

Florida Department of Environmental Protection

Memorandum

TO: Trina Vielhauer, Chief
Bureau of Air Regulation

FROM: Jeff Koerner, Air Permitting North Program *JK*

DATE: July 5, 2005

SUBJECT: Draft Air Permit No. 0950203-005-AC
Northern Star Generation Services – Orlando Cogen Plant
Request for 4% Increase in Maximum Heat Input Rate after Completing NM Upgrade 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 a 4% increase in the maximum heat input rate for the upgraded NM gas turbine. The unit is installed and operational 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 August 21, 2005. I recommend your approval of the attached Draft Permit for this project.

Attachments

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 Project, Revised for
Increased Heat Input Rate
Orange County, Florida

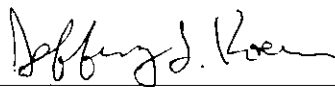
PROJECT DESCRIPTION

The plant currently consists of a nominal 129 MW (total) combined cycle gas turbine and ancillary equipment. The existing gas turbine was recently upgraded from an Alstom Model GT 11N1 to an Alstom Model GT 11NM. Based on initial performance evaluations, the operational benefits are greater than originally anticipated. As a result, the applicant requests an approximately 4% increase in the maximum heat input rate to the upgraded gas turbine. The modified unit will continue to meet all other fuel use restrictions, permitted emission rates, and other operational requirements in the existing permits. The additional heat input to the gas turbine will likely result in less firing of the duct burner.

The applicant requests an increase in the maximum heat input rate to the modified gas turbine from 856.9 to 890 MMBtu per hour (ISO), which is an additional 33.1 MMBtu/hour or approximately a 4% increase. Based on 8760 hours of operation per year, the additional heat input is equivalent to 289,956 MMBtu per year or 296 MMscf of gas per year. At the current maximum permitted emissions rates, potential CO and NOx emissions increases are estimated to be 3.6 and 9.4 tons per year, respectively. Past actual operation has approached a 90% annual capacity factor. Therefore, it is unlikely that the project would result in PSD significant emissions increases.

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".

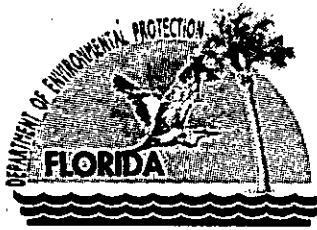
I HEREBY CERTIFY that the air pollution control engineering features described in the above referenced application and subject to the proposed permit conditions provide reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 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

7-5-05

(Date)



Jeb Bush
Governor

Department of Environmental Protection

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

Colleen M. Castille
Secretary

July 6, 2005

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

Re: Air Construction Permit No. 0950203-005-AC
Orlando Cogen Limited, L.P.
NM Upgrade Plus Fogger Project, Revised for Increased Heat Input Rate

Dear Mr. Shirley:

On June 9, 2005, the Department received your request to increase the maximum heat input rate to the modified gas turbine from 856.9 to 890 MMBtu per hour (ISO). The unit will continue to meet all other fuel use restrictions, permitted emission rates, and operational requirements in the existing permits. The additional heat input to the gas turbine will likely result in less firing of the duct burner. 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.

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> 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. 	<p>A. Signature  <input type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name) _____</p> <p>C. Date of Delivery <u>7-18-01</u></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? (Extra Fee) <input type="checkbox"/> Yes</p>
<p>2. Article Number (Transfer from service label) <u>7001 0320 0001 3692 2558</u></p>	
<p>PS Form 3811, August 2001 Domestic Return Receipt 102595-02-M-1540</p>	

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

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

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. 0950203-005-AC
Facility ID No. 0950203
Orlando Cogen Plant
NM Upgrade Project, Revised for
Increased Heat Input Rate
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 existing gas turbine was recently upgraded from an Alstom Model GT 11N1 to an Alstom Model GT 11NM. Based on initial performance evaluations, the operational benefits are greater than originally anticipated. As a result, the applicant requests an approximately 4% increase in the maximum heat input rate to the upgraded gas turbine. The modified unit will continue to meet all other fuel use restrictions, permitted emission rates, and other operational requirements in the existing permits. The additional heat input to the gas turbine will likely result in less firing of the duct burner.

