March 1<sup>st</sup> of each year and may be submitted along with the required Annual Operating Report. When calculating any increase in emissions resulting from the project, the permittee shall exclude 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 project, including any increased utilization due to the rate of electricity demand growth for the utility system as a whole. The baseline emissions for operation prior to the project are 3 tons per year of CO and 232 tons per year of NOx. *{Permitting Note: These reports are required only after completion of the gas turbine upgrade. The fogging project does not invoke these reporting requirements.}* [Rule 62-210.200(11)(d), F.A.C. and 40 C.F.R.52.21(b)(33)]



## SECTION 4. APPENDICES

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Appendix A. Citation Formats

Appendix B. General Conditions

Appendix C. Common Conditions

**SECTION 4. APPENDIX A**  
**CITATION FORMATS**

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*The following examples illustrate the format used in the permit to identify applicable permitting actions and regulations.*

**REFERENCES TO PREVIOUS PERMITTING ACTIONS**

Old Permit Numbers

*Example:* Permit No. AC50-123456 or Air Permit No. AO50-123456

*Where:* “AC” identifies the permit as an Air Construction Permit  
“AO” identifies the permit as an Air Operation Permit  
“123456” identifies the specific permit project number

New Permit Numbers

*Example:* Permit Nos. 099-2222-001-AC, 099-2222-001-AF, 099-2222-001-AO, or 099-2222-001-AV

*Where:* “099” represents the specific county ID number in which the project is located  
“2222” represents the specific facility ID number  
“001” identifies the specific permit project  
“AC” identifies the permit as an air construction permit  
“AF” identifies the permit as a minor federally enforceable state operation permit  
“AO” identifies the permit as a minor source air operation permit  
“AV” identifies the permit as a Title V Major Source Air Operation Permit

PSD Permit Numbers

*Example:* Permit No. PSD-FL-317

*Where:* “PSD” means issued pursuant to the Prevention of Significant Deterioration of Air Quality  
“FL” means that the permit was issued by the State of Florida  
“317” identifies the specific permit project

**RULE CITATION FORMATS**

Florida Administrative Code (F.A.C.)

*Example:* [Rule 62-213.205, F.A.C.]

*Means:* Title 62, Chapter 213, Rule 205 of the Florida Administrative Code

Code of Federal Regulations (CFR)

*Example:* [40 CFR 60.7]

*Means:* Title 40, Part 60, Section 7

**SECTION 4. APPENDIX B**  
**GENERAL CONDITIONS**

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The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
  - a. Have access to and copy and records that must be kept under the conditions of the permit;
  - b. Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
  - c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
  - a. A description of and cause of non-compliance; and
  - b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida

**SECTION 4. APPENDIX B**  
**GENERAL CONDITIONS**

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Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
12. This permit or a copy thereof shall be kept at the work site of the permitted activity.
13. This permit also constitutes:
  - a. Determination of Best Available Control Technology (not applicable to project);
  - b. Determination of Prevention of Significant Deterioration (not applicable to project); and
  - c. Compliance with New Source Performance Standards (not applicable to project).
14. The permittee shall comply with the following:
  - a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
  - b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
  - c. Records of monitoring information shall include:
    - 1) The date, exact place, and time of sampling or measurements;
    - 2) The person responsible for performing the sampling or measurements;
    - 3) The dates analyses were performed;
    - 4) The person responsible for performing the analyses;
    - 5) The analytical techniques or methods used; and
    - 6) The results of such analyses.
15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

**SECTION 4. APPENDIX C**  
**COMMON CONDITIONS**

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*{Permitting Note: Unless otherwise specified in the permit, the following conditions apply to all emissions units and activities at the facility.}*

**EMISSIONS AND CONTROLS**

1. **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.]
2. **Circumvention:** The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]
3. **Excess Emissions Allowed:** Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]
4. **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 shall be prohibited. [Rule 62-210.700(4), F.A.C.]
5. **Excess Emissions - Notification:** In case of excess emissions resulting from malfunctions, the permittee shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]
6. **VOC or OS Emissions:** No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]
7. **Objectionable Odor Prohibited:** No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and 62-210.200(203), F.A.C.]
8. **General Visible Emissions:** No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20 percent opacity. This regulation does not impose a specific testing requirement. [Rule 62-296.320(4)(b)1, F.A.C.]
9. **Unconfined Particulate 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**

10. **Required Number of Test Runs:** For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]

**SECTION 4. APPENDIX C**  
**COMMON CONDITIONS**

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11. 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), F.A.C.]
12. 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.]
13. Test Procedures: Tests shall be conducted in accordance with all applicable requirements of Chapter 62-297, F.A.C.
- a. *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 thirty (30) minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur.
  - b. *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.
  - 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), F.A.C.]
14. Determination of Process Variables
- a. *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.
  - b. *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), F.A.C.]
15. Sampling Facilities: The permittee shall install permanent stack sampling ports and provide sampling facilities that meet the requirements of Rule 62-297.310(6), F.A.C.
16. Test Notification: The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator. [Rule 62-297.310(7)(a)9, F.A.C.]
17. 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.]
18. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the

**SECTION 4. APPENDIX C**  
**COMMON CONDITIONS**

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test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information:

1. The type, location, and designation of the emissions unit tested.
2. The facility at which the emissions unit is located.
3. The owner or operator of the emissions unit.
4. The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
5. The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
6. The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
7. A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
8. The date, starting time and duration of each sampling run.
9. The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
10. The number of points sampled and configuration and location of the sampling plane.
11. For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
12. The type, manufacturer and configuration of the sampling equipment used.
13. Data related to the required calibration of the test equipment.
14. Data on the identification, processing and weights of all filters used.
15. Data on the types and amounts of any chemical solutions used.
16. Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
17. The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
18. All measured and calculated data required to be determined by each applicable test procedure for each run.
19. The detailed calculations for one run that relate the collected data to the calculated emission rate.
20. The applicable emission standard and the resulting maximum allowable emission rate for the emissions unit plus the test result in the same form and unit of measure.
21. A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

**RECORDS AND REPORTS**

19. 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.]
20. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(2), F.A.C.]

**SENDER: COMPLETE THIS SECTION**

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

1. Article Addressed to:

Mr. Todd Shirley, Plant Manager  
 Northern Star Generation Services -  
 Orlando Cogen Plant  
 8275 Exchange Drive  
 Orlando, Florida 32809

2. Article Number

(Transfer from service label)

7000 2870 0000 7028 0375

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X

*[Handwritten Signature]*

Agent

Addressee

B. Received by (Printed Name)

C. Date of Delivery

7/18

D. Is delivery address different from item 1?  Yes

If YES, enter delivery address below:  No

3. Service Type

Certified Mail

Express Mail

Registered

Return Receipt for Merchandise

Insured Mail

C.O.D.

4. Restricted Delivery? (Extra Fee)

Yes

PS Form 3811, August 2001

Domestic Return Receipt

102595-02-M-1540

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

7000 2870 0000 7028 0375

Mr. Todd Shirley, Plant Manager

Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
<b>Total Postage &amp; Fees</b>	<b>\$</b>

Postmark  
Here

Sent To

Mr. Todd Shirley, Plant Manager

Street, Apt. No.; or PO Box No.

8275 Exchange Drive

City, State, ZIP+4

Orlando, Florida 32809

PS Form 3800, May 2000

See Reverse for Instructions



 **NORTHERN STAR  
GENERATION SERVICES  
COMPANY LLC**

Operating Agent for Orlando Cogen Limited, L.P.  
8275 Exchange Drive  
Orlando, FL 32809  
(407) 851-1350 (office)  
(407) 851-1686 (fax)

April 6, 2005

Bureau of Air Regulation  
Florida Department of Environmental Protection  
2600 Blair Stone Rd., MS #5505  
Tallahassee, FL 32399-2400  
850/488-0114

**RECEIVED**

APR 07 2005

BUREAU OF AIR REGULATION

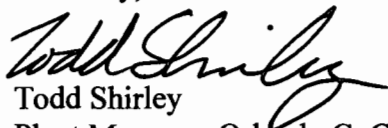
**RE: Orlando CoGen Limited, L.P.**  
**Permit No.: 0950203-003-AC**  
**Facility ID No.: 0950203**  
**Project Engineer: Mr. Jeff Koerner**  
**Re – Notification of Public Notice**

To Whom It May Concern:

On February 24, 2005, Orlando Cogen Limited, L.P. submitted an application requesting authorization to upgrade the existing gas turbine and add a fogging system. The gas turbine is installed at the existing Orlando Cogen Plant, which is located in Orange County at 8275 Exchange Drive, Orlando, Florida. Enclosed is the Proof of Publication of the Public Notice for Permit No. 0950203-003-AC. The required Public Notice was posted in the Orlando Sentinel on March 30, 2005. It is my understanding that the 14 day public comment period will end on April 12, 2005.

If you have any questions regarding this project or need additional information, please contact me at 407-851-1350 or David Kellermeyer of Northern Star Generation Services Company LLC at 713-580-6368.

Sincerely,

  
Todd Shirley  
Plant Manager, Orlando CoGen

Attachment

cc: David Kellermeyer, Northern Star Generation Services Company LLC  
Scott Wesson, PBS&J

# Orlando Sentinel

Published Daily

State of Florida } S.S.  
COUNTY OF ORANGE

Before the undersigned authority personally appeared DORIS J. HORTON

who on oath says that he/she is the Legal Advertising Representative of Orlando Sentinel, a daily newspaper published at ORLANDO in ORANGE County, Florida;

that the attached copy of advertisement, being a PUBLIC NOTICE OF in the matter of 807 50207-005-10

in the ORANGE Court, was published in said newspaper in the issue; of 03/30/05

Affiant further says that the said Orlando Sentinel is a newspaper published at ORLANDO, in said ORANGE County, Florida, and that the said newspaper has heretofore been continuously published in said ORANGE County, Florida, each Week Day and has been entered as second-class mail matter at the post office in ORLANDO in said ORANGE County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he/she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

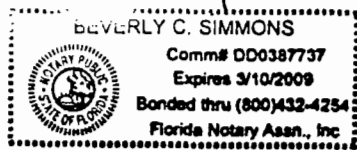
*Doris J. Horton*

The foregoing instrument was acknowledged before me this 31st day of MARCH, 20 05, by DORIS J. HORTON

who is personally known to me and who did take an oath.

*Beverly C. Simmons*

(SEAL)



### PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

Florida Department of Environmental Protection  
Draft Air Permit No. 0950203-003-AC  
Northern Star Generation Services - Orlando Cogen Plant  
Orange County, Florida

Applicant: The applicant for this project is the Northern Star Generation Services - Orlando Cogen Limited, L.P. The applicant's authorized representative and mailing address is: Mr. Todd Shirley, Plant Manager; Northern Star Generation Services - Orlando Cogen Plant; 8275 Exchange Drive; Orlando, FL 32809.

Facility Location: Northern Star Generation Services operates the Orlando Cogen Plant, which is located in Orange County at 8275 Exchange Drive, Orlando, Florida.

Project: The plant currently consists of a nominal 129 MW (total) combined cycle gas turbine and ancillary equipment. The plant proposes to upgrade the existing gas turbine from an Alstom Model GT 11N1 to an Alstom Model GT 11NM and to install an evaporative-cooling fogging system. The purpose of the NM upgrade project is to improve the thermal efficiency of the unit. The fogging system will be used on warm days to cool the inlet compressor air for increased power production. Both the NM upgrade and the fogging system are expected to reduce dependence on the existing duct burner system that fires natural gas.

The 129 MW combined cycle gas turbine is considered an electric utility steam generating unit. As such, the applicant predicts that emissions will not significantly increase after completion of the project based on future representative actual emissions. Therefore, the project is not submit to preconstruction review for the Prevention of Significant Deterioration (PSD). The Department agrees and intends to issue a draft permit authorizing the project with the requirements to test and report CO and NOx emissions for a 5-year period following completion of the project. Details of the application and the enclosed "Technical Evaluation and Preliminary Determination".

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

**Project File:** A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m. Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confi-

dential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address or phone number listed above. A copy of the complete project file is also available at the Air Resources Section of the Department's Central District Office at 3319 Maguire Boulevard, Suite 232, Orlando, Florida 32803-3767. The telephone number is 407/894-7555.

**Notice of Intent to Issue Air Permit:** The Permitting Authority gives notice of its intent to issue a permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

**Comments:** The Permitting Authority will accept written comments concerning the proposed Draft Permit for a period of fourteen (14) days from the date of publication of this Public Notice. Written comments must be provided to the Permitting Authority at the above address. Any written comments filed will be made available for public inspection. If written comments received result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice.

**Petitions:** A persons whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. 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 this Public Notice or receipt of a written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within fourteen (14) days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.56 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address and telephone number of the petitioner; the name address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial rights will be affected by the agency deter-

mination; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and, (g) A statement of the relief sought by the petitioner, stating precisely the action of the agency's proposed action; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

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

**Mediation:** Mediation is not available for this proceeding.

COR6112226 3/30/05


# Florida Department of Environmental Protection

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## Memorandum

TO: Trina Vielhauer, Chief  
Bureau of Air Regulation

THROUGH: Al Linero, Manager  
Air Permitting South Program

FROM: Jeff Koerner, Air Permitting South Program 

DATE: March 17, 2005

SUBJECT: Draft Air Permit No. 0950203-003-AC  
Northern Star Generation Services – Orlando Cogen Plant  
NM Upgrade Plus Fogger Project

Attached for your review are the following items:

- Intent to Issue Permit and Public Notice Package;
- Technical Evaluation and Preliminary Determination;
- Draft Permit; and
- PE Certification

The draft permit authorizes an upgrade of the existing gas turbine to improve efficiency and installation of an evaporative-cooling fogger system. The new equipment will be installed at the existing Orlando Cogen Plant, which is located in Orange County at 8275 Exchange Drive, Orlando, Florida.

The Technical Evaluation and Preliminary Determination provides a detailed description of the project, rule applicability, and emissions standards. The P.E. certification briefly summarizes the proposed project. Day #74 is May 23, 2005. I recommend your approval of the attached Draft Permit for this project.

