MEMORANDUM

To: Michael G. Cooke

From: Trina L. Vielhauer

Subject: **Orange Cogeneration Facility**

Date: December 13, 2005

- Attached is Final Air Construction Permit No. **1050231-008-AC** for the subject facility.
- This permit authorizes changes to 1) incorporate alternate startup and shutdown emissions limits for NOx utilizing a simple 4-hour moving average, 2) revise the NOx emission limit averaging time, 3) redefine excess emissions, and 4) recognize the operational state of "combustor tuning session" for the emission units and the corresponding definition of allowed excess emissions. The permit also establishes these changes as applicable Title V Air Operation Permit specific conditions.
- The Public Notice of Intent to Issue was published in the Polk County Democrat on November 17, 2005.
- No comments were received by the Department from the public, U.S.EPA, or the applicant.
- I recommend your signature.

Department of Environmental Protection

Jeb Bush
Governor

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

Colleen M. Castille
Secretary

NOTICE OF FINAL PERMIT

In the Matter of an
Application for Permit by:

Mr. David Kellermeyer
Vice President, EH&S
Northern Star Generation Services Company LLC
2929 Allen Parkway
Suite 2200
Houston, TX 77019

Orange Cogeneration Facility
Project 1050231-008-AC

Enclosed is Final Air Construction Permit No. 1050231-008-AC. This permit authorizes changes to 1) incorporate alternate startup and shutdown emissions limits for NOx utilizing a simple 4-hour moving average, 2) revise the NOx emission limit averaging time, 3) redefine excess emissions, and 4) recognize the operational state of "combustor tuning session" for the emission units and the corresponding definition of allowed excess emissions. The permit also establishes these changes as applicable Title V Air Operation Permit specific conditions.

An electronic version of this document has been posted on the Division of Air Resource Management's world wide web site for the United States Environmental Protection Agency (U.S. EPA) Region 4 office's review. The web site address is:

http://www.dep.state.fl.us/air/eproducts/ards/default.asp

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 days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.

Trina L. Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this permit was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 12/23/05 to the person(s) listed:

David Kellermeyer*
U.S. EPA, Region 4
Scott Osbourn, P.E., Golder Associates, Inc.
Mara Nasca, Southwest District 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.

Mary L Stamp (Clerk) 12/23/05 (Date)

FINAL DETERMINATION

Northern Star Generation Services Company LLC
Orange Cogeneration Facility

Air Construction Permit No. **1050231-008-AC**
Emissions Monitoring and Compliance

The Department distributed a public notice package on November 10, 2005, that included an Intent to Issue Air Construction Permit No. 1050231-008-AC to the Northern Star Generation Services Company LLC for the Orange Cogeneration Facility, located at 1901 Clear Springs Mine Road, Bartow, Polk County

This permit authorizes changes to 1) incorporate alternate startup and shutdown emissions limits for NOx utilizing a simple 4-hour moving average, 2) revise the NOx emission limit averaging time, 3) redefine excess emissions, and 4) recognize the operational state of "combustor tuning session" for the emission units and the corresponding definition of allowed excess emissions. The permit also establishes these changes as applicable Title V Air Operation Permit specific conditions.

The Public Notice of Intent to Issue was published in the Polk County Democrat on November 17, 2005.

COMMENTS

- No comments were received by the Department from the public, U.S.EPA, or the applicant.

CONCLUSION

The final action of the Department is to issue the permit with no changes.

Department of Environmental Protection

Jeb Bush
Governor

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

Colleen M. Castille
Secretary

FINAL AIR CONSTRUCTION PERMIT NO. 1050231-008-AC

PERMITTEE

Northern Star Generation Services Company LLC	File/Permit No.	**1050231-008-AC**
Orange Cogeneration Facility	Facility ID:	1050231
2929 Allen Parkway	Project:	Emissions Monitoring and Compliance
Suite 2200		
Houston, TX 77019		
	SIC No.	4911
Authorized Representative:	Expires:	December 31, 2006
Mr. David Kellermeyer, General Manager	County .	Polk

PROJECT AND LOCATION

This is an Air Construction Permit to implement changes to 1) incorporate alternate startup and shutdown emissions limits for NOx utilizing a simple 4-hour moving average, 2) revise the NOx emission limit averaging time, 3) redefine excess emissions, and 4) recognize the operational state of "combustor tuning session" for the emission units and the corresponding definition of allowed excess emissions. The air construction permit will also establish these changes as applicable Title V Operation Permit conditions.