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

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

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 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.

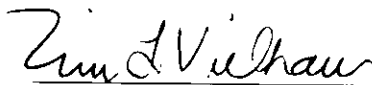
A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; 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.

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

Executed in Tallahassee, Florida.



Trina Vielhauer, Chief
Bureau of Air Regulation

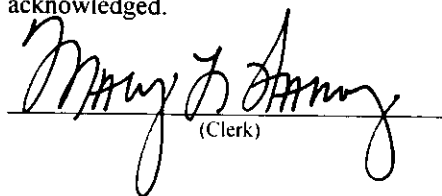
CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this "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 7/8/05 to the persons listed below.

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

7/8/05
(Date)

**TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION**

PROJECT

Draft Air Construction Permit No. 0950203-005-AC
Gas Turbine Upgrade Project
(Revision of Permit No. 0950203-003-AC to Increase the Maximum Heat Input Rate)

COUNTY

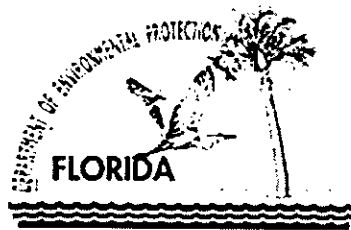
Orange County

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



July 5, 2005

{Filename: 0950203-005-AC - TEPD}

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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 a 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 and install an inlet air fogging system. The purpose of the project was to improve the thermal efficiency of the gas turbine and reliance on duct firing, which is a less efficient method of producing power.

On April 15, 2005, the Department issued Permit No. 0950203-003-AC to authorize this work. Construction on the NM upgrade began on April 22, 2005 and was completed on May 20, 2005. The inlet air fogging system may or may not be installed at a later date. The NM upgrade resulted in improved thermal efficiency as well as increased output capacity. Based on initial performance evaluations, the operational benefits are greater than originally anticipated. On June 9, 2005, the Department received a request from the applicant to increase the maximum heat input rate to the upgraded gas turbine by about 4% from 856.9 to 890 MMBtu per hour (ISO). The applicant maintains that the unit will continue to meet all other fuel use restrictions, permitted emission rates, and other operational requirements in the existing permits. The additional heat input to the gas turbine will likely result in less firing of the 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. The applicant believes that the approximately 4% increase in the maximum heat input rate will actually reduce the firing of natural gas in the duct burner, which is a less efficient method of producing power. As such, the applicant predicts that the proposed upgrade project will not result in PSD significant emissions increases based on future representative actual emissions. To support this prediction, the applicant provided the following summary table comparing projected "future representative actual emissions" with actual emissions from 2002-2003.

Table 3A. Applicant's Revised 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	3.57	30.25	100	No
NOx	232.62	262.87	30.25	40	No
PM	32.52	36.81	4.29	25	No
PM10	32.52	36.81	4.29	15	No
SO2	2.36	2.68	0.31	40	No
VOC	15.83	19.86	4.03	40	No

Notes:

"TPY means tons per year. "SER" means significant emissions rate.

The following methods were used to develop emission factors for the above estimates: 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. 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. Based on the predicted emissions increases, the applicant does not believe that the project will result in any PSD-significant emissions increases.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

4. DEPARTMENT'S REVIEW

The applicant requests an increase in the maximum permitted heat input rate from 856.9 to 890 MMBtu per hour (ISO), which is an additional 33.1 MMBtu per hour or approximately a 4% increase. Using the maximum emission rates identified in the current permits, the potential emissions were estimated from firing 33.1 MMBtu per hour of natural gas for 8760 hours per year. The results provided in Attachment A show that the 4% increase in the maximum heat input rate after the NM gas turbine upgrade is unlikely to result in a PSD-significant emissions increase.