Attachments

**TECHNICAL EVALUATION  
&  
PRELIMINARY DETERMINATION**

**PROJECT**

Draft Air Construction Permit No. 0950203-003-AC  
Gas Turbine Upgrade Project

**COUNTY**

Orange County

**APPLICANT**

Orlando Cogen Limited, L.P.  
(Operating Agent: Northern Star Generation Services Company, LLC)  
ARMS Facility ID No. 0950203

**PERMITTING  
AUTHORITY**

Florida Department of Environmental Protection  
Division of Air Resource Management  
Bureau of Air Regulation  
Air Permitting South



March 17, 2005

{Filename: 0950203-003-AC - TEPD}

## **1. GENERAL PROJECT INFORMATION**

Northern Star Generation Services Company LLC operates the Orlando Cogen Plant, which consists of a 129 MW combined cycle gas turbine cogeneration facility (SIC No. 4911) located at 8275 Exchange Drive in Orlando, Florida. The existing facility is subject to the following regulatory categories.

Title III: Based on the Title V renewal permit, the facility is not a major source of hazardous air pollutants.

Title IV: The gas turbine is subject to the Phase II acid rain provisions of the Clean Air Act.

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

PSD: The facility is a PSD-major facility in accordance with Rule 62-212.400, F.A.C.

NSPS: The gas turbine is subject to the New Source Performance Standards in 40 CFR 60, Subpart GG.

The gas turbine was originally subject to PSD preconstruction review in 1992 and constructed in accordance with Permit No. PSD-FL-184. On February 24, 2005, the permittee submitted an application requesting authorization to physically upgrade the existing Alstom gas turbine (EU-001) from a Model GT 11N1 to a Model GT 11NM. The upgrade includes increasing the gas channel height, equalizing the turbine stage loading, using airfoils with improved aerodynamics, implementing advanced cooling blade technology, and adding improved sealing technology to reduce air leakage. All of the changes will occur downstream of the dry low-NOx combustions system. The overall impact of the upgrade will be to improve the thermal efficiency, which will allow increased generating capacity while firing less fuel.

In addition, the application requests authorization to add an inlet air fogging system that will reduce the inlet compressor temperature on hot days to provide additional power generation. The proposed system will be designed to inject approximately 24 gpm of de-ionized water at high pressures (1000 to 3000 psi) into the inlet air duct to create very fine fog droplets about 10 microns in diameter. The inlet air is cooled adiabatically when the water droplets evaporate. The system is designed to evaporate all droplets before reaching the turbine. The maximum temperature decrease can be about 22° F, which would result in approximately a 7.7% increase in power generation (~ 5 MW). The increased power generation will allow the plant to meet the contracted production rates while reducing duct firing, which is a less efficient means of generating power. Fogging is expected to result in lower gas consumption and emissions from the HRSG duct burner.

## **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.

<u>Chapter</u>	<u>Description</u>
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, Circumvention, Excess Emissions, and Forms
62-212	Preconstruction Review, PSD Requirements, and BACT Determinations Rule 62-212.300. General Preconstruction Review Requirements Rule 62-212.400. Prevention of Significant Deterioration (PSD Review Only)
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**

The Environmental Protection Agency establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 identifies New Source Performance Standards (NSPS) for a variety of industrial activities. Part 61 specifies the National Emissions Standards for Hazardous Air Pollutant (NESHAP) based on specific pollutants. Part 63 identifies National Emissions Standards for Hazardous Air Pollutant (NESHAP) based on the Maximum Achievable Control Technology (MACT) for given source categories. These regulations are adopted by reference in Florida Rule 62-204.800, F.A.C. The gas turbine is already subject to NSPS Subpart GG for stationary source gas turbines. The gas turbine is considered an existing unit (no applicable requirements) with regard to NESHAP Subpart YYYYY.

### **Prevention of Significant Deterioration (PSD) of Air Quality**

The Department regulates major air pollution facilities in accordance with Florida's Prevention of Significant Deterioration (PSD) program, as defined in Rule 62-212.400, F.A.C. A PSD review is required in areas currently in attainment with the state and federal Ambient Air Quality Standards (AAQS) or areas designated as "unclassifiable" for a given pollutant. A 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, each regulated pollutant is reviewed for PSD applicability based on emissions thresholds known as the PSD Significant Emission Rates listed in Table 62-212.400-2, F.A.C. Pollutant emissions from the project exceeding 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.

The existing facility is located in an area that is currently in attainment with the state and federal Ambient Air Quality Standards (AAQS) or otherwise designated as unclassifiable. It is an existing PSD-major facility in accordance with Rule 62-212.400, F.A.C. Therefore, the project must be reviewed for applicability of PSD preconstruction review.

For projects involving a physical change to an existing unit, PSD applicability is typically determined by comparing the past actual emissions of the unit to the future potential emissions of the unit after completing the project. However, Rule 62-210.200(11)(d), F.A.C. allows the following exception for electric utility steam generating units.

"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."

The federal definition of "representative actual annual emissions" in 40 CFR 52.21(b)(33) is:

"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

## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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."

The combined cycle unit consists of a 79 MW gas turbine with a gas-fired heat recovery steam generator (HRSG) rated at approximately 50 MW. It provides electricity through the power grid to Progress Energy Florida and the Reedy Creek Improvement District. In addition, the plant utilizes a steam absorption chiller to provide chilled water to the adjacent Air Products plant. It is a base-loaded, Phase II Acid Rain unit with an annual capacity factor of more than 87% for 1999 through 2002. The combined cycle system is considered an electric utility steam generating unit.

### 3. APPLICANT'S EVALUATION

As previously discussed, the unit is considered an electric utility steam generating unit. As such, the applicant predicts that the proposed upgrade project will not result in PSD significant emissions increases based on future representative actual emissions. The applicant believes that the upgrade project will actually increase the efficiency of the unit, reduce dependence on duct firing, and improve the overall emissions characteristics of the plant.

The applicant provided supporting information from the vendor of the gas turbine upgrade (Alstom) and a representative vendor of the fogger project (Mee Industries Inc.). The applicant also estimated emissions impacts related to the project. The following methods were used to develop emission factors for estimating past actual emissions as well as future representative actual emissions.

- AP-42 emissions factors for particulate matter, sulfur dioxide, and volatile organic compounds;
- Stack test data for carbon monoxide;
- Continuous monitoring emissions data for nitrogen oxides.

The following table summarizes the applicant's PSD applicability analysis for the project:

Table 3A. Applicant's PSD Applicability Summary

Pollutant*	Gas Turbine Emissions, TPY			PSD Applicability	
	Past Actual	Future Actual	Net Increase	PSD SER TPY	Subject to PSD?
CO	2.82	3.49	0.67	100	No
NOx	232.62	254.45	21.83	40	No
PM	32.52	35.63	3.11	25	No
PM10	32.52	35.63	3.11	15	No
SO2	2.36	2.59	0.23	40	No
VOC	15.83	19.42	3.59	40	No



Notes:

“TPY means tons per year. “SER” means significant emissions rate.

The applicant predicts that the project will not result in any substantial changes to the gas turbine’s emissions characteristics. Therefore, emissions would increase only through increased availability and usage of the gas turbine (improved reliability and full operation to 8760 hours per year). Based on the predicted emissions increases, the applicant does not believe that the project will result in any PSD-significant emissions increases.

#### 4. DEPARTMENT’S REVIEW

##### Gas Turbine Upgrade

To evaluate the *likelihood* of the NM upgrade project triggering PSD preconstruction review, the Department used the conventional method of comparing past actual to future potential emissions. The following four methods were used to estimate worst-case emissions impacts from the NM upgrade project.

- Hours of Operation: The maximum permitted hourly emissions rates and the hours of operation for 2002/2003 were used to estimate the 2-year average annual emission rates. These rates were compared to the potential emissions identified in the current air permits. The gas turbine operated an average of 8462 hours per year. This analysis showed that the upgrade project would not trigger PSD review.
- AOR Data: The Annual Operating Reports submitted by the applicant for 2002/2003 were used to estimate the 2-year average annual emission rates. These rates were compared to the potential emissions identified in the current air permits. This analysis indicated that it was possible for the gas turbine to exceed the PSD significant emissions rates only for CO (112.6 TPY compared to 100 TPY) and NOx (48.9 TPY compared to 40 TPY). However, this would be the case only if the unit operated at 8760 hours per year and while emitting at the *maximum* hourly emissions rates.
- Gas Firing Rates: The maximum permitted hourly emissions rates combined with the gas firing rates for 2002/2003 were used to estimate the 2-year average annual emission rates. These rates were compared to the potential emissions identified in the current air permits. This analysis indicated that it was possible for the gas turbine to exceed the PSD significant emissions rates only for CO (108.3 TPY compared to 100 TPY). Again, this would occur only if the unit operated at 8760 hours per year and while emitting at the *maximum* hourly emissions rates.
- Acid Rain NOx CEMS Data: For this case, the NOx data reported to EPA’s Acid Rain database for 2002/2003 was used to estimate the past actual NOx emissions. These rates were compared to the potential emissions identified in the current air permits. This analysis indicated that it was just possible for the gas turbine to exceed the PSD significant emissions rates for NOx (41.9 TPY compared to 40 TPY).

Again, the above estimates were conducted as worst-case scenarios to evaluate the likelihood of the NM project resulting in PSD-significant emissions increases. Such analysis is not required for this project. From the analysis, only CO and NOx emissions have the potential for PSD-significant increases. However, the analysis actually shows that it is *very unlikely* for the proposed upgrade project to cause any PSD-significant emissions increases.

*{It is noted that 2004 data was not used because the gas turbine was in a forced outage for 54 days in 2004 due to failure of a step-up transformer.}*

##### Fogger Project

Gas turbines do not produce as much power on warm days because the air is less dense, which results in a reduced mass flow rate through the unit. The purpose of the fogger project is to improve power production on warm days by using evaporative cooling to decrease the compressor inlet temperature, which increases the mass flow rate through the gas turbine. If the compressor inlet temperature is reduced from 90° F to 78° F, the increased mass flow rate will be accompanied by a slight increase in heat input (approximately 3%) to produce a

corresponding 4% increase in power. Except for altering the emissions rates based on the lower compressor inlet temperature, fogging is not expected to otherwise change emissions. In other words, emissions on a day with an ambient temperature of 78° F (no fogging) will be similar to a day with an ambient temperature of 90° F with fogging that reduces the compressor inlet temperature to 78° F.

Although fogging may result in a slight increase in fuel firing, actual emissions on such days will still be well below the permitted emissions rates, which are specified at a compressor inlet temperature of 59°. To conservatively evaluate potential impacts from fogging, the Department estimated emissions increases based on the following:

- The maximum permitted emission rates;
- The difference in heat input rates (24.7 MMBtu/hour) between fogging (90° F reduced to 78° F) and no fogging (ambient temperature of 90°); and
- Full operation at 8760 hours per year.

Using this method, NOx emissions from fogging alone are predicted to be approximately 7 tons per year and all other pollutants are estimated at less than 3 tons per year. Although this is a very conservative estimate, it shows that potential impacts from fogging will be very small. In addition, the applicant predicts that fogging will result in reduced duct burner firing because fogging is more efficient at producing additional power than duct firing.

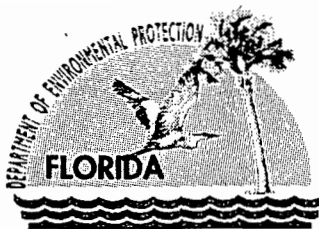
## **5. DRAFT PERMIT CONDITIONS**

Based on the available information, the Department believes the project is unlikely to result in PSD-significant emissions increases based on a comparison of past actual emissions to future representative actual emissions. Therefore, the Department intends to issue a draft air construction permit that includes the following requirements:

- Authorization to upgrade the Alstom gas turbine from a Model GT 11N1 to a Model GT 11NM;
- Authorization to install an evaporative inlet air fogging system;
- Stack testing for CO emissions after completing the NM upgrade project;
- Requirements to report actual annual CO and NOx emissions for a 5-year period after completion to verify that the project did not result in a PSD significant emissions increase; and
- The gas turbine shall remain subject to all other valid terms and conditions in existing air construction and operation permits.

## **6. PRELIMINARY DETERMINATION**

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 a significant increase in emissions. 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.



Jeb Bush  
Governor

# Department of Environmental Protection

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

Colleen M. Castille  
Secretary

March 17, 2005

Mr. Todd Shirley, Plant Manager  
Northern Star Generation Services - Orlando Cogen Plant  
8275 Exchange Drive  
Orlando, FL 32809

Re: Air Construction Permit No. 0950203-003-AC  
Orlando Cogen Limited, L.P.  
NM Upgrade Plus Fogger Project

Dear Mr. Shirley:

On February 24, 2005, you submitted an application requesting authorization to upgrade the existing gas turbine and add a fogging system. The gas turbine is installed at the existing Orlando Cogen Plant, which is located in Orange County at 8275 Exchange Drive, Orlando, Florida. Enclosed are the following documents: "Technical Evaluation and Preliminary Determination", "Draft Permit", "Written Notice of Intent to Issue Air Permit", and "Public Notice of Intent to Issue Air Permit".

The "Technical Evaluation and Preliminary Determination" summarizes the Permitting Authority's technical review of the application and provides the rationale for making the preliminary determination to issue a Draft Permit. The proposed "Draft Permit" includes the specific conditions that regulate the emissions units covered by the proposed project. The "Written Notice of Intent to Issue Air Permit" provides important information regarding: the Permitting Authority's intent to issue an air permit for the proposed project; the requirements for publishing a Public Notice of the Permitting Authority's intent to issue an air permit; the procedures for submitting comments on the Draft Permit; the process for filing a petition for an administrative hearing; and the availability of mediation. The "Public Notice of Intent to Issue Air Permit" is the actual notice that you must have published in the legal advertisement section of a newspaper of general circulation in the area affected by this project.

If you have any questions, please contact the Project Engineer, Jeff Koerner, at 850/921-9536.

