

TITLE V APPLICATION REVIEW

Facility Name: **Cherokee LNG Plant**

City: Ballground

County: Cherokee

AIRS #: 04-13-157-00036

Application #: TV- 9165

Date Application Received: October 21, 1996

Date Application Deemed

Administratively Complete: February 25, 1997

Date of Draft Permit:

Permit No: 4924-057-0036-V-01-1

Program	Review Engineers	Review Managers
SSPP/ASU	Michael Roy	John Yntema
SSCP/ASU	Stacey Wix	James Eason
ISMP	Bradley Belflower	Mike Fogle
TOXICS	Not Applicable	Not Applicable

Introduction

This narrative is being provided to assist the reader in understanding the content of the attached draft Title V operating permit. Complex issues and unusual items are explained in simpler terms and/or greater detail than is sometimes possible in the actual permit. This permit is being proposed pursuant to: (1) Section 391-3-1-.03(10) of the Georgia Rules for Air Quality Control, (2) Part 70 of Chapter I of Title 40 of the Code of Federal Regulations, and (3) Title V of the Clean Air Act Amendments of 1990. The primary purpose of this permit is to consolidate and identify existing state and federal air requirements applicable to Cherokee LNG Plant and to provide practical methods for determining compliance with these requirements. The following narrative is designed to accompany the draft permit and is presented in the same general order as the permit. It initially describes the facility receiving the permit, then the applicable requirements and their significance, and finally the methods for determining compliance with those applicable requirements. This narrative is intended only as an adjunct for the reviewer and has no legal standing. Any revisions made to the permit in response to comments received during the public participation process will be described in an addendum to this narrative.

I. Facility Description

A. Facility Identification

1. Facility Name:

Cherokee LNG Plant

2. Parent/Holding Company Name

Atlanta Gas Light Company

3. Previous and/or Other Name(s)

No previous names have been identified.

4. Facility Location

14383 East Cherokee Drive
Ballground, Georgia 30107

5. Attainment or Non-attainment Area Location

The facility is located in Northwest Georgia and is in a non-attainment area.

6. Class I Area Impacts

This facility is located within 100 km of the Cohutta Class I area.

B. Site Determination

There are no other facilities which could possibly be contiguous or adjacent and under common control.

C. Existing Permits

Table 1: List of Current Permits, as Amended

Permit Number and/or Purpose of Issuance	Date of Issuance and Date of Amendments (if any)	Comments	
		Yes	No
4922-028-10902	January 10, 1992	X	
4922-028-10902	November 15, 1994	X	
4922-028-10902	May 22, 1996	X	
4922-028-10902	October 30, 1996	X	

Table 2: Comments on Specific Permits

Permit Number	Comments
4922-028-10902	SIP permit for the operation of a natural gas liquification facility.
4922-028-10902	November 15, 1994: Amendment to incorporate the requirements of Georgia Air Quality Control Rule 391-3-1-.02(2)(yy) into the existing permit.
4922-028-10902	May 22, 1996: Amendment for the construction and operation of RACT systems for controlling NOx emissions from the affected fuel burning equipment (Source Codes G1A, G1B, G1C, G1D, C1 and C2).
4922-028-10902	October 30, 1996: Amendment for construction and operation of three LoNOx natural gas fired boilers (Source Codes VB7, VB8, and VB9).

D. Process Description

1. SIC Code(s) - 4924
2. Description of Product(s)

This facility is a Natural Gas Compressor Station. It does not make a "product."

3. Overall Facility Process Description

Atlanta Gas Light Company operates several liquefied natural gas stations in Georgia. These liquefied natural gas stations operate numerous pieces of fuel-burning equipment fired exclusively by natural gas. The purpose of these plants is for the liquefaction and storage of natural gas during the spring, summer and fall months followed by vaporization and distribution of the stored gas during the peak demand periods in the winter.

4. Overall Process Flow Diagram

See Title V Application.

E. Regulatory Status

1. PSD/NSR

This facility is currently classified as a major source because, according to PSD regulations, it has potential emissions of NOx greater than 250 tons per year.

2. Title V Major Source Status by Pollutant

Table 3: Title V Major Source Status

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the Pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	yes			X
PM ₁₀	yes			X
SO ₂	yes			X
VOC	yes			X
NO _x	yes	X		
CO	yes			X
TRS	yes			X
H ₂ S	yes			X
Individual HAP	n/a			
Total HAPs	yes			X

3. MACT Standards

Not Applicable

4. Program Applicability

Program Code	Applicable (Yes/No)
Program Code 6 - PSD	no
Program Code 8 - Part 61 NESHAP	no
Program Code 9 - NSPS	yes
Program Code M - Part 63 NESHAP	no
Program Code V - Title V	yes

Regulatory Analysis

II. Facility Wide Requirements

A. Emission and Operating Caps:

Not Applicable

B. Applicable Rules and Regulations:

Not Applicable

C. Compliance Status:

See Section VII.F.