5. DRAFT PERMIT CONDITIONS

The Department considers the applicant's request to be a modification of Permit No. 0950203-003-AC, which authorized the NM upgrade. Therefore, new Permit No. 0950203-005-AC will include the conditions of the previous permit and specify the new maximum permitted heat input rate. Stack testing to determine CO emissions must be conducted within 90% of the new maximum heat input rate. As required by the previous permit, actual CO and NOx emissions must be reported for a 5-year period after completion to verify that the project did not result in a PSD significant emissions increase. The gas turbine shall remain subject to all other valid terms and conditions in the original PSD air construction and Title V air operation permit.

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.

Orlando CoGen Limited, L.P.
GT 11NM Upgrade Project - Revision for 4% Increase in Heat Input Rate
ATTACHMENT A

The following table provides an estimate of potential emissions increases that may result from increasing the maximum permitted heat input rate by approximately 4%.

Pollutant	Estimate of Potential Emissions Increase			
	lb/hour	lb/MMBtu	MMBtu/Year	TPY
CO	22.3	0.0251	289,956	3.63
NOx	57.4	0.0645	289,956	9.35
PM	9.0	0.0101	289,956	1.47
SO2	5.2	0.0058	289,956	0.85
VOC	3.0	0.0034	289,956	0.49

Except for SO₂ emissions, the above emission factors are based on rates identified in the permit. SO₂ emissions are estimated as shown below.

- 890 MMBtu/hour, requested maximum heat input rate (ISO)
- 856.9 MMBtu/hour, current permitted maximum heat input rate (ISO)
- 33.1 MMBtu/hour, net increase in the maximum heat input rate
- 289,956 MMBtu/year, maximum based on net increase in maximum heat input rate and 8760 hr/yr
- 296 MMscf/year, maximum based on maximum annual heat input rate and assumed LHV of gas

SO₂ Calculations

- 0.02 grains of S per scf of gas, assumed maximum sulfur content of pipeline gas
- 980 Btu per scf of gas, assumed LHV
- 0.0058 lb SO₂ per MMBtu
- 5.2 lb SO₂/hour

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

Florida Department of Environmental Protection
Draft Air Permit No. 0950203-005-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 existing gas turbine was recently upgraded from an Alstom Model GT 11N1 to an Alstom Model GT 11NM. Based on initial performance evaluations, the operational benefits are greater than originally anticipated. As a result, the applicant requests an approximately 4% increase in the maximum heat input rate to the upgraded gas turbine. The modified unit will continue to meet all other fuel use restrictions, permitted emission rates, and other operational requirements in the existing permits. The additional heat input to the gas turbine will likely result in less firing of the duct burner.

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 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.

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.

DRAFT PERMIT

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. 0950203-005-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. This is a revision of Permit No. 0950203-003-AC to increase the maximum permitted heat input rate. The unit is in operation 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)

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 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. This minor source air construction permit replaces Permit No. 0950203-003-AC and supplements original Permit No. PSD-FL-184. Unless otherwise specified, the gas turbine remains subject the applicable terms and conditions of original Permit No. PSD-FL-184 issued in 1992, as modified and amended.

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: Unless otherwise specified, 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. Except as specified below, 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.]

REVISIONS TO PERMIT NO. PSD-FL-184

5. Revised Conditions: The following revised conditions replace the original conditions in Permit No. PSD-FL-184. The original numbering is preserved for tracking purposes. Deletions are shown as ~~strike throughs~~ and additions are shown with double underlines.
 3. The permitted materials and utilization rates for the combined cycle gas turbine shall not exceed the values as follows:
 - Maximum heat input rate to the CT shall not exceed ~~856.9~~ 890 MMBtu/hr at ISO conditions.
 - Maximum heat input rate to the HRSG-DB shall not exceed 122.0 MMBtu/hr; 450,000 MMBtu/yr.
 4. The maximum allowable emissions from this facility shall not exceed the emission rates listed in Table 1.