Sincerely,

Trina Vielhauer, Chief  
Bureau of Air Regulation

Enclosures

"More Protection, Less Process"

Printed on recycled paper.

## WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

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*In the Matter of an  
Application for Air Permit by:*

Orlando Cogen – Northern Star Generation Services  
8275 Exchange Drive  
Orlando, FL 32809

*Authorized Representative:*

Mr. Todd Shirley, Plant Manager

Air Permit No. 0950203-003-AC  
Facility ID No. 0950203  
Orlando Cogen Plant  
NM Upgrade Plus Fogger Project  
Orange County, Florida

**Facility Location:** Northern Star Generation Services operates the Orlando Cogen Plant, which is located in Orange County at 8275 Exchange Drive, Orlando, Florida.

**Project:** The plant currently consists of a nominal 129 MW (total) combined cycle gas turbine and ancillary equipment. The plant proposes to upgrade the existing gas turbine from an Alstom Model GT 11N1 to an Alstom Model GT 11NM and to install an evaporative-cooling fogging system. The purpose of the NM upgrade project is to improve the thermal efficiency of the unit. The fogging system will be used on warm days to cool the inlet compressor air for increased power production. Both the NM upgrade and the fogging system are expected to reduce dependence on the existing duct burner system that fires natural gas.

The 129 MW combined cycle gas turbine is considered an electric utility steam generating unit. As such, the applicant predicts that emissions will not significantly increase after completion of the project based on future representative actual emissions. Therefore, the project is not subject to preconstruction review for the Prevention of Significant Deterioration (PSD). The Department agrees and intends to issue a draft permit authorizing the project with the requirements to test and report CO and NOx emissions for a 5-year period following completion of the project. Details of the project are provided in the application and the enclosed "Technical Evaluation and Preliminary Determination".

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

**Project File:** A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address or phone number listed above. A copy of the complete project file is also available at the Air Resources Section of the Department's Central District Office at 3319 Maguire Boulevard, Suite 232, Orlando, Florida 32803-3767. The telephone number is 407/894-7555.

**Notice of Intent to Issue Permit:** The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

**Public Notice:** Pursuant to Section 403.815, F.S. and Rules 62-110.106 and 62-210.350, F.A.C., you (the applicant) are required to publish at your own expense the enclosed "Public Notice of Intent to Issue Air Permit" (Public Notice). The Public Notice shall be published one time only as soon as possible in the legal advertisement section of a newspaper of general circulation in the area affected by this project. The newspaper used must meet the requirements of Sections 50.011 and 50.031, F.S. in the county where the activity is to take place. If you are

## WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

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uncertain that a newspaper meets these requirements, please contact the Permitting Authority at above address or phone number. Pursuant to Rule 62-110.106(5), F.A.C., the applicant shall provide proof of publication to the Permitting Authority at the above address within seven (7) days of publication. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rule 62-110.106(11), F.A.C.

**Comments:** The Permitting Authority will accept written comments concerning the proposed Draft Permit for a period of fourteen (14) days from the date of publication of the Public Notice. Written comments must be provided to the Permitting Authority at the above address. Any written comments filed will be made available for public inspection. If written comments received result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice.

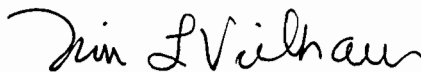
**Petitions:** A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by the applicant or any of the parties listed below must be filed within fourteen (14) days of receipt of this Written Notice of Intent to Issue Air Permit. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within fourteen (14) days of publication of the attached Public Notice or within fourteen (14) days of receipt of this Written Notice of Intent to Issue Air Permit, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within fourteen (14) days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

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

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

**Mediation:** Mediation is not available in this proceeding.

Executed in Tallahassee, Florida.



\_\_\_\_\_  
Trina Vielhauer, Chief  
Bureau of Air Regulation

**WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT**

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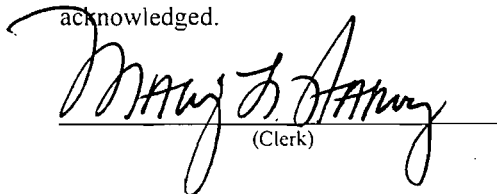
**CERTIFICATE OF SERVICE**

The undersigned duly designated deputy agency clerk hereby certifies that this "Written Notice of Intent to Issue Air Permit" package (including the Public Notice, the Technical Evaluation and Preliminary Determination, and the Draft Permit) was sent by certified mail (\*) and copies were mailed by U.S. Mail before the close of business on 3/23/05 to the persons listed below.

Mr. Todd Shirley, Orlando Cogen\*  
Mr. Scott Wesson, PBS&J  
Mr. Len Kozlov, Central District Office  
Ms. Marie Driscoll, Orange County Environmental Protection Division  
Mr. Gregg Worley, EPA Region 4 Office

Clerk Stamp

**FILING AND ACKNOWLEDGMENT FILED**, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

  
\_\_\_\_\_  
(Clerk)

3/23/05  
(Date)

## PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

Florida Department of Environmental Protection  
Draft Air Permit No. 0950203-003-AC  
Northern Star Generation Services - Orlando Cogen Plant  
Orange County, Florida

**Applicant:** The applicant for this project is the Northern Star Generation Services – Orlando Cogen Limited, L.P. The applicant's authorized representative and mailing address is: Mr. Todd Shirley, Plant Manager; Northern Star Generation Services - Orlando Cogen Plant; 8275 Exchange Drive; Orlando, FL 32809.

**Facility Location:** Northern Star Generation Services operates the Orlando Cogen Plant, which is located in Orange County at 8275 Exchange Drive, Orlando, Florida.

**Project:** The plant currently consists of a nominal 129 MW (total) combined cycle gas turbine and ancillary equipment. The plant proposes to upgrade the existing gas turbine from an Alstom Model GT 11N1 to an Alstom Model GT 11NM and to install an evaporative-cooling fogging system. The purpose of the NM upgrade project is to improve the thermal efficiency of the unit. The fogging system will be used on warm days to cool the inlet compressor air for increased power production. Both the NM upgrade and the fogging system are expected to reduce dependence on the existing duct burner system that fires natural gas.

The 129 MW combined cycle gas turbine is considered an electric utility steam generating unit. As such, the applicant predicts that emissions will not significantly increase after completion of the project based on future representative actual emissions. Therefore, the project is not subject to preconstruction review for the Prevention of Significant Deterioration (PSD). The Department agrees and intends to issue a draft permit authorizing the project with the requirements to test and report CO and NO<sub>x</sub> emissions for a 5-year period following completion of the project. Details of the project are provided in the application and the enclosed "Technical Evaluation and Preliminary Determination".

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

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**Notice of Intent to Issue Air Permit:** The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

**Comments:** The Permitting Authority will accept written comments concerning the proposed Draft Permit for a period of fourteen (14) days from the date of publication of this Public Notice. Written comments must be provided to the Permitting Authority at the above address. Any written comments filed will be made available for public inspection. If written comments received result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice.

(Public Notice to be Published in the Newspaper)

## PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

**Petitions:** A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. 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 this Public Notice or receipt of a written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within fourteen (14) days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

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

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**Mediation:** Mediation is not available for this proceeding.



**PERMITTEE:**

Northern Star Generation Services – Orlando Cogen Plant  
8275 Exchange Drive  
Orlando, FL 32809

*Authorized Representative:*  
Mr. Todd Shirley, Plant Manager

Orlando Cogen Limited, L.P. Air Permit No. 0950203-003-AC Facility ID No. 0950203 SIC No. 4931 Permit Expires: July 1, 2008
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**PROJECT AND LOCATION**

This permit authorizes the following construction: upgrade of the existing Alston 79 MW (ISO) gas turbine, from a Model GT 11N1 to a Model GT 11NM; and install an evaporative-cooling fogging system. The new equipment will be installed at the existing Orlando Cogen Plant, which is located in Orange County at 8275 Exchange Drive, Orlando, Florida. The UTM coordinates are Zone 17, 459.5 km East, and 3146.1 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.) and Title 40, Part 60 of the Code of Federal Regulations. 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.

**CONTENTS**

- Section 1. General Information
- Section 2. Administrative Requirements
- Section 3. Emissions Units Specific Conditions
- Section 4. Appendices

(DRAFT)

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Michael G. Cooke, Director  
Division of Air Resource Management

(Date)

**SECTION 1. GENERAL INFORMATION**

**FACILITY AND PROJECT DESCRIPTION**

The existing facility consists of a 129 MW combined cycle gas turbine system. This project will only affect the following existing emissions unit.

ID	Emission Unit Description
001	The existing 79 MW (ISO) Alstom Model GT 11N1 gas turbine will be upgraded to a Model NM unit.

**REGULATORY CLASSIFICATION**

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

Title IV: The gas turbine is subject to the acid rain provisions of the Clean Air Act.

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

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

NSPS: The gas turbine is subject to the New Source Performance Standards in Subpart GG 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. The gas turbine remains subject the applicable terms and conditions of original Permit No. PSD-FL-184 issued in 1992. This current minor source air construction permit supplements the original PSD permit.

Draft Permit

## SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: All documents related to applications for permits to construct, modify, or operate emissions units regulated by this permit shall be submitted to the Bureau of Air Regulation of the Florida Department of Environmental Protection (DEP) at 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400.
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Air Resource Section of the Orange County Environmental Protection Division, 800 Mercy Drive, Orlando, FL 32808.
3. Appendices: The following Appendices are attached as part of this permit: Appendix CF (Citation Format); Appendix GC (General Conditions); and Appendix SC (Common 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: The permittee shall apply for a Title V operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after completing the gas turbine upgrade to an "NM" model and commencing operation. To apply for a 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. The application shall be submitted to the appropriate Permitting Authority with copies to the Compliance Authority. *{Permitting Note: The fogging project does not result in any additional permit requirements other than notification of the construction schedule. Therefore, the fogging project shall be included with the Title V revision application submitted for the gas turbine upgrade project or at the next re-opening of the Title V permit for some other cause.}* [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

## SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

### A. 79 MW Alstom Gas Turbine (EU-001)

This section of the permit addresses the following emissions unit.

ID	Emission Unit Description
001	79 MW (ISO) Alstom Model GT 11NM gas turbine

#### ADMINISTRATIVE REQUIREMENTS

1. Previous Permit Conditions: Issuance of this permit does not alter any requirements established in any previously issued air construction or Title V operation permits for the existing gas turbine. The conditions of this minor air construction permit supplement, and are in addition to, all current valid requirements. [Rule 62-210.300, F.A.C.]

#### PROPOSED PROJECTS

2. Gas Turbine Upgrade: The permittee is authorized to upgrade the existing 79 MW (ISO) Alstom Model GT 11N1 gas turbine to a Model NM unit by the following physical changes: increasing the channel height, equalizing the turbine stage loading, using airfoils with improved aerodynamics, implementing advanced blade cooling technology, and improving the seals to reduce air leakage. The upgrade is designed to improve the thermal efficiency of the unit. [Application]
3. Fogging System: The permittee is authorized to install a high-pressure fogging system consisting of nozzles, piping, pumps, control system, etc. The fogging system will be designed to provide evaporative cooling of the compressor inlet air stream to produce additional power. [Application]
4. Notifications: Within one week of beginning construction on each project, the permittee shall provide notification that construction has commenced and a schedule for completing the project. The permittee shall also provide notice if a project will not be constructed. The schedule shall be updated for any major changes as necessary. {Permitting Note: The projects are likely to be constructed in separate phases over two different outages.} [Rule 6-4.070(3), F.A.C.]

#### EMISSIONS AND PERFORMANCE REQUIREMENTS

{Permitting Note: The authorized projects will not alter the permitted emissions rates, permitted capacity, authorized fuel, or other current operational requirements.}

#### TESTING REQUIREMENTS

5. Initial Compliance Tests: The gas turbine shall be tested to demonstrate initial compliance with the existing emissions standards for carbon monoxide specified in the Title V permit. The initial tests shall be conducted within 60 days after completing the gas turbine upgrade. The tests shall consist of at least three 1-hour test runs conducted in accordance with EPA Method 10 and EPA Methods 1-4 as necessary. For each of the CO test runs, nitrogen oxides (NOx) emissions data collected from the installed CEMS shall be used to demonstrate compliance with the NOx standard. Other notification, testing, and reporting requirements are specified in Appendix C. {Permitting Note: No initial tests are required after the installation of the inlet fogging system.} [Rule 62-297.310(7)(a)1, F.A.C.]

#### ANNUAL REPORTING

6. CO/NOx Emissions Reports: For a period of five years following completion of the gas turbine upgrade, the permittee shall submit an annual report demonstrating that the project did not result in a significant increase in CO and NOx emissions. The first report is shall be submitted for the first full calendar year after completing the gas turbine upgrade. Reports shall be submitted by March 1<sup>st</sup> of each year and may be submitted along with the required Annual Operating Report. When calculating any increase in emissions resulting from the project, the permittee shall exclude 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 project, including any increased utilization due to the rate of electricity demand growth for the utility system as a whole. The baseline emissions for operation prior to the project are 3 tons per year of CO and 232 tons per year of NOx. {Permitting Note: These reports are required only after completion of the gas turbine upgrade. The fogging project does not invoke these reporting requirements.} [Rule 62-210.200(11)(d), F.A.C. and 40 C.F.R.52.21(b)(33)]

**SECTION 4. APPENDICES**  
**CONTENTS**

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- Appendix A. Citation Formats
- Appendix B. General Conditions
- Appendix C. Common Conditions

**SECTION 4. APPENDIX A**  
**CITATION FORMATS**

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*The following examples illustrate the format used in the permit to identify applicable permitting actions and regulations.*

**REFERENCES TO PREVIOUS PERMITTING ACTIONS**

Old Permit Numbers

*Example:* Permit No. AC50-123456 or Air Permit No. AO50-123456

*Where:* “AC” identifies the permit as an Air Construction Permit  
“AO” identifies the permit as an Air Operation Permit  
“123456” identifies the specific permit project number

New Permit Numbers

*Example:* Permit Nos. 099-2222-001-AC, 099-2222-001-AF, 099-2222-001-AO, or 099-2222-001-AV

*Where:* “099” represents the specific county ID number in which the project is located  
“2222” represents the specific facility ID number  
“001” identifies the specific permit project  
“AC” identifies the permit as an air construction permit  
“AF” identifies the permit as a minor federally enforceable state operation permit  
“AO” identifies the permit as a minor source air operation permit  
“AV” identifies the permit as a Title V Major Source Air Operation Permit

PSD Permit Numbers

*Example:* Permit No. PSD-FL-317

*Where:* “PSD” means issued pursuant to the Prevention of Significant Deterioration of Air Quality  
“FL” means that the permit was issued by the State of Florida  
“317” identifies the specific permit project

**RULE CITATION FORMATS**

Florida Administrative Code (F.A.C.)