The facility is located at 1901 Clear Springs Mine Road, Bartow, Polk County. UTM Coordinates are: Zone 17, 418.7 km East, and 3083.0 km North; Latitude: 27° 52' 15" North, and Longitude: 81° 49' 31" West.

STATEMENT OF BASIS

This Air Construction Permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The above named permittee is authorized to implement the changes in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

THE ATTACHED APPENDIX IS MADE A PART OF THIS PERMIT:

Appendix GC Construction Permit General Conditions

Michael G. Cooke, Director
Division of Air Resource Management

FACILITY DESCRIPTION

This facility consists of two combustion turbines (CT) that each exhaust through a heat recovery steam generator (HRSG) and associated stack. The CTs are natural gas and biogas fired. The facility also includes an auxiliary boiler fired with natural gas and biogas, with a separate stack. Neither HRSG is auxiliary fuel fired, or equipped with duct burners.

REGULATORY CLASSIFICATION

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

There are no physical changes or increases of pollutant emissions authorized by this permit.

PERMIT SCHEDULE

- October 14, 2005 Application deemed complete.
- October 14, 2005 Supplemental information received.
- October 7, 2005 Application deemed incomplete.
- September 19, 2005 Application received.

RELEVANT DOCUMENTS

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

- Title V Air Operation Permit Renewal No. 1050231-006-AV.
- Air Construction Permit No. 1050231-007-AC (PSD-FL-206(D))
- Application received on September 19, 2005.
- The Department's Technical Evaluation and Preliminary Determination, issued concurrently with the draft air construction permit.

PROJECT DESCRIPTION

This permit implements the Applicant requests for: 1) incorporation of alternate startup and shutdown emissions limits utilizing a simple 4-hour moving average, 2) revisions to the NOx emission limit averaging time, 3) definition of excess emissions, and 4) recognition of the operational state of "combustor tuning session" for the emission units and the corresponding definition of allowed excess emissions.

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

APPLICABLE STANDARDS AND REGULATIONS

A.2. Unless otherwise indicated in this permit, the construction and operation of the subject emission unit(s) shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of Chapter 403, F.S., and Florida Administrative Code Chapters 62-4, 62-103, 62-204, 62-210, 62-212, 62-213, 62-214, 62-296, and 62-297.

A.3. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting requirements or regulations. [Rule 62-210.300, F.A.C.]

A.4. The facility is subject to all of the requirements specified in Title V Air Operation Permit Renewal No. 1050231-006-AV.

EMISSION LIMITS AND STANDARDS

A.5. Emission Limits.

(a) The maximum allowable emissions from each unit shall not exceed the emission limitations listed below.

(b) The maximum allowable nitrogen oxide emissions resulting from a startup or shutdown of either CT shall not exceed 22.1 lbs/hr, based on a simple 4-hour moving average commencing with the beginning of a start up or ending at the conclusion of a shut down of the unit. The simple 4-hour moving average shall be based on all available data excluding calibration data and periods of emissions due to malfunction during the start up or shut down period.

	Emission Limits			
POLLUTANT	**Natural Gas or Biogas**	**lb/hr**	**Tons/Year**	**BASIS**
NOx	15 ppmvd at 15% oxygen ***	22.1***	97.0	BACT
CO	30 ppmvd	27.8	127.0	BACT
PM/PM_{10}*		5**	21.9**	BACT
VOC	10 ppmvd	4**	17.4**	BACT

*All PM is assumed to be PM_{10}.
**For informational purposes only.
*** Based on a simple 4-hour moving average per Specific Condition **A.8.**
{Note: The limitations of Specific Condition **A.5.** are more stringent than the NSPS nitrogen oxides limitation and thus ensure compliance with 40 CFR 60.332 and 60.334.}
[AC53-233851B (PSD-FL-206B); 1050231-002-AC; and 1050231-007-AC (PSD-FL-206(D), Table 1.]