Table 1

Pollutant	Source	Allowable Emission Standard/Limitation
NOx	CT	15 ppmvd @ 15% O ₂ (57.4 lb/hr; 251.4 TPY)
	DB	0.1 lb/MMBtu
	CT/DB	24-hr rolling average
CO	CT	10 ppmvd (22.3 lbs/hr; 92.1 TPY)
	DB	0.1 lb/MMBtu (12.2 lbs/hr; 22.5 TPY)
PM/PM ₁₀	CT	0.01 lb/MMBtu (9.0 lbs/hr; 39.4 TPY)
	DB	0.01 lb/MMBtu (1.2 lbs/hr; 2.2 TPY)

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

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

VOC	CT	3.0 lbs/hr; 13.0 TPY
	DB	3.7 lbs/hr; 6.8 TPY
VE	CT/DB	≤ 10% opacity

NOTE:

1. CT: combustion turbine
DB: duct burner
2. Natural gas usage only in the CT and DB.
3. Hours of operation:
 - a. CT: 8760 hrs/yr
 - b. DB: 3688 hrs/yr (at a maximum rate of 122.0×10^6 Btu/hr)
4. Maximum heat input:
 - a. CT: ~~856.9~~ 890 $\times 10^6$ Btu/hr
 - b. DB: 3688 hrs/yr (at a maximum rate of 122.0×10^6 Btu/hr)
5. DB operation planned when ambient temperature is greater than 59° F.

The gas turbine remains subject to all other applicable conditions of Permit No. PSD-FL-184.

[Application No. 0950203-005-AC]

TESTING REQUIREMENTS

6. **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. An initial test shall be conducted no later than 60 days after issuance of this permit. 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 CO test run, nitrogen oxides (NOx) emissions data collected from the installed CEMS shall also be reported. Tests shall be conducted within 90% of the new maximum heat input rate given actual ambient conditions. A satisfactory compliance test conducted after the NM upgrade, but before issuance of this final permit may be used to satisfy the initial test requirement. 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

7. **CO/NOx Emissions Reports:** For a period of five years following completion of the gas turbine upgrade (including heat input increase), 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 1st 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 any additional 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

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

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

- 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

{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 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.]
4. **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.]
5. **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.]
6. **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.]
7. **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

8. **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.]
9. **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.]

SECTION 4. APPENDIX C
COMMON CONDITIONS

10. 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.]
11. 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.]
12. 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.]
13. 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.
14. 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.]
15. 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.]
16. 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 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.

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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

17. 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.]
18. 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 Project, Revised for
Increased Heat Input Rate
Orange County, Florida

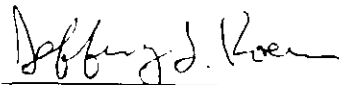
PROJECT DESCRIPTION

The plant currently consists of a nominal 129 MW (total) combined cycle gas turbine and ancillary equipment. The existing gas turbine was recently upgraded from an Alstom Model GT 11N1 to an Alstom Model GT 11NM. Based on initial performance evaluations, the operational benefits are greater than originally anticipated. As a result, the applicant requests an approximately 4% increase in the maximum heat input rate to the upgraded gas turbine. The modified unit will continue to meet all other fuel use restrictions, permitted emission rates, and other operational requirements in the existing permits. The additional heat input to the gas turbine will likely result in less firing of the duct burner.

The applicant requests an increase in the maximum heat input rate to the modified gas turbine from 856.9 to 890 MMBtu per hour (ISO), which is an additional 33.1 MMBtu/hour or approximately a 4% increase. Based on 8760 hours of operation per year, the additional heat input is equivalent to 289.956 MMBtu per year or 296 MMscf of gas per year. At the current maximum permitted emissions rates, potential CO and NOx emissions increases are estimated to be 3.6 and 9.4 tons per year, respectively. Past actual operation has approached a 90% annual capacity factor. Therefore, it is unlikely that the project would result in PSD significant emissions increases.

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".

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

7-5-05

(Date)