*Example:* [Rule 62-213.205, F.A.C.]

*Means:* Title 62, Chapter 213, Rule 205 of the Florida Administrative Code

Code of Federal Regulations (CFR)

*Example:* [40 CFR 60.7]

*Means:* Title 40, Part 60, Section 7

**SECTION 4. APPENDIX B**  
**GENERAL CONDITIONS**

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The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
  - a. Have access to and copy and records that must be kept under the conditions of the permit;
  - b. Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
  - c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
  - a. A description of and cause of non-compliance; and
  - b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida

**SECTION 4. APPENDIX B**  
**GENERAL CONDITIONS**

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Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
12. This permit or a copy thereof shall be kept at the work site of the permitted activity.
13. This permit also constitutes:
  - a. Determination of Best Available Control Technology (not applicable);
  - b. Determination of Prevention of Significant Deterioration (not applicable); and
  - c. Compliance with New Source Performance Standards (not applicable).
14. The permittee shall comply with the following:
  - a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
  - b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
  - c. Records of monitoring information shall include:
    - 1) The date, exact place, and time of sampling or measurements;
    - 2) The person responsible for performing the sampling or measurements;
    - 3) The dates analyses were performed;
    - 4) The person responsible for performing the analyses;
    - 5) The analytical techniques or methods used; and
    - 6) The results of such analyses.
15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.



**SECTION 4. APPENDIX C**  
**COMMON CONDITIONS**

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*{Permitting Note: Unless otherwise specified in the permit, the following conditions apply to all emissions units and activities at the facility.}*

**EMISSIONS AND CONTROLS**

1. **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.]
2. **Circumvention:** The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]
3. **Excess Emissions Allowed:** Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]
4. **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 shall be prohibited. [Rule 62-210.700(4), F.A.C.]
5. **Excess Emissions - Notification:** In case of excess emissions resulting from malfunctions, the permittee shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]
6. **VOC or OS Emissions:** No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]
7. **Objectionable Odor Prohibited:** No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and 62-210.200(203), F.A.C.]
8. **General Visible Emissions:** No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20 percent opacity. This regulation does not impose a specific testing requirement. [Rule 62-296.320(4)(b)1, F.A.C.]
9. **Unconfined Particulate 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**

10. **Required Number of Test Runs:** For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]

**SECTION 4. APPENDIX C**  
**COMMON CONDITIONS**

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11. 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), F.A.C.]
12. 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.]
13. Test Procedures: Tests shall be conducted in accordance with all applicable requirements of Chapter 62-297, F.A.C.
  - a. *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 thirty (30) minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur.
  - b. *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.
  - 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), F.A.C.]
14. Determination of Process Variables
  - a. *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.
  - b. *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), F.A.C.]
15. Sampling Facilities: The permittee shall install permanent stack sampling ports and provide sampling facilities that meet the requirements of Rule 62-297.310(6), F.A.C.
16. Test Notification: The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator. [Rule 62-297.310(7)(a)9, F.A.C.]
17. 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.]
18. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the

**SECTION 4. APPENDIX C**  
**COMMON CONDITIONS**

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test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information:

1. The type, location, and designation of the emissions unit tested.
2. The facility at which the emissions unit is located.
3. The owner or operator of the emissions unit.
4. The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
5. The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
6. The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
7. A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
8. The date, starting time and duration of each sampling run.
9. The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
10. The number of points sampled and configuration and location of the sampling plane.
11. For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
12. The type, manufacturer and configuration of the sampling equipment used.
13. Data related to the required calibration of the test equipment.
14. Data on the identification, processing and weights of all filters used.
15. Data on the types and amounts of any chemical solutions used.
16. Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
17. The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
18. All measured and calculated data required to be determined by each applicable test procedure for each run.
19. The detailed calculations for one run that relate the collected data to the calculated emission rate.
20. The applicable emission standard and the resulting maximum allowable emission rate for the emissions unit plus the test result in the same form and unit of measure.
21. A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

**RECORDS AND REPORTS**

19. 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.]
20. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(2), F.A.C.]

P.E. CERTIFICATION STATEMENT

PERMITTEE

Orlando Cogen – Northern Star Generation Services  
8275 Exchange Drive  
Orlando, FL 32809

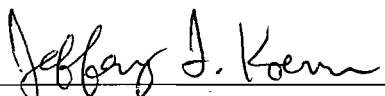
Draft Air Permit No. 0950203-003-AC  
Orlando Cogen Plant  
NM Upgrade plus Fogging project  
Orange County, Florida

PROJECT DESCRIPTION

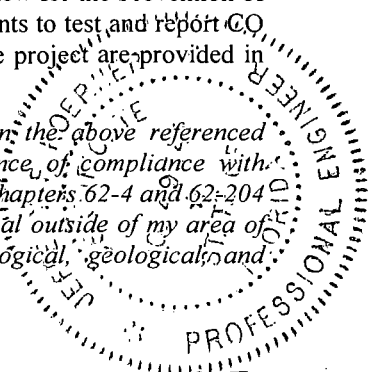
The plant currently consists of a nominal 129 MW (total) combined cycle gas turbine and ancillary equipment. The plant proposes to upgrade the existing gas turbine from an Alstom Model GT 11N1 to an Alstom Model GT 11NM and to install an evaporative-cooling fogging system. The purpose of the NM upgrade project is to improve the thermal efficiency of the unit. The fogging system will be used on warm days to cool the inlet compressor air for increased power production. Both the NM upgrade and the fogging system are expected to reduce dependence on the existing duct burner system that fires natural gas.

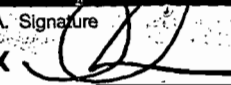
The 129 MW combined cycle gas turbine is considered an electric utility steam generating unit. As such, the applicant predicts that emissions will not significantly increase after completion of the project based on future representative actual emissions. Therefore, the project is not subject to preconstruction review for the Prevention of Significant Deterioration (PSD). The draft permit authorizes the project with the requirements to test and report CO and NOx emissions for a 5-year period following completion of the project. Details of the project are provided in the application and the enclosed "Technical Evaluation and Preliminary Determination".

*I HEREBY CERTIFY that the air pollution control engineering features described in the above referenced application and subject to the proposed permit conditions provide reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-4 and 62-204 through 62-297. However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise (including, but not limited to, the electrical, mechanical, structural, hydrological, geological, and meteorological features).*

  
\_\_\_\_\_  
Jeffery F. Koerner, P.E.  
Registration Number: 49441

3-16-05  
\_\_\_\_\_  
(Date)



SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	A. Signature X  <input type="checkbox"/> Agent <input type="checkbox"/> Addressee
1. Article Addressed to:  <div style="border: 1px solid black; padding: 5px;">             Mr. Todd Shirley, Plant Manager              Northern Star Generation Services -              Orlando Cogen Plant              8275 Exchange Drive              Orlando, Florida 32809           </div>	B. Received by (Printed Name) C. Date of Delivery TIM GEORGE
2. Article Number (Transfer from service label)	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No
PS Form 3811, August 2001	3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D. 4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes
7000 1670 0013 3109 8871	
Domestic Return Receipt 102595-02-M-1540	

### U.S. Postal Service

## CERTIFIED MAIL RECEIPT

*(Domestic Mail Only; No Insurance Coverage Provided)*

7000 1670 0013 3109 8871

Postage	\$	
Certified Fee		
Return Receipt Fee <small>(Endorsement Required)</small>		
Restricted Delivery Fee <small>(Endorsement Required)</small>		

Postmark  
Here

S Mr. Todd Shirley, Plant Manager  
 S Northern Star Generation Services -  
 C Orlando Cogen Plant  
 C 8275 Exchange Drive  
 C Orlando, Florida 32809

PS Form 3800, May 2000 See Reverse for Instructions



**NORTHERN STAR  
GENERATION SERVICES  
COMPANY LLC**

Operating Agent for Orlando Cogen Limited, L.P.  
8275 Exchange Drive  
Orlando, FL 32809  
(407) 851-1350 (office)  
(407) 851-1686 (fax)

February 22, 2005

Air Permitting South - FDEP  
Division of Air Resource Management  
Attn: Jeff Koerner  
2600 Blair Stone Road MS 5500  
Tallahassee, Florida 32399-2400

**Re:** Orlando CoGen Limited, L.P.  
Facility ID: 0950203; ORIS Code: 54466; Title V Permit: 0950203-002-AV  
Application for Air Permit – Long Form – Heat Rate Improvement Project

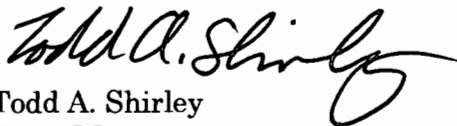
RECEIVED  
FEB 24 2005  
BUREAU OF AIR REGULATION

Dear Mr. Koerner:

Northern Star Generation Services is submitting an Air Construction permit application and Title V permit revision long form application for a heat rate improvement project. The application is submitted by Orlando CoGen Limited, L.P. which owns a 129 MW natural gas-fired combined cycle cogeneration facility located at 8275 Exchange Drive, Orlando, Florida 32809. The plant is operated by Northern Star Generation Services.

If you have any questions regarding this submittal, please contact the application contact Scott P. Wesson of PBS&J at (407) 806 – 4106 [spwesson@pbsj.com](mailto:spwesson@pbsj.com) or me at (407)851-1350 [todd.shirley@northernstargen.com](mailto:todd.shirley@northernstargen.com).

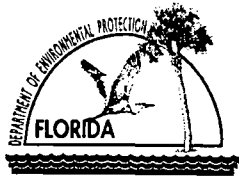
Sincerely,



Todd A. Shirley  
Plant Manager  
Orlando CoGen Limited, L.P.

Attachment

Cc: David Kellermeyer, NSGS



# Department of Environmental Protection

## Division of Air Resource Management

### APPLICATION FOR AIR PERMIT - LONG FORM

**RECEIVED**  
FEB 24 2005

BUREAU OF AIR REGULATION

#### I. APPLICATION INFORMATION

**Air Construction Permit** – Use this form to apply for an air construction permit for a proposed project:

- subject to prevention of significant deterioration (PSD) review, nonattainment area (NAA) new source review, or maximum achievable control technology (MACT) review; or
- where the applicant proposes to assume a restriction on the potential emissions of one or more pollutants to escape a federal program requirement such as PSD review, NAA new source review, Title V, or MACT; or
- at an existing federally enforceable state air operation permit (FESOP) or Title V permitted facility.

**Air Operation Permit** – Use this form to apply for:

- an initial federally enforceable state air operation permit (FESOP); or
- an initial/revised/renewal Title V air operation permit.

**Air Construction Permit & Revised/Renewal Title V Air Operation Permit (Concurrent Processing Option)**

– Use this form to apply for both an air construction permit and a revised or renewal Title V air operation permit incorporating the proposed project.

To ensure accuracy, please see form instructions.

#### Identification of Facility

1. Facility Owner/Company Name: Northern Star Generation Services	
2. Site Name: Orlando Cogen Limited, L.P.	
3. Facility Identification Number: 0950203	
4. Facility Location... Street Address or Other Locator: 8275 Exchange Drive City: Orlando                                  County: Orange                                  Zip Code: 32809	
5. Relocatable Facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6. Existing Title V Permitted Facility? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

#### Application Contact

1. Application Contact Name: Scott P. Wesson	
2. Application Contact Mailing Address. Organization/Firm: PBS&J Street Address: ..482 South Keller Road City: Orlando                                  State: FL                                  Zip Code: 32810-6101	
3. Application Contact Telephone Numbers... Telephone: ( 407 ) 806 - 4106                  ext.                  Fax: (407) 647 - 4143	
4. Application Contact Email Address: spwesson@pbsj.com	

#### Application Processing Information (DEP Use)

1. Date of Receipt of Application:	2-24-05
2. Project Number(s):	0950203-003-AC                  0950203-004-A ✓
3. PSD Number (if applicable):	
4. Siting Number (if applicable):	

## APPLICATION INFORMATION

### Purpose of Application

**This application for air permit is submitted to obtain: (Check one)**

#### **Air Construction Permit**

Air construction permit.

#### **Air Operation Permit**

Initial Title V air operation permit.

Title V air operation permit revision.

Title V air operation permit renewal.

Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.

Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

#### **Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)**

Air construction permit and Title V permit revision, incorporating the proposed project.

Air construction permit and Title V permit renewal, incorporating the proposed project.

**Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:**

I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

### Application Comment

The proposed project will involve the implementation of either or both of two options for improving plant heat rate: installation of an inlet air fogging system and upgrading the existing gas turbine from an Altsom GT 11N1 to a GT 11NM. The main goal of the upgrade project is to reduce the costs of power generation by increasing turbine efficiency. The cost savings are primarily realized through a reduction in fuel use. There are no changes requested to the emission limits or fuel limits.