D. Operational Flexibility:

See Section VII.F.

E. Permit Conditions:

Not Applicable

III. Regulated Equipment Requirements

A. Brief Process Description

As previously stated in Section I.D.3. of the narrative, Atlanta Gas Light Company operates several liquefied natural gas stations in Georgia. These liquefied natural gas stations each employ numerous pieces of fuel-burning equipment fired exclusively by natural gas. The purpose of these stations is for the liquefaction and storage of natural gas during the spring, summer and fall months followed by vaporization and distribution of the stored gas during the peak demand periods in the winter.

B. Equipment List for the Process

Emission Units		Specific Limitations/Requirements		Air Pollution Control Devices	
ID No.	Description	Applicable Requirements / Standards	Corresponding Permit Conditions	ID No.	Description
RH1	Regeneration Heater No. 1	391-3-1-.02(2)(b)1 391-3-1-.02(2)(g)2 391-3-1-.02(2)(d)2	3.2.1, 3.2.2, 3.2.3, 3.4.1, 3.4.2, 3.4.3, 5.2.1, 5.2.3	None	None
VB1	Vaporizer Boiler No. 1	391-3-1-.02(2)(b)1 391-3-1-.02(2)(g)2 391-3-1-.02(2)(d)2	3.2.1, 3.2.2, 3.2.3, 3.4.1, 3.4.2, 3.4.3, 5.2.1, 5.2.3	None	None

TITLE V APPLICATION REVIEW

Emission Units		Specific Limitations/Requirements		Air Pollution Control Devices	
ID No.	Description	Applicable Requirements / Standards	Corresponding Permit Conditions	ID No.	Description
VB2	Vaporizer Boiler No. 2	391-3-1-.02(2)(b)1 391-3-1-.02(2)(g)2 391-3-1-.02(2)(d)2	3.2.1, 3.2.2, 3.2.3, 3.4.1, 3.4.2, 3.4.3, 5.2.1, 5.2.3	None	None
VB3	Vaporizer Boiler No. 3	391-3-1-.02(2)(b)1 391-3-1-.02(2)(g)2 391-3-1-.02(2)(d)2	3.2.1, 3.2.2, 3.2.3, 3.4.1, 3.4.2, 3.4.3, 5.2.1, 5.2.3	None	None
VB4	Vaporizer Boiler No. 4	391-3-1-.02(2)(b)1 391-3-1-.02(2)(g)2 391-3-1-.02(2)(d)2	3.2.1, 3.2.2, 3.2.3, 3.4.1, 3.4.2, 3.4.3, 5.2.1, 5.2.3	None	None
VB5	Vaporizer Boiler No. 5	391-3-1-.02(2)(b)1 391-3-1-.02(2)(g)2 391-3-1-.02(2)(d)2	3.2.1, 3.2.2, 3.2.3, 3.4.1, 3.4.2, 3.4.3, 5.2.1, 5.2.3	None	None
VB6	Vaporizer Boiler No. 6	391-3-1-.02(2)(b)1 391-3-1-.02(2)(g)2 391-3-1-.02(2)(d)2	3.2.1, 3.2.2, 3.2.3, 3.4.1, 3.4.2, 3.4.3, 5.2.1, 5.2.3	None	None
VB7	Vaporizer Boiler No. 7	391-3-1-.02(2)(b)1 391-3-1-.02(2)(g)2 391-3-1-.02(2)(d)2 40 CFR 60 Subpart Dc	3.2.1, 3.2.2, 3.2.3, 3.3.3, 3.3.4, 3.4.1, 3.4.2, 3.4.3, 5.2.1, 5.2.3	None	Lo NOx Burners
VB8	Vaporizer Boiler No. 8	391-3-1-.02(2)(b)1 391-3-1-.02(2)(g)2 391-3-1-.02(2)(d)2 40 CFR 60 Subpart Dc	3.2.1, 3.2.2, 3.2.3, 3.3.3, 3.3.4, 3.4.1, 3.4.2, 3.4.3, 5.2.1, 5.2.3	None	Lo NOx Burners
VB9	Vaporizer Boiler No. 9	391-3-1-.02(2)(b)1 391-3-1-.02(2)(g)2 391-3-1-.02(2)(d)2 40 CFR 60 Subpart Dc	3.2.1, 3.2.2, 3.2.3, 3.3.3, 3.3.4, 3.4.1, 3.4.2, 3.4.3, 5.2.1, 5.2.3	None	Lo NOx Burners
SB1	Steam Boiler	391-3-1-.02(2)(b)1 391-3-1-.02(2)(g)2 391-3-1-.02(2)(d)2	3.2.1, 3.2.2, 3.2.3, 3.4.1, 3.4.2, 3.4.3, 5.2.1, 5.2.3	None	None
T1	Turbine Compressor	391-3-1-.02(2)(b)1 40 CFR 60 Subpart GG	3.2.1, 3.2.2, 3.2.3, 3.3.1, 3.3.2, 3.4.1, 5.2.1, 5.5.5, 5.2.3	None	None
G1	Generator Engine 1	391-3-1-.02(2)(b)1 391-3-1-.02(2)(g)2	3.2.1, 3.2.2, 3.2.3, 3.4.1, 3.4.2, 3.4.4 4.2.1, 5.2.1, 5.2.3	CG01	Catalytic Converter
G2	Generator Engine 2	391-3-1-.02(2)(b)1 391-3-1-.02(2)(g)2	3.2.1, 3.2.2, 3.2.3, 3.4.1, 3.4.2, 3.4.4 4.2.1, 5.2.1, 5.2.3	CG02	Catalytic Converter
G3	Generator Engine 3	391-3-1-.02(2)(b)1 391-3-1-.02(2)(g)2	3.2.1, 3.2.2, 3.2.3, 3.4.1, 3.4.2, 3.4.4 4.2.1, 5.2.1, 5.2.3	CG03	Catalytic Converter