EXCESS EMISSIONS

A.6. Excess emissions resulting from a combustor tuning session shall be permitted provided the tuning session is performed in accordance with the manufacturer's specifications and in no case shall exceed 72 hours in any calendar year. A "tuning session" would occur after a combustor change-out, a repair to a combustor, or as required to maintain compliance. Prior to performing any tuning session, the permittee shall provide the Compliance Authority with an advance notice that details the activity and proposed tuning schedule. The notice may be made by telephone, facsimile transmittal, or electronic mail.
[Rule 62-210.700(1) & (5), F.A.C.; and Applicant request.]

MONITORING OF OPERATIONS

A.7. **Alternate Monitoring Plan: Use of NO_X CEMS For Continuous Compliance**. Pursuant to 40 CFR 64.2(b)(1)(vi), the applicant has elected to use the existing certified Acid Rain NO_X continuous emissions monitors for continuous compliance in order to be exempted from the Compliance Assurance Monitoring (CAM) requirements contained in 40 CFR 64. The following alternate monitoring may be used to demonstrate compliance with the ppmvd and the lbs/hr standards for NOx.

(a) The NO_X CEM data shall be used in lieu of the monitoring system for water-to-fuel ratio and the reporting of excess emissions in accordance with 40 CFR 60.334(b), Subpart GG (CFR dated 2004). The calibration of the water-to-fuel ratio-monitoring device required in 40 CFR

60.335(c)(2) (CFR dated 2004) will be replaced by the 40 CFR 75 certification tests of the NO_X CEMS.

(b) When requested by the Department, the CEMS emission rates for NOx on these units shall be corrected to ISO conditions to demonstrate compliance with the NOx standards established in 40 CFR 60.332. With regard to NSPS Subpart GG, the NOx CEMS data shall also be used to report excess emissions in accordance with 40 CFR 60.334(j)(1)(iii) and 40 CFR 60.7(c).
{Permitting Note: The purpose of this permit condition is to authorize the use of the existing NOx CEMS to demonstrate compliance with the applicable NOx standards. Pursuant to 40 CFR 64.2(b)(1)(vi), this will allow each unit to avoid a Compliance Assurance Monitoring (CAM) Plan for NOx emissions.}

Alternate Standards and NO_X CEMS Data Exclusion: The following permit conditions establish alternate standards or allow the exclusion of monitoring data for specifically defined periods of startup, shutdown, and documented malfunction of a gas turbine. These conditions apply only if operators employ the best operational practices to minimize the amount and duration of emissions during such episodes. For the following identified operational periods, 1-hour NO_X emissions rate values may be excluded from the 4-hour moving compliance averages in accordance with the corresponding requirements.

(1) Startup, Shutdown, and Malfunction: CEMS data of startup/shutdown or malfunction shall not be used to calculate emission averages for compliance pursuant to 40 CFR 60.8(c). Note: A fuel-switch is not considered "startup".

NO_X CEMS Requirements: For each gas turbine, the permittee shall keep calibrated, maintain, and operate continuous emissions monitors (CEMS) to measure and record emissions of nitrogen oxides (NO_X) and oxygen (O_2) in a manner sufficient to demonstrate compliance with the standards of this permit. A monitor for carbon dioxide (CO_2) may be used in place of the oxygen monitor, but the system shall comply with 40 CFR 60.334(b) (CFR dated 2004) for correcting the emissions to 15% oxygen.

(a) **Performance Specifications**. Each monitor shall be installed in a location that will provide emissions measurements representative of actual stack emissions. Each CEMS shall comply with the corresponding performance specifications that identify location, installation, design, performance, and reporting requirements.

Each NO_X monitor shall be certified pursuant to 40 CFR Part 75 and shall be operated and maintained in accordance with the applicable requirements of 40 CFR Part 75, Subparts B and C. Record keeping and reporting shall be conducted pursuant to 40 CFR Part 75, Subparts F and G. The RATA tests required for the NO_X monitor shall be performed using EPA Method 7E or 20 as defined in Appendix A of 40 CFR 60. .