**APPLICATION INFORMATION**

**Scope of Application**

<b>Emissions Unit ID Number</b>	<b>Description of Emissions Unit</b>	<b>Air Permit Type</b>	<b>Air Permit Proc. Fee</b>
001	Combustion Turbine, Phase II Acid Rain Unit	AC1B	\$0
002	HRSG and Duct Burner System, Phase II Acid Rain Unit	AC1B	\$0

**Application Processing Fee**

**Check one:**  Attached - Amount: \$ \_\_\_\_\_  Not Applicable

# APPLICATION INFORMATION

## Owner/Authorized Representative Statement

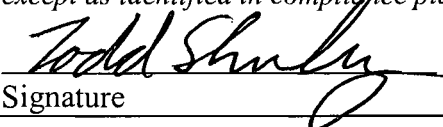
**Complete if applying for an air construction permit or an initial FESOP.**

1. Owner/Authorized Representative Name : Todd Shirley – Plant Manager
2. Owner/Authorized Representative Mailing Address... Organization/Firm: Orlando Cogen - Northern Star Generation Services Street Address: 8275 Exchange Drive City: Orlando State: FL Zip Code: 32809
3. Owner/Authorized Representative Telephone Numbers... Telephone: (407) 851 - 1350 ext. Fax: (407) 851 - 1686
4. Owner/Authorized Representative Email Address: todd.shirley@northernstargen.com
5. Owner/Authorized Representative Statement:  <i>I, the undersigned, am the owner or authorized representative of the facility addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other requirements identified in this application to which the facility is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit.</i>   Signature  Date

## APPLICATION INFORMATION


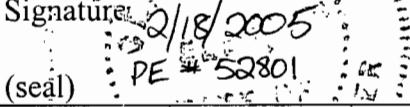
### Application Responsible Official Certification

**Complete if applying for an initial/revised/renewal Title V permit or concurrent processing of an air construction permit and a revised/renewal Title V permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."**

1. Application Responsible Official Name: Todd Shirley – Plant Manager
2. Application Responsible Official Qualification (Check one or more of the following options, as applicable): <input type="checkbox"/> For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C. <input type="checkbox"/> For a partnership or sole proprietorship, a general partner or the proprietor, respectively. <input type="checkbox"/> For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official. <input checked="" type="checkbox"/> The designated representative at an Acid Rain source.
3. Application Responsible Official Mailing Address... Organization/Firm: Orlando Cogen - Northern Star Generation Services Street Address: 8275 Exchange Drive City: Orlando State: FL Zip Code: 32809
4. Application Responsible Official Telephone Numbers... Telephone: (407) 851 - 1350 ext. Fax: (407) 851 - 1686
5. Application Responsible Official Email Address: todd.shirley@northernstargen.com
6. Application Responsible Official Certification: <i>I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.</i>  Signature:  Date: <u>2/21/2005</u>

# APPLICATION INFORMATION

## Professional Engineer Certification

1. Professional Engineer Name: Scott P. Wesson, P.E. Registration Number: 52801
2. Professional Engineer Mailing Address... Organization/Firm: PBS&J Street Address: 482 South Keller Road City: Orlando State: FL Zip Code: 32810-6101
3. Professional Engineer Telephone Numbers... Telephone: ( 407 ) 806 - 4106 ext. Fax: ( 407 ) 647 - 4143
4. Professional Engineer Email Address: spwesson@pbsj.com
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i>  (1) <i>To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and</i>  (2) <i>To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.</i>  (3) <i>If the purpose of this application is to obtain a Title V air operation permit (check here <input type="checkbox"/>, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.</i>  (4) <i>If the purpose of this application is to obtain an air construction permit (check here <input checked="" type="checkbox"/>, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here <input type="checkbox"/>, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.</i>  (5) <i>If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here <input type="checkbox"/>, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.</i>   Signature: _____ Date: <u>2/18/2005</u>  (seal) PE # 52801

\* Attach any exception to certification statement.

## II. FACILITY INFORMATION

### A. GENERAL FACILITY INFORMATION

#### Facility Location and Type

1. Facility UTM Coordinates... Zone 17      East (km)    459.5 North (km)    3146.1		2. Facility Latitude/Longitude... Latitude (DD/MM/SS)    28/26/23 Longitude (DD/MM/SS)    81/24/28	
3. Governmental Facility Code: NONE	4. Facility Status Code: A - Active	5. Facility Major Group SIC Code: 49	6. Facility SIC(s):4931Combination Electric & Gas, & Other utility SVCS
7. Facility Comment : 128.9 MW Combined Cycle Gas Turbine with a HRSG and Duct Burner System Cogeneration facility			

#### Facility Contact

1. Facility Contact Name: Todd Shirley – Plant Manager
2. Facility Contact Mailing Address... Organization/Firm: Orlando Cogen - Northern Star Generation Services Street Address: 8275 Exchange Drive <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <span>City: Orlando</span> <span>State: FL</span> <span>Zip Code: 32809</span> </div>
3. Facility Contact Telephone Numbers: Telephone: (407) 851 - 1350      ext.      Fax:      ( 407 ) 851 - 1686
4. Facility Contact Email Address: todd.shirley@northernstargen.com

#### Facility Primary Responsible Official

**Complete if an “application responsible official” is identified in Section I. that is not the facility “primary responsible official.”**

1. Facility Primary Responsible Official Name: NA
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <span>City:</span> <span>State:</span> <span>Zip Code:</span> </div>
3. Facility Primary Responsible Official Telephone Numbers... Telephone: ( ) -      ext.      Fax: ( ) -
4. Facility Primary Responsible Official Email Address:

**Facility Regulatory Classifications**

**Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a “major source” and a “synthetic minor source.”**

1. <input type="checkbox"/> Small Business Stationary Source	<input type="checkbox"/> Unknown
2. <input type="checkbox"/> Synthetic Non-Title V Source	
3. <input checked="" type="checkbox"/> Title V Source	
4. <input checked="" type="checkbox"/> Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. <input type="checkbox"/> Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. <input type="checkbox"/> Major Source of Hazardous Air Pollutants (HAPs)	
7. <input type="checkbox"/> Synthetic Minor Source of HAPs	
8. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. <input type="checkbox"/> One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. <input type="checkbox"/> One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. <input type="checkbox"/> Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment:	

**List of Pollutants Emitted by Facility**

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
Carbon Monoxide	A	
Acetaldehyde	C	
1,3-Butadiene	C	
Acrolein	C	
Arsenic Compounds (inorganic including arsine)	C	
Benzene (including benzene from gasoline)	C	
Beryllium Compounds	C	
Cadmium Compounds	C	
Chromium Compounds	C	
Cobalt Compounds	C	
Ethyl benzene	C	
Formaldehyde	C	
Hexane	C	
Manganese Compounds	C	
Mercury Compounds	C	
Naphthalene	C	
Nickel Compounds	C	
Polycyclic organic matter	C	
Propylene oxide	C	
Selenium Compounds	C	
Toluene	C	
Xylenes (isomers and mixtures)	C	
Nitrogen Oxides	A	
Particulate Matter - Total	B	
Particulate Matter - PM10	B	
Sulfur Dioxide	B	
Volatile Organic Compounds	B	

## B. EMISSIONS CAPS

### Facility-Wide or Multi-Unit Emissions Caps

1. Pollutant Subject to Emissions Cap	2. Facility Wide Cap [Y or N]? (all units)	3. Emissions Unit ID No.s Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap
CO		001	22.3	92.1	AC48-206720
NOx		001	57.4	251.4	AC48-206720
PM		001	9	39.4	AC48-206720
PM10		001	9	39.4	AC48-206720
SO2		001	2.82	12.4	AC48-206720
VOC		001	3	13	AC48-206720
CO		002	12.2	22.5	AC48-206720
NOx		002	12.2	22.5	AC48-206720
PM		002	1.2	2.2	AC48-206720
PM10		002	1.2	2.2	AC48-206720
VOC		002	3.7	6.8	AC48-206720

7. Facility-Wide or Multi-Unit Emissions Cap Comment:



### C. FACILITY ADDITIONAL INFORMATION

#### Additional Requirements for All Applications, Except as Otherwise Stated

1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>9/2003</u>
2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>9/2003</u>
3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>9/2003</u>

#### Additional Requirements for Air Construction Permit Applications

1. Area Map Showing Facility Location: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable (existing permitted facility)
2. Description of Proposed Construction or Modification: <input checked="" type="checkbox"/> Attached, Document ID: <u>Appendix A</u>
3. Rule Applicability Analysis: <input checked="" type="checkbox"/> Attached, Document ID: <u>Appendix 5</u>
4. List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable (no exempt units at facility)
5. Fugitive Emissions Identification (Rule 62-212.400(2), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
6. Preconstruction Air Quality Monitoring and Analysis (Rule 62-212.400(5)(f), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
7. Ambient Impact Analysis (Rule 62-212.400(5)(d), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
8. Air Quality Impact since 1977 (Rule 62-212.400(5)(h)5., F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
9. Additional Impact Analyses (Rules 62-212.400(5)(e)1. and 62-212.500(4)(e), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

**Additional Requirements for FESOP Applications**

1. List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.):  
 Attached, Document ID: \_\_\_\_\_  Not Applicable (no exempt units at facility)

**Additional Requirements for Title V Air Operation Permit Applications**

1. List of Insignificant Activities (Required for initial/renewal applications only):  
 Attached, Document ID: \_\_\_\_\_  Not Applicable (revision application)
2. Identification of Applicable Requirements (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought):  
 Attached, Document ID: \_\_\_\_\_  
 Not Applicable (revision application with no change in applicable requirements)
3. Compliance Report and Plan (Required for all initial/revision/renewal applications):  
 Attached, Document ID: \_\_\_\_\_  
Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.
4. List of Equipment/Activities Regulated under Title VI (If applicable, required for initial/renewal applications only):  
 Attached, Document ID: \_\_\_\_\_  
 Equipment/Activities On site but Not Required to be Individually Listed  
 Not Applicable
5. Verification of Risk Management Plan Submission to EPA (If applicable, required for initial/renewal applications only) :  
 Attached, Document ID: \_\_\_\_\_  Not Applicable
6. Requested Changes to Current Title V Air Operation Permit:  
 Attached, Document ID: \_\_\_\_\_  Not Applicable

**Additional Requirements Comment**

## **Appendix A**

### **Heat Rate Improvement Project Project Description**

## **Orlando CoGen Limited, L.P.**

### **Heat Rate Improvement Project**

#### **Project Description**

## **1 INTRODUCTION**

Northern Star Generation Services Company LLC is the operating agent for Orlando CoGen Limited, L.P. ("Orlando CoGen"), owners of a 123 MW natural gas fired cogeneration power plant in Orlando, Florida. The Orlando facility consists of a single Alstom (ABB) GT 11N1 gas turbine in combined cycle operation. The heat recovery steam generator (HRSG) is equipped with a duct burner. Both the gas turbine and duct burner are single fuel pipeline quality natural gas emission sources. The facility does not have dual fuel capability. Power output from the plant is delivered through the Progress Energy Florida ("PEF") transmission grid along an existing 69 kV transmission line to two customers, PEF and Reedy Creek Improvement District ("RCID"). Power is sold to both customers under existing long-term power purchase agreements. A facility utilizes a steam absorption chiller to produce chilled water for the adjacent Air Products facility and maintain FERC "QF" Qualified Facility status. The power plant is a base load facility that has historically operated at a very high capacity factor, averaging in excess of 87.0% for the period 1999 through 2002.

Orlando CoGen has three main modes of operation: 1) at 97 MW output, 2) at 114 MW output, and 3) at gas turbine base load output without supplemental firing the duct burners. The first mode (97 MW) occurs when the plant is providing PEF with 79 MW and RCID with 18 MW per the base energy provisions of both power purchase agreements ("PPA"). Duct burner firing is not required to produce 97 MW under any ambient conditions. The second mode (114 MW) occurs when RCID exercises their option to purchase an additional 17 MW under the provisions of their PPA. Orlando CoGen generally fires the duct burners during ambient temperatures in excess of 72 F in order to generate a net 114 MW. The third mode occurs when RCID is taking only 18 MW (i.e, the facility is contractually required to produce 97 MW) and the facility exercises a contractual right to sell additional power to PEF at PEF's "As-Available Rate", which is at that time judged to be higher than the facility's cost to produce. Under this base load scenario there is rarely any duct firing, as this is the least economic way to generate power

Orlando CoGen's Alstom GT 11N1 gas turbine has been in service since the start of plant operations in 1993. As this turbine has aged, there has been a gradual decline in performance associated with normal wear and tear. The result of this performance decline is that under high temperature conditions it is increasingly difficult for Orlando CoGen to meet its contractual output of 114 MW. In addition, due to the performance

decrease and increasing demand for electricity in general, the plant has had to rely increasingly in recent years on duct firing throughout the year in order to reach its generating requirements. Use of duct firing is the least efficient and least economic means of generating electricity in a combined cycle power plant.

Due to the above considerations, Orlando CoGen has evaluated various options for improving plant performance in order to meet contractual obligations in the future and improve the overall plant heat rate. The two most feasible options for this have been determined to be: 1) the installation of an inlet air fogging system and 2) upgrading the existing Alstom GT 11N1 gas turbine to a GT 11NM gas turbine. Either or both of these options may be implemented by Orlando CoGen.

## **2 SCHEDULE**

The plant is undergoing a major scheduled maintenance outage starting on April 22, 2005. This outage is scheduled to last 25 days and will involve the entire power train (i.e., gas turbine, HRSG, steam turbine). Implementation of one or both of the heat rate improvement options is likely to occur during the spring outage. However, there is a possibility that the spring outage could be delayed to later in 2005, which would delay implementation of the modification. In addition, it is possible that one of the options may be implemented in 2005 and the other at a later date. At this time, Orlando CoGen is requesting an Authorization to Construct either of both of these projects between the time of permit issuance and June 1, 2007.

## **3 DESCRIPTION OF PROPOSED PROJECT**

As indicated above, the proposed project will involve the implementation of either or both options for improving plant heat rate: installation of an inlet air fogging system and upgrading the existing gas turbine from an Alstom GT 11N1 to a GT 11NM.

### **3.1 Inlet Air Fogging System**

Orlando CoGen is considering proposals for an inlet air fogging system from three different vendors: Mee Industries Inc., Caldwell Energy Company, and Vogt. The Mee Industries proposal is provided in Appendix 1 as an example of the scope of the project. All of the proposed inlet air fogging systems are essentially identical in terms of the basic thermodynamic concept of operation.