TITLE V APPLICATION REVIEW

Emission Units		Specific Limitations/Requirements		Air Pollution Control Devices	
ID No.	Description	Applicable Requirements / Standards	Corresponding Permit Conditions	ID No.	Description
G4	Generator Engine 4	391-3-1-.02(2)(b)1 391-3-1-.02(2)(g)2	3.2.1, 3.2.2, 3.2.3, 3.4.1, 3.4.2, 3.4.4 4.2.1, 5.2.1, 5.2.3	CG04	Catalytic Converter
EG	Emergency Generator	391-3-1-.02(2)(b)1 391-3-1-.02(2)(g)2	3.2.1, 3.2.2, 3.2.3, 3.4.1, 3.4.2, 3.4.3, 5.2.1, 5.2.3	None	None
C1	Compressor Engine No. 1	391-3-1-.02(2)(b)1 391-3-1-.02(2)(g)2	3.2.1, 3.2.2, 3.2.3, 3.4.1, 3.4.2, 3.4.4 4.2.1, 5.2.1, 5.2.3	CC01	Catalytic Converter
C2	Compressor Engine No. 2	391-3-1-.02(2)(b)1 391-3-1-.02(2)(g)2	3.2.1, 3.2.2, 3.2.3, 3.4.1, 3.4.2, 3.4.4 4.2.1, 5.2.1, 5.2.3	CC02	Catalytic Converter
FP1	Fire Pump Engine No. 1	391-3-1-.02(2)(b)1 391-3-1-.02(2)(g)2	3.2.1, 3.2.2, 3.2.3, 3.4.1, 3.4.2, 3.4.3, 5.2.1, 5.2.3	None	None

* Generally Applicable Requirements contained in this permit may apply also to emission units listed above.

C. Equipment & Rule Applicability

! Emission and Operating Caps -

All stationary engines at this facility are limited to firing only natural gas.

! Applicable Rules and Regulations -

Rule 391-3-1-.02(2)(b) limits visible emissions from any air emission unit to forty (40) percent or less opacity.

Rule 391-3-1-.02(2)(g) limits the sulfur content of the fuel fired in any air emission unit to a maximum 2.5 percent sulfur, by weight, in any fuel burning source below 100 million BTU's per hour of heat input capacity.

Rule 391-3-1-.02(2)(d) of the Georgia Rules for Air Quality Control requires all air emission units to operate in compliance with all applicable requirements of Rule (d) "Fuel Burning Equipment" unless emission units are subject to some other limitation under this section.

One Ruston gas combustion turbine with source code T1 was manufactured and installed in 1987. The gas combustion turbine will only burn natural gas as the fuel and has a heat input capacity between 10 and 100 million Btu/hr. This emission unit is subject to Georgia rule 391-3-1-.02(2)(b) and 40 CFR 60 Subpart GG.

Three gas vaporizer boilers with source codes VB7, VB8 and VB9 were manufactured and installed in 1996. Each vaporizer boiler will only burn natural gas as the fuel and has a heat input capacity between 10 and 100 million Btu/hr. These emission unit are subject to Georgia Rule 391-3-1-.02(2)(b) and 40 CFR 60 Subpart Dc.