(b) **Data Collection**. Each CEMS shall be designed and operated to sample, analyze, and record emissions data evenly spaced over a 1-hour period during all periods of operation. Each 1-hour average shall be computed using at least one data point in each fifteen-minute quadrant of the 1-hour block during which the unit combusted fuel. If the NO_X CEMS measures concentration on a wet basis, the permittee shall use DEP approved methods for correction of measured emissions to a dry basis (0% moisture). The O_2 (or CO_2) CEMS shall express the 1-hour emission rate values in terms of "percent oxygen by volume". The NO_X CEMS shall express the 1-hour emission averages in terms of "ppmvd corrected to 15% oxygen" for compliance with the BACT standard and, when requested by the Department, ISO corrected at 15% oxygen for the NSPS standard.

(c) **Compliance Averages**. Compliance with the simple 4-hour moving average NO_X emissions standards shall be based on data collected by each required CEMS. For purposes of determining compliance with the emission standards of this permit, missing data shall not be substituted. If monitoring data is authorized for exclusion (due to startup, shutdown, malfunction, or tuning), the simple 4-hour moving average shall be the

average of the remaining valid 1-hour emission averages collected during actual operation. A 1-hour emissions average that includes any amount of oil firing shall only be included in the compliance average for oil firing. The CEMS used shall comply with 40 CFR 60.334(B)(2) (CFR dated 2004) which requires a minimum of 1 data point for each quadrant of a full unit operating hour or at least 2 data points (one in each of the two quadrants) when required quality assurance or maintenance activities are performed on the system.

(d) **Data Exclusion.** Except for continuous monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments, each CEMS shall record emissions data at all times including episodes of startup, shutdown, and malfunction. Emissions data recorded during periods of startup, shutdown, or malfunction may only be excluded from the compliance averages in accordance with the requirements previously specified in this permit. To the extent practicable, the permittee shall minimize the duration of data excluded for startup, shutdown and malfunctions, unless specifically authorized in writing by the department's district office for longer periods. Data recorded during startup, shutdown or malfunction shall not be excluded if the episode was caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure, which may reasonably be prevented. Best operational practices shall be used to minimize hourly emissions that occur during startup, shutdown and malfunction. Emissions of any quantity or duration that occur entirely or in part from poor maintenance, poor operation, or any other equipment or process failure, which may reasonably be prevented, shall be prohibited. Excluded emissions data shall be summarized in the required quarterly report.

(e) **Monitor Availability**. Monitor availability shall not be less than 95% in any calendar quarter. In the event 95% availability is not achieved, the permittee shall provide the Department with a report identifying the problems in achieving 95% availability and a plan of corrective actions that will be taken to achieve 95% availability. The permittee shall implement the reported corrective actions within the next calendar quarter. Failure to take corrective actions or continued failure to achieve the minimum monitor availability shall be violations of this permit.

[Rules 62-204.800, 62-210.700, 62-213.440, 62-4.070(3), 62-4.130, 62-4.160(8), F.A.C.; 40 CFR 60.7; AC53-233851B (PSD-FL-206B); and 1050231-007-AC (PSD-FL-206(D)), Specific Condition 18; and Applicant request.]

A.8. Excess Emissions by CEMS. The CEMS for NOx shall be used to determine periods of excess emissions. Excess emissions are defined for this emissions unit as any simple 4-hour moving average period during which the average emissions exceed the emission limits of Specific Condition **A.5.** of this permit. Periods of malfunction and other excess emission events shall be monitored, recorded and reported with excess emissions following the format and requirements of 40 CFR 60.7.

Excess emissions resulting from a combustor tuning session shall be permitted provided the tuning session is performed in accordance with the manufacturer's specifications and in no case shall exceed 72 hours in any calendar year. A "tuning session" would occur after a combustor change-out, a repair to a combustor, or as required to maintain compliance. Prior to performing any tuning session, the permittee shall provide the Compliance Authority with an advance notice that details the activity and proposed tuning schedule. The notice may be made by telephone, facsimile transmittal, or electronic mail.
[Rule 62-210.700(1) & (5), F.A.C.; and Applicant request.]

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. David Kellermeyer
Vice President, EH&S
Northern Star Generation Services
Company LLC
2929 Allen Parkway, Suite 2200
Houston, TX 77019

A. Received by (Printed Name) Dean Taylor
C. Date of Delivery 12-27-05

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

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

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7000 1670 0013 3109 9984

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