The purpose behind inlet air fogging is to reduce the temperature in the inlet airflow of combustion turbines. De-ionized water is pumped at high pressure (1000 to 3000 psi) to a water atomizing system. This water is sprayed from nozzles in the inlet air duct to create very small fog droplets (about 10 microns in diameter). As the fog particles evaporate, the air cools adiabatically. The fog output is controlled so that all droplets evaporate before reaching the turbine. The lower inlet air temperatures results in an increase in density which results in an increase in mass flow thru the gas turbine and

HRSG. The increased mass flow results in additional power generation via the most efficient mode of operation for the facility.

At design conditions of 99 °F dry bulb temperature and 77 °F wet bulb temperature, a reduction in the inlet air temperature of up to 22 °F is possible. The estimated benefits from this reduction in temperature are summarized below for an Alstom GT 11 N1 turbine. The expected benefits would be similar for a GT 11 NM turbine.

<b>Conditions</b>	
Ambient Dry Bulb	99 °F
Cooling From Fogging	22 °F
Resulting Temperature to Turbine	77 °F
Water Use for Fogging	23.86 gallons/minute
<b>Turbine Performance (Alstom GT 11 N1)</b>	
Power Without Fogging	70.392 MW
Power With Fogging	75.803 MW
Net Power Increase	5.411 MW
Percent Power Generation Increase	7.69%
Heat Rate Without Fogger	11,092 Btu/KWh
Heat Rate With Fogger	10,897 Btu/KWh
Heat Rate Improvement	195 Btu/KWh
Heat Rate Improvement (%)	1.76%

There are two significant benefits to the use of inlet air fogging. The increase in mass flow at lower inlet air temperatures produces a substantial net power increase from the turbine. The increased mass flow also results in increased steam generation from the HRSG. The combined increase in power from the gas turbine and steam turbine reduces supplemental firing of the HRSG duct burner, which is the least efficient means of generating power. The overall effect of the use of inlet air fogging will be a reduction in fuel use, which will be most notable in the reduction of duct burner fuel use. The overall impact will be to reduce emissions by reducing the annual fuel use. All of the existing emission and fuel limits in Orlando CoGen's operating permit will be met after implementation of the inlet air fogging system.

### **3.2 Alstom GT 11NM Turbine Upgrade**

The gas turbine upgrade would convert the gas turbine from a GT 11N1 to a GT 11NM. The purpose of this upgrade is to improve the overall efficiency of the gas turbine through increasing the gas channel height, equalizing turbine stage loading, using airfoils with improved aerodynamics, implementing advanced blade cooling technology, and using improved sealing technology to reduce leakage air. All of the upgraded parts are located downstream of the DLN combustor. The improved design provides improved conversion of thermal energy produced by the combustion system to mechanical energy. The overall impact of the GT 11NM upgrade would be to improve thermal efficiency of the gas turbine. This will allow Orlando CoGen to generate the same quantity of electricity that is currently being produced while firing less fuel.

Appendix 2 to this section contains a comparison of the expected turbine performance (at an ambient temperature of 86 F) before and after the upgrade at the three modes of plant operation: 97 MW, 114 MW, and base load. The first case shows that a net plant power production of 97 MW can be achieved by firing approximately 0.9 percent less fuel using the GT 11NM as compared to the GT 11N1. The second case indicates that this fuel savings is approximately 2.5 percent at a net plant output of 114 MW. The third case shows that at base load the NM produces 3.3 percent more plant power than the N1 (113.7 MW versus 110.0 MW) and fires 1.4 percent more fuel. Note that in all three cases the increased efficiency of the NM turbine actually results in a decrease in steam turbine output due to lower exhaust temperatures. However, the increase in gas turbine output is greater than the decrease in steam turbine output and, as a result, produces a net increase in the total plant output after the NM upgrade. Attachment 2 to this letter provides more detailed comparisons of NM and N1 performance under a range of ambient conditions.

The main goal of the upgrade project is to reduce the costs of power generation by increasing turbine efficiency. The cost savings are primarily realized through a reduction in fuel use. Appendix 3 to this letter provides a projection of the potential annual fuel costs, assuming that future plant operations are similar to those that occurred in 2003. The greatest fuel savings occur during the period in which the plant is producing 114 MW for sale to PEF and RCID. As the NM turbine is more efficient, there will be less need to fire the duct burner than with the N1 turbine. Although the NM is theoretically capable of firing more fuel during base load operations than the N1, the maximum firing rate would continue to be limited by the existing permit condition of 856.9 MMBtu/hr (corrected to ISO conditions). Attachment 3 shows that the fuel savings during operations at 97 MW and 114 MW will be of a magnitude sufficient to produce a net annual fuel reduction. Since the combustion portion of the turbine will not be affected by the upgrade, the annual net fuel reduction would also produce an annual net reduction in emissions.

**APPENDIX 1**

**Inlet Air System Proposal  
From Mee Industries, Inc.**



**Mee Industries Inc.**

204 West Pomona Ave. Monrovia, CA 91016-4526  
tel. 800-732-5364, 626-359-4550 fax 626-359-4660  
www.meefog.com

December 27, 2004

MEE FOG SYSTEM PROPOSAL  
GAS TURBINE INLET AIR COOLING  
For an  
**ABB GT 11 N 1**  
AT  
**ORLANDO COGEN**

**1.0 DESIGN CONDITIONS:**

Ambient Dry Bulb Temperature: 99°F  
Wet Bulb Temperature: 77°F  
Gas Turbine Type ABB GT 11N 1  
Inlet air flow: 687 LB/SEC @ ISO (59F 60% r.h.)  
Elevation: 100' above mean sea level.

**2.0 FOG SYSTEM SPECIFICATIONS:**

Operating pressure: 2000 psi  
Fog droplet size: 8.5 microns @ 2500 fpm  
(SMD32 Sauter Mean Dia.)  
Number of nozzles: 572  
Nozzle flow rate: 0.045 gpm per nozzle  
Maximum Water Use: 25.74 gpm  
Pump skid power requirement: 1 x 5 hp + 5 x 10 hp = 55 hp total  
Cooling capacity: 22°F cooling  
Cooling stages: 11 stages (2.0s°F per stage).

**3.0 SCOPE OF SUPPLY:**

Mee Industries standard system will supply:

- A. The Fog Pump Skids complete with controller and backup copy of our PLC Operating Software.
- B. The stainless steel feed lines and mounting hardware.
- C. The Fog Nozzle Manifolds and mounting hardware.

Orlando Cogen  
ABB GT 11N 1 – 22° F of Cooling



#### 4.0 COOLING AND POWER AUGMENTATION:

The Mee Fog System is designed to produce 22°F of cooling capacity at the 99°F dry bulb and 77°F wet bulb condition. This will allow an estimated 7.69% power augmentation at this ambient condition.

#### 4.1 CLIMATE DATA:

ASHRAE (The American Society of Heating Refrigeration and Air Conditioning Engineers) gives climate data for summer conditions that equaled or exceeded 1% of summer hours as 94°F dry bulb and 76°mean coincident wet bulb of 76°F. To this is added 5°F dry bulb temperature at the same dewpoint rounded to the nearest wet bulb temperature. This number is intended to account for the hotter hours that are not included in the 1% number. (The record high temperature for Orlando is 102°F.)

#### 4.2 INCREMENTAL FOG CONTROL (STAGING):

The Mee Fog System design has eleven (11) stages of fog. The stages are operated according to the capacity of the air to evaporate water. The 2.0°F per stage allows the operator good control of the fogging application.

#### 5.0 PUMP SKID CONTROLLER AND WEATHER STATION

The Fog Pump Skid has an on-board Programmable Logic Controller (PLC) an OIT (Operator Interface Terminal) and a weather station. The weather station is typically mounted on the Fog Pump Skid itself but can also be remotely located.

#### 5.1 PLC, OIT & WEATHER STATION PROVIDE THE FOLLOWING:

- A. Control of the various safety devices and interlocks on the pump skids.
- B. Measurement and calculation of weather data.
- C. Management of the stages of fog cooling.
- D. The capability of transmission of data to a host computer via a communication port. (This option must be specified in advance.)
- E. The OIT provides operator adjustment capability and information (e.g. temp, flow, r.h. etc)

## 5.2 PUMP SKID DEVICES:

The Fog Pump Skid has the following devices;

- A. A water flow meter for total skid water flow (4 to 20 mA).
- B. An inlet pressure switch for each pump unit (on/off).
- C. A discharge pressure switch for each pump unit (on/off).
- D. A magnetic motor starter for each pump (on/off).

## 5.3 WEATHER STATION:

The weather station consists of a relative humidity sensor and a temperature sensor. These sensors are both connected to a transmitter (4 to 20 mA) which conditions their signals to be linear and proportional to the sensed values connected in turn to the PLC.

## 5.4 SKID LOCK-OUT & ENABLE FEATURE:

A remote switch must be closed by the host computer or DCS signifying that all turbine related permissives are met and that the Pump Skid has been cleared for operation. If the signal is lost or open, the skid is automatically shut down. The skid also has an emergency stop button, which can be activated and immediately shuts down the skid.

## 5.5 PUMP SKID FAULTS & ALARMS:

- A. Low Water Flow: If the skid water flow for a given number of stages falls to less than 85% of its rated flow, a fault condition exists. In this case an Alarm is displayed on the PLC interface panel and a fault light and fault signal are activated.
- B. Low Inlet Pressure: The PLC checks the state of the inlet pressure switch several seconds after a pump unit is started. If the inlet water pressure is not up to setpoint a fault condition exists. The pump is then shut down and an alarm is displayed on the PLC interface panel and a fault light and fault signal are activated.
- C. Low Discharge Pressure: The PLC checks the state of the discharge pressure switch several seconds after the pump is started. If the discharge pressure is less than 90% of the specified pressure a fault condition exists (possibly due to a leak in the high-pressure system). The pump is shut down and an alarm is displayed and a fault light and fault signal are activated. Low discharge



pressure would result in larger droplets being produced, which may cause damage to the turbine compressor.

- D. Auxiliary Contact on Motor Contactors: The PLC has an input from the auxiliary contact on each of the motor contactors. The main motor control center has fuses, thermal protectors and three phase monitoring fuses. In the event of a fault (due to short Circuit, thermal overload or single-phasing) the pump or pumps are shut down, the auxiliary contact on the motor contactor opens and an alarm is displayed on the PLC interface panel and a fault light and fault signal are activated.

#### 5.6 PLC FOG STAGING FUNCTION:

The Fog Pump Skid has six (6) pump units. The pumps are operated in a sequence that provides eleven (11) stages of fog output. This allows 2.0°F change per stage.

The user inputs the desired amount of overcooling or under-cooling as compared to saturation. Set-points over 100% will result in the fog system over-fogging (i.e. it will inject more water into the air stream than can actually be evaporated at the current ambient conditions, the excess water droplets will be carried by the air stream into the compressor section where the heat of compression will cause them to evaporate and augmenting power output.

The PLC then computes, based on ambient conditions, how many stages of fog can be turned on without exceeding the set-point and turns on that number of stages, turning on one pump at a time at 60 second intervals.

#### 5.7 PLC TYPE, OIT DATA DISPLAYED & INPUT/ OUTPUT TO PLANT:

##### 5.7.1 PLC TYPE

The PLC selected for the skid controls panel is: Allen Bradley SLC 5/03

##### 5.7.2 OIT DISPLAY DATA

The skid Maple OIT (Operator Interface Terminal) display includes the following data (in a scroll-through type display, as the standard).

- A. The current ambient relative humidity and dry bulb and wet bulb temperatures.
- B. The number of stages currently in operation and its current total output (in gpm, and in °C or °F of cooling potential).



- C. The current overcooling or under-cooling set-point.
- D. The current water flow of the total skid.
- E. All alarm functions as given above.

5.7.3.1 BETWEEN PLC & PLANT – (RELAY CONTACTS ON/ OFF)

The skid PLC is hard wired to the Plant and relays the following information.

- 1. Inputs: (switch or relay) for “skid enable”
- 2. Outputs: (switches or relays) for “skid operating” and “skid fault”

6.0 EQUIPMENT AND MATERIAL PROVIDED

Type of Turbine: ABB GT 11N 1      Mass flow : 687 lb/sec at ISO condition

**Fogging System Description - 22°F Cooling**

- 1 ea. Fog Pump Skid, model FPS-2750-6-11 with:
  - 5 ea. Fog Pump Units, model FM-500-1051 with capacity for 111 fog nozzles, 5.0 gpm @ 2000 psi, ceramic plunger pump with Stainless Steel head and 10 hp, TEFC electric motor (480 volt, 3 phase). Includes high pressure manifold with pressure regulating valve, high pressure gauge, nitrogen charged pulsation dampener, high pressure discharge hose and high pressure cut-off switch. All fittings are stainless steel.
  - 1 ea. Fog Pump Unit, model FM-250-311 with capacity for 55 fog nozzles, 3.0 gpm @ 2000 psi, ceramic plunger pump with Stainless Steel head and 5hp, TEFC electric motor (480 volt, 3 phase). Includes high pressure manifold with pressure regulating valve, high pressure gauge, nitrogen charged pulsation dampener, high pressure discharge hose and high pressure cut-off switch. All fittings are stainless steel.
  - 1 ea. Inlet water manifold; 1-1/2” stainless steel pipe, solenoid valve, low-pressure switch, flow meter for total skid and low pressure feed hoses.
  - 1 ea. Water Filter; stainless steel housing, model HIF-21, with 21 ea.



sub-micron particle size, (0.35  $\mu\text{m}$ ) replaceable water filters.