TITLE V APPLICATION REVIEW

The Generators (source codes G1, G2, G3 and G4) and Boil Off Compressors (source codes C1 and C2) shall operate in compliance with all applicable requirements of Rule 391-3-1-.02(2)(yy) “Emissions of Nitrogen Oxides from Major Sources” of the Georgia Rules for Air Quality Control. The NOx RACT limit has already been determined to be 139 ppmv corrected to 15% oxygen on a dry basis or 2.0 g/hp-hr for source codes G1, G2, G3, G4, C1 and C2.

D. Compliance Status

See Section VII.F.

E. Operational Flexibility

See Section VII.F.

F. Permit Conditions

Condition 3.2.1 requires all engines at this facility to be fired with only natural gas.

Condition 3.2.2 limits the “Allowable Hours of Operation (hr/yr)” for each piece of equipment specified in Table 3-A.

Condition 3.2.3 limits the total nitrogen oxide emissions from the equipment listed in Table 3-A to the “Allowable NOx Emissions (tpy)” during any consecutive twelve month period.

Table 3-A

Emission Unit	Source Code	Make	NOx Emission Factor (lb/hr)	Allowable Hours of Operation (hr/yr)	Allowable NOx Emissions (tpy)
Regeneration Heater No. 1	RH1	NATCO	1.21	6,330	3.83
Vaporizer Boiler No. 1	VB1	Johnston	7.02	1,980 (Total for Units VB1 thru VB9)	6.95 (Total for Units VB1 thru VB9)
Vaporizer Boiler No. 2	VB2	Johnston	7.02		
Vaporizer Boiler No. 3	VB3	Johnston	7.02		
Vaporizer Boiler No. 4	VB4	Johnston	7.02		
Vaporizer Boiler No. 5	VB5	Johnston	7.02		
Vaporizer Boiler No. 6	VB6	Johnston	7.02		
Vaporizer Boiler No. 7	VB7	Johnston	7.02		
Vaporizer Boiler No. 8	VB8	Johnston	7.02		
Vaporizer Boiler No. 9	VB9	Johnston	7.02		

TITLE V APPLICATION REVIEW

Emission Unit	Source Code	Make	NOx Emission Factor (lb/hr)	Allowable Hours of Operation (hr/yr)	Allowable NOx Emissions (tpy)
Steam Boiler	SB1	Cleaver-Brooks	0.10	6,000	0.30
Turbine Compressor	T1	Ruston Tornado	29.75	6,250	92.97
Generator Engine 1	G1	Waukesha	*139 ppmv	14,000 (all 4 units combined)	34.91 (all 4 units combined)
Generator Engine 2	G2	Waukesha	*139 ppmv		
Generator Engine 3	G3	Waukesha	*139 ppmv		
Generator Engine 4	G4	Waukesha	*139 ppmv		
Emergency Generator	EG	Waukesha	9.60	240	1.15
Compressor Engine No. 1	C1	Waukesha	*139 ppmv	15,000 (both units combined)	21.00 (both units combined)
Compressor Engine No. 2	C2	Waukesha	*139 ppmv		
Fire Pump Engine No. 1	FP1	Waukesha	8.40	125	0.53

* 139 ppmv is equivalent to the RACT limit of 2.0 grams/hp-hr

Condition 3.3.1 requires the combustion turbine source code T1 to comply with the New Source Performance Standards of 40 CFR 60, Subpart A - General Provisions and Subpart GG - Standards of Performance for Stationary Gas Turbines.

Condition 3.3.2 limits the sulfur content of the fuel fired in the combustion turbine source code T1 to a maximum of 0.8 percent by weight.

Condition 3.3.3 requires the vaporizer boilers (source codes VB7, VB8 and VB9) to comply with the New Source Performance Standards of 40 CFR 60, Subpart A - General Provisions and Subpart Dc “Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units”.

Condition 3.3.4 states that the vaporizer boilers (source codes VB7, VB8 and VB9) may not discharge or cause the discharge into the atmosphere any emissions which exhibit equal to or greater than 20 percent opacity (6-minute average), except for one 6-minute per hour not more 27 percent opacity.

Condition 3.4.1 limits visible emissions from any air emission unit to forty (40) percent or less opacity.

Condition 3.4.2 limits the sulfur content of the fuel fired in any air emission unit to a maximum 2.5 percent sulfur, by weight, in any fuel burning source below 100 million BTU's per hour of heat input capacity.

Condition 3.4.3 requires all air