- 1 ea. Motor Control Panel; NEMA 4 enclosure with main disconnect (fused), magnetic motor starters and thermal protectors for each pump unit.
  - 1 ea. Weather Station; Relative humidity and temperature sensor with signal transmitter and protective shield
  - 1 ea. Fog Pump Skid Control Panel; NEMA 4 enclosure, Allen Bradley PLC unit and Maple OIT for skid control and fog staging control.
  - 22 ea. Fog Nozzle Manifolds, with 26 fog nozzles each. 1/2" O.D. type 316 stainless steel tube, nozzle adapters with o-ring seals. Fog nozzles are impaction pin, type 316 stainless steel with 0.006" diameter orifice. Fog nozzles are connected by a stainless steel restraining wire to the fog nozzle manifold to avoid any possibility of nozzles detaching from tube. Fittings are double-ferrule, type 316 stainless steel, and compression fittings. Fog Nozzles are installed on fog nozzle lines and shipped with protective plastic caps.
  - 330 ft. Stainless steel feedlines: (0.75" O.D. 0.049 inch thick wall, type 316 stainless steel) with double-ferrule, type 316 stainless steel, compression fittings.
  - 100 ft. Stainless steel feedlines: (0.50" O.D. 0.035 inch thick wall, type 316 stainless steel) with double-ferrule, type 316 stainless steel, compression fittings.
- Note: This assumes a 50 linear feet distance between the fog skid location and the inlet duct wall. Further costs will be incurred if the distance is significantly different.
- 1 set Mounting hardware for fog nozzle manifolds and feedlines. Includes vibration absorbing, uni-strut clamps for feedlines, clamps for fog lines, stainless steel channel strut for holding Fog Nozzle Manifolds
  - 1 set Startup spare parts; including, water filter cartridges (sub-micron), pump oil, fog nozzle filters, fog nozzle o-rings, spare fog nozzles, fittings, etc.
  - 3 sets Drain flapper valves to be installed on the duct and bellmouth floors. Note number may vary depending on design.



3 sets Fog System manuals with drawings (pump unit details with key parts called out, P&ID for entire system, feedline routing drawings, fog nozzle and fitting details, electrical schematic, etc.).

7.0 PRICE

Installed System Price (Including Freight)

Fog System for one ABB GT11N 1 Turbine ..... [REDACTED]  
Plus applicable sales taxes

7.1 INSTALLATION:

Mee Industries will install the entire fog system with the following exceptions:

- Labor and Material to connect the demin water supply\* from its source to the fog pump skid.
- Labor and Material to connect electrical supply from its source to the fog pump skid.
- Labor and Material to unload and place the fog pump skid on the concrete pad.

MeeFog skid should be supplied the demineralized water supply at 20 to 60 psi g.

7.2 Delivery

Allow four (4) weeks for shipment of Fog Nozzle Manifolds

Allow six (6) weeks for shipment of Fog Pump Skids.

7.3 Payment Terms



- 10% down payment, with the order
- 30% upon delivery of equipment
- 50% upon completion of installation
- 10% upon completion of all contract obligations

Terms on all payments are 2% 10 days, net 30.

## 8.0 WARRANTY

### 8.1 EQUIPMENT, DESIGN & WORKMANSHIP:

Mee Industries warrants all design, equipment and workmanship provided by Mee to be free from defects for a period of one year from the date of final acceptance of the MeeFog system.

## 9.0 QUALITY ASSURANCE

Mee Industries has implemented a Quality Management System in accordance with ISO 9001:1994. The Certificate Registration Number is: 951 00 0908.

The scope of this Quality Management System governs:

“Design and Manufacture of Fog Systems”

## 10.0 INDUSTRY EXPERIENCE

Mee Industries is the industry leader with about 85% of all gas turbine compressor fogging systems worldwide, with over 598 installations completed and operating successfully as of December 2004.

Quotation by,

Ross Petersen  
Sale Director – Gas Turbine Division, North America  
Mee Industries, Inc.



## **APPENDIX 2**

**Comparison of "New and Clean" Performance  
Alstom GT 11 N1 versus Alstom GT 11 NM  
(All Cases Ambient Temperature = 86 °F**

**Comparison of “New and Clean” Performance  
Alstom GT 11 N1 versus Alstom GT 11 NM  
(All Cases Ambient Temperature = 86 °F)**

**Case 1: Same Net Power Plant Production – 97 MW**

<b>Parameter</b>	<b>Units</b>	<b>GT 11N1</b>	<b>GT 11NM</b>	<b>Percent Difference After Upgrade</b>
Gross Plant Power	kW	100,410	100,369	-0.04%
Balance of Plant Losses	kW	3,052	3,016	-1.2%
Net Plant Power	kW	97,358	97,353	0%
Gross GT Output	kW	63,195	64,891	2.7%
Shaft ST Output	kW	37,215	35,478	-4.7%
GT Heat Rate	Btu/kWh	11,302.4	10,906.3	-3.5%
GT Heat Added	kBtu/hr	714,851	708,312	-0.9%
GT Efficiency	%	30.2%	31.2%	3.3%
Duct Burner Heat Added	kBtu/hr	0	0	0%
Total Plant Heat Added	kBtu/hr	714,851	708,312	-0.9%

**Case 2: Same Net Power Plant Production – 114 MW**

<b>Parameter</b>	<b>Units</b>	<b>GT 11N1</b>	<b>GT 11NM</b>	<b>Percent Difference After Upgrade</b>
Gross Plant Power	kW	117,674	117,369	-0.05%
Balance of Plant Losses	kW	3,220	3,130	-2.8%
Net Plant Power	kW	114,454	114,482	0.02%
Gross GT Output	kW	72,301	76,576	5.9%
Shaft ST Output	kW	45,373	41,036	-9.6%
GT Heat Rate	Btu/kWh	11,021.1	10,550.5	-4.3%
GT Heat Added	kBtu/hr	797,498	808,595	1.4%
GT Efficiency	%	31.0%	32.3%	4.2%
Duct Burner Heat Added	kBtu/hr	43,039	11,229	-73.9%
Total Plant Heat Added	kBtu/hr	840,537	819,824	-2.5%

**Comparison of “New and Clean” Performance  
Alstom GT 11 N1 versus Alstom GT 11 NM  
(All Cases Ambient Temperature = 86 °F)**

**Case 3: Base Load Operations (no duct firing)**

<b>Parameter</b>	<b>Units</b>	<b>GT 11N1</b>	<b>GT 11NM</b>	<b>Percent Difference After Upgrade</b>
Gross Plant Power	kW	113,054	116,680	3.2%
Balance of Plant Losses	kW	3,018	3,010	-0.3%
Net Plant Power	kW	110,036	113,670	3.3%
Gross GT Output	kW	72,301	76,576	6.2%
Shaft ST Output	kW	40,753	40,104	-1.6%
GT Heat Rate	Btu/kWh	11,021.1	10,550.5	-4.3%
GT Heat Added	kBtu/hr	797,498	808,595	1.4%
GT Efficiency	%	31.0%	32.3%	4.2%
Duct Burner Heat Added	kBtu/hr	0	0	0%
Total Plant Heat Added	kBtu/hr	797,498	808,595	1.4%

### **APPENDIX 3**

#### **Detailed Performance Comparisons of N1 and NM Under Various Ambient and Load Conditions**

**Performance of NM Versus N1 Under Various Ambient Conditions**  
**Operating Scenario: 97 MW Net Plant Output**

ORLN-20		NM	NM	NM	NM	NM	NM	NM	NM
		My Input	My Input	My Input	My Input	My Input	My Input	My Input	My Input
VIGV	degrees	-20	-20	-20	-20	-20	-20	-20	-20
TIT	deg F	1749.5	1766.75	1785.4	1805.56	1815.03	1827.35	1852.09	1879.335
T amb C	deg C	5.00	10.00	15.00	20.00	22.22	25.00	30.00	35.00
T amb F	deg F	G / C Input	G / C Input	G / C Input	G / C Input	G / C Input	G / C Input	G / C Input	G / C Input
GT Pwr	MW	67.041	66.715	66.339	65.903	65.686	65.395	64.891	64.324
H R	btu/kWh	10,841.1	10,843.7	10,850.7	10,863.3	10,871.1	10,882.7	10,906.3	10,937.9
me2	lb / h	2,228,205	2,196,937	2,163,991	2,129,513	2,113,735	2,093,647	2,056,538	2,018,331
Te2	deg F	888.7	902.8	918.4	935.5	943.7	954.4	975.9	999.9
Gross CC Pwr	MW	100.340	100.340	100.346	100.350	100.353	100.357	100.369	100.384
Gross GT Pwr	MW	<b>67.041</b>	<b>66.715</b>	<b>66.339</b>	<b>65.903</b>	<b>65.686</b>	<b>65.395</b>	<b>64.891</b>	<b>64.324</b>
Gross ST Pwr	MW	<b>33.299</b>	<b>33.624</b>	<b>34.007</b>	<b>34.447</b>	<b>34.667</b>	<b>34.962</b>	<b>35.478</b>	<b>36.060</b>
BOP Losses	MW	<b>2.983</b>	<b>2.987</b>	<b>2.992</b>	<b>2.997</b>	<b>3.000</b>	<b>3.004</b>	<b>3.016</b>	<b>3.032</b>
Net CC Pwr	MW	97.356	97.352	97.354	97.352	97.353	97.353	97.353	97.352
GT QA	MW	<b>213.004</b>	<b>212.020</b>	<b>210.961</b>	<b>209.816</b>	<b>209.275</b>	<b>208.570</b>	<b>207.412</b>	<b>206.195</b>
	MMBtu/hr	<b>727.408</b>	<b>724.047</b>	<b>720.431</b>	<b>716.521</b>	<b>714.673</b>	<b>712.267</b>	<b>708.312</b>	<b>704.157</b>
Gross CC eta	-	0.4711	0.4733	0.4757	0.4783	0.4795	0.4812	0.4839	0.4868
Net CC eta	-	0.4571	0.4592	0.4615	0.4640	0.4652	0.4668	0.4694	0.4721
Gross GT eta	-	0.3147	0.3147	0.3145	0.3141	0.3139	0.3135	0.3129	0.3120
Net ST Pwr	MW	30.316	30.637	31.015	31.450	31.667	31.959	32.462	33.028
Net HRSG QA	MW	<b>112.869</b>	<b>113.924</b>	<b>115.120</b>	<b>116.501</b>	<b>117.177</b>	<b>118.085</b>	<b>120.086</b>	<b>122.449</b>
Net SC eta	-	0.2686	0.2689	0.2694	0.2700	0.2703	0.2706	0.2703	0.2697
HV Xfmr Loss	MW	0.353	0.353	0.353	0.353	0.353	0.353	0.353	0.353
Net CC Pwr HV	MW	97.004	97.000	97.002	97.000	97.001	97.001	97.000	97.000
Net CC eta HV	MW	0.4554	0.4575	0.4598	0.4623	0.4635	0.4651	0.4677	0.4704

**Comparison: Includes HV Xfmr Losses**

Net CC Pwr HV	MW	0.001	-0.002	0.002	0.000	0.000	-0.003	-0.005	0.000
Net CC eta HV	% delta	0.197	0.171	0.177	0.224	0.269	0.333	0.425	0.672
	% delta Relative	<b>0.435</b>	<b>0.375</b>	<b>0.386</b>	<b>0.486</b>	<b>0.584</b>	<b>0.721</b>	<b>0.918</b>	<b>1.448</b>

ORLN-20		N 1	N 1	N 1	N 1	N 1	N 1	N 1	N 1
		My Input	My Input	My Input	My Input	My Input	My Input	My Input	My Input
VIGV	degrees	-20	-20	-20	-20	-20	-20	-20	-17.025
TIT	deg F	1782.15	1798.73	1816.44	1835.7	1845	1857	1879.5	1880.6
T amb C	deg C	5.00	10.00	15.00	20.00	22.22	25.00	30.00	35.00
T amb F	deg F	G / C Input	G / C Input	G / C Input	G / C Input	G / C Input	G / C Input	G / C Input	G / C Input
GT Pwr	MW	64.592	64.315	64.018	63.729	63.619	63.477	63.195	63.177
H R	btu/kWh	11,301.0	11,290.8	11,287.2	11,288.5	11,289.7	11,292.7	11,302.4	11,297.8
me2	lb / h	2,228,205	2,196,937	2,163,991	2,129,513	2,113,735	2,093,647	2,056,538	2,071,685
Te2	deg F	920.4	934.1	948.9	965.1	972.8	982.9	1002.0	1003.0
Gross CC Pwr	MW	100.377	100.379	100.380	100.386	100.390	100.399	100.410	100.408
Gross GT Pwr	MW	<b>64.592</b>	<b>64.315</b>	<b>64.018</b>	<b>63.729</b>	<b>63.619</b>	<b>63.477</b>	<b>63.195</b>	<b>63.177</b>
Gross ST Pwr	MW	<b>35.785</b>	<b>36.063</b>	<b>36.362</b>	<b>36.657</b>	<b>36.771</b>	<b>36.922</b>	<b>37.215</b>	<b>37.231</b>
BOP Losses	MW	<b>3.022</b>	<b>3.025</b>	<b>3.028</b>	<b>3.033</b>	<b>3.037</b>	<b>3.042</b>	<b>3.052</b>	<b>3.056</b>
Net CC Pwr	MW	97.355	97.354	97.352	97.353	97.353	97.356	97.358	97.352
GT QA	MW	<b>213.927</b>	<b>212.819</b>	<b>211.770</b>	<b>210.837</b>	<b>210.496</b>	<b>210.081</b>	<b>209.327</b>	<b>209.182</b>
	MMBtu/hr	<b>730.562</b>	<b>726.777</b>	<b>723.196</b>	<b>720.008</b>	<b>718.844</b>	<b>717.426</b>	<b>714.851</b>	<b>714.356</b>
Gross CC eta	-	0.4692	0.4717	0.4740	0.4761	0.4769	0.4779	0.4797	0.4800
Net CC eta	-	0.4551	0.4574	0.4597	0.4617	0.4625	0.4634	0.4651	0.4654
Gross GT eta	-	0.3019	0.3022	0.3023	0.3023	0.3022	0.3022	0.3019	0.3020
Net ST Pwr	MW	32.763	33.039	33.334	33.624	33.734	33.879	34.163	34.175
Net HRSG QA	MW	<b>118.912</b>	<b>119.821</b>	<b>120.800</b>	<b>121.929</b>	<b>122.519</b>	<b>123.296</b>	<b>124.801</b>	<b>126.114</b>
Net SC eta	-	0.2755	0.2757	0.2759	0.2758	0.2753	0.2748	0.2737	0.2710
HV Xfmr Loss	MW	0.353	0.353	0.353	0.353	0.353	0.353	0.353	0.353
Net CC Pwr HV	MW	97.002	97.001	97.000	97.000	97.001	97.004	97.005	97.000
Net CC eta HV	MW	0.4534	0.4558	0.4580	0.4601	0.4608	0.4617	0.4634	0.4637





**APPENDIX 4**

**Estimated Impact of the NM Upgrade  
on Fuel Use**



## Appendix 4

### Description of the Effect of NM Upgrade on Fuel Use Under Various Plant Dispatch Scenarios

Plant Dispatch Scenario	Plant Output	Projected Annual Frequency of Occurrence <sup>1</sup>	Effect of N1 to NM Upgrade
PEF: 79 MW RCIC: 18 MW	97 MW	35.7%	There is a reduction in fuel needed to produce 97 MW after the NM upgrade. Fuel use reduction is approximately 3%.
PEF: 79 MW RCID: 35 MW	114 MW	54.6%	There is a reduction in fuel needed to produce 114 MW after the NM upgrade. The greatest reduction will be at higher temperatures, where there will be less duct firing after the NM upgrade. Use of the duct burners to achieve 114 MW is the least efficient use of fuel. Overall fuel use reduction will be approximately 6%.
<u>Base Load Case</u> PEF: 79 MW RCID: 18 MW (Additional power to PEF, generally up to unfired base load net output at "As Available Rates")	107 MW to 123 MW depending on ambient conditions	9.7%	The NM is capable of generating additional output from the gas turbine at base load as compared to the N1. The increase in fuel use at base load will be approximately 3% after the NM upgrade.

<sup>1</sup> Estimates based on Orlando CoGen operations in 2003.

**Appendix 4**

**Estimated Annual Fuel Savings  
Based on Operations at 86 F**

Operating Case	Heat Input (MMBtu/hr)		Heat Input Difference NM - N1 (MMBtu/hr)	Percent Annual Operations By Scenario <sup>1</sup>	Annual Heat Input Difference (MMBtu/year) <sup>2</sup>
	N1	NM			
97	758.055	734.969	-23.186	35.7%	-72,510
114	933.963	873.815	-60.148	54.6%	-287,685
Base	791.268	816.876	25.608	9.7%	21,760

**Annual Total: -338,435**

<sup>1</sup>Based on Orlando CoGen plant operations in 2003.

<sup>2</sup>Based on 8,760 hours/year of operation.

**Appendix 5**  
**Netting Analysis of Heat Improvement Modifications and PSD determination**

The following tables use the last two years representative of typical plant operations: 2002 and 2003. Based on the average emission factors and fuel use for those two years the baseline emissions can be calculated. The maximum emissions after the modification (be it the NM conversion, fogging, or both) are equal to the baseline emission factors time maximum fuel use for the combustion turbine and duct burner. This assumed 8760 hours of combustion turbine operation and the permit maximum duct firing of 450,000 MMBtu/year. In essence the tables represent a comparison of past actual to future PTE. This analysis shows that regardless of which modification project is implemented, that the PSD significant emission thresholds cannot be exceeded. This analysis is based upon the emission rates not changing by improvements the plant heat rate (only the heat input), then we can identify the maximum possible increase in emissions by comparing historic emissions to the emissions that would occur at maximum fuel usage. This is done since no changes to the permit emission limits or fuel limits and therefore the potential to emit (PTE).

**Combustion Turbine and Duct Burner  
Actual Versus Maximum Permitted Fuel Usage**

Parameter	Maximum Fuel Usage (MMcf/yr)*	Actual Fuel Usage (MMcf/yr)		
		2002	2003	Baseline 2-Year Average
Combustion Turbine	8,006	7,402	7,518	7,460
Duct Burner	478	178	388	283

\* Based on 8760 hours of operation at CT firing rate of 860 MMBtu/hr and maximum permitted duct firing of 450,000 MMBtu/year. Heat content = 941 MMBtu/MMcf (the average heat content for 2002 and 2003).

**Combustion Turbine and Duct Burner Emission Factors**

Pollutant	Combustion Turbine Emission Factors (lb/MMcf)**			Duct Burner Emission Factors (lb/MMcf)**		
	2002	2003	Average	2002	2003	Average
NOx	59.45	61.097	60.2735	59.45	50.76412	55.10706
CO	0.5388	0.5698	0.5543	8.361	2.2582	5.3096
VOC	3.19	3.19	3.19	27.8	27.8	27.8
PM	8.4	8.4	8.4	8.4	8.4	8.4
PM10	8.4	8.4	8.4	8.4	8.4	8.4
SO2	0.6	0.6216	0.6108	0.6	0.6216	0.6108

\*\*Emission factors are from 2002 and 2003 annual operating reports for Orlando CoGen.

**Baseline Emissions**

Pollutant	CT Emissions		Duct Burner Emissions		Annual Emissions (tons/year)
	Emission Factor lb/MMcf	Fuel Usage MMcf/yr	Emission Factor lb/MMcf	Fuel Usage MMcf/yr	
NOx	60.2735	7,460	55.10706	283	232.62
CO	0.5543	7,460	5.3096	283	2.82
VOC	3.19	7,460	27.8	283	15.83
PM	8.4	7,460	8.4	283	32.52
PM10	8.4	7,460	8.4	283	32.52
SO2	0.6108	7,460	0.6108	283	2.36

**Maximum Emissions After Modification**

Pollutant	CT Emissions		Duct Burner Emissions		Annual Emissions (tons/year)
	Emission Factor lb/MMcf	Fuel Usage MMcf/yr	Emission Factor lb/MMcf	Fuel Usage MMcf/yr	
NOx	60.2735	8,006	55.10706	478	254.45
CO	0.5543	8,006	5.3096	478	3.49
VOC	3.19	8,006	27.8	478	19.42
PM	8.4	8,006	8.4	478	35.63
PM10	8.4	8,006	8.4	478	35.63
SO2	0.6108	8,006	0.6108	478	2.59

**PSD Netting Analysis**

Pollutant	Emissions (tons/year)			PSD Major Modification Threshold	PSD Triggered?
	Baseline	After Modification	Net Increase		
NOx	232.62	254.45	21.83	40	No
CO	2.82	3.49	0.67	100	No
VOC	15.83	19.42	3.59	40	No
PM	32.52	35.63	3.11	15	No
PM10	32.52	35.63	3.11	15	No
SO2	2.36	2.59	0.23	40	No

# Orlando Sentinel

Published Daily

State of Florida } S.S.  
COUNTY OF ORANGE

Before the undersigned authority personally appeared DORIS J. HORTON, who on oath says that he/she is the Legal Advertising Representative of Orlando Sentinel, a daily newspaper published at ORLANDO in ORANGE County, Florida; that the attached copy of advertisement, being a PUBLIC NOTICE OF in the matter of #0950203-003-AC in the ORANGE Court, was published in said newspaper in the issue; of 03/30/05

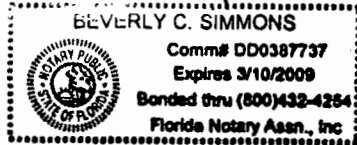
Affiant further says that the said Orlando Sentinel is a newspaper published at ORLANDO in said ORANGE County, Florida, and that the said newspaper has heretofore been continuously published in said ORANGE County, Florida, each Week Day and has been entered as second-class mail matter at the post office in ORLANDO in said ORANGE County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he/she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

*Doris J. Horton*

The foregoing instrument was acknowledged before me this 31st day of MARCH, 20 05, by DORIS J. HORTON, who is personally known to me and who did take an oath.

*Beverly C. Simmons*

(SEAL)



### PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

Florida Department of Environmental Protection  
Draft Air Permit No. 0950203-003-AC  
Northern Star Generation Services - Orlando Cogen Plant  
Orange County, Florida

**Applicant:** The applicant for this project is the Northern Star Generation Services - Orlando Cogen Limited, L.P. The applicant's authorized representative and mailing address is: Mr. Todd Shirley, Plant Manager; Northern Star Generation Services - Orlando Cogen Plant; 8275 Exchange Drive; Orlando, FL 32809.

**Facility Location:** Northern Star Generation Services operates the Orlando Cogen Plant, which is located in Orange County at 8275 Exchange Drive, Orlando, Florida.

**Project:** The plant currently consists of a nominal 129 MW (total) combined cycle gas turbine and ancillary equipment. The plant proposes to upgrade the existing gas turbine from an Alstom Model GT 11N1 to an Alstom Model GT 11NM and to install an evaporative-cooling fogging system. The purpose of the NM upgrade project is to improve the thermal efficiency of the unit. The fogging system will be used on warm days to cool the inlet compressor air for increased power production. Both the NM upgrade and the fogging system are expected to reduce dependence on the existing duct burner system that fires natural gas.

The 129 MW combined cycle gas turbine is considered an electric utility steam generating unit. As such, the applicant predicts that emissions will not significantly increase after completion of the project based on future representative actual emissions. Therefore, the project is not submit to preconstruction review for the Prevention of Significant Deterioration (PSD). The Department agrees and intends to issue a draft permit authorizing the project with the requirements to test and report CO and NOx emissions for a 5-year period following completion of the project. Details of the application and the enclosed "Technical Evaluation and Preliminary Determination".

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

**Project File:** A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m. Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confi-

dential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address or phone number listed above. A copy of the complete project file is also available at the Air Resources Section of the Department's Central District Office at 3319 Maguire Boulevard, Suite 232, Orlando, Florida 32803-3767. The telephone number is 407/894-7555.

**Notice of Intent to Issue Air Permit:** The Permitting Authority gives notice of its intent to issue an permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

**Comments:** The Permitting Authority will accept written comments concerning the proposed Draft Permit for a period of fourteen (14) days from the date of publication of this Public Notice. Written comments must be provided to the Permitting Authority at the above address. Any written comments filed will be made available for public inspection. If written comments received result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice.

**Petitions:** A persons whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. 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 this Public Notice or receipt of a written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within fourteen (14) days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.56 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address and telephone number of the petitioner; the name address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial rights will be affected by the agency deter-

mination; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and, (g) A statement of the relief sought by the petitioner, stating precisely the action of the agency's proposed action; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in disputed and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

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

**Mediation:** Mediation is not available for this proceeding.

COR6112226 3/30/05

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	A. Signature <i>[Signature]</i> <input type="checkbox"/> Agent <input checked="" type="checkbox"/> Addressee
1. Article Addressed to:  Mr. Todd Shirley, Plant Manager Northern Star Generation Services - Orlando Cogen Plant 8275 Exchange Drive Orlando, Florida 32809	B. Received by (Printed Name) _____ C. Date of Delivery <i>7/18</i>
2. Article Number <i>(Transfer from service label)</i> 7000 2870 0000 7028 0375	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No
	3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D. 4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes

PS Form 3811, August 2001 Domestic Return Receipt 102595-02-M-1540

U.S. Postal Service <b>CERTIFIED MAIL RECEIPT</b> <i>(Domestic Mail Only; No Insurance Coverage Provided)</i>											
7000 2870 0000 7028 0375	<b>OFFICIAL USE</b> Mr. Todd Shirley, Plant Manager										
<table border="1"> <tr> <td>Postage</td> <td>\$</td> </tr> <tr> <td>Certified Fee</td> <td></td> </tr> <tr> <td>Return Receipt Fee (Endorsement Required)</td> <td></td> </tr> <tr> <td>Restricted Delivery Fee (Endorsement Required)</td> <td></td> </tr> <tr> <td><b>Total Postage &amp; Fees</b></td> <td><b>\$</b></td> </tr> </table>	Postage	\$	Certified Fee		Return Receipt Fee (Endorsement Required)		Restricted Delivery Fee (Endorsement Required)		<b>Total Postage &amp; Fees</b>	<b>\$</b>	Postmark Here
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Certified Fee											
Return Receipt Fee (Endorsement Required)											
Restricted Delivery Fee (Endorsement Required)											
<b>Total Postage &amp; Fees</b>	<b>\$</b>										
<table border="1"> <tr> <td> <b>Sent To</b>            Mr. Todd Shirley, Plant Manager            Street, Apt. No., or PO Box No.            8275 Exchange Drive            City, State, ZIP+4            Orlando, Florida 32809         </td> </tr> </table>		<b>Sent To</b> Mr. Todd Shirley, Plant Manager Street, Apt. No., or PO Box No. 8275 Exchange Drive City, State, ZIP+4 Orlando, Florida 32809									
<b>Sent To</b> Mr. Todd Shirley, Plant Manager Street, Apt. No., or PO Box No. 8275 Exchange Drive City, State, ZIP+4 Orlando, Florida 32809											
PS Form 3800, May 2000 See Reverse for Instructions											



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<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	<p>A. Signature <input checked="" type="checkbox"/> Agent  <input checked="" type="checkbox"/> Addressee</p> <p>B. Received by (<i>Printed Name</i>) <u>TIM GEORGE</u> C. Date of Delivery</p>
<p>1. Article Addressed to:</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Mr. Todd Shirley, Plant Manager  Northern Star Generation Services -  Orlando Cogen Plant  8275 Exchange Drive  Orlando, Florida 32809</p> </div>	<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes  If YES, enter delivery address below: <input type="checkbox"/> No</p> <p>3. Service Type  <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail  <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise  <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (<i>Extra Fee</i>) <input type="checkbox"/> Yes</p>
<p>2. Article Number  (<i>Transfer from service label</i>)</p>	<p><u>7000 1670 0013 3109 8871</u></p>

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Return Receipt Fee <small>(Endorsement Required)</small>		
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Mr. Todd Shirley, Plant Manager  
Northern Star Generation Services -  
Orlando Cogen Plant  
8275 Exchange Drive  
Orlando, Florida 32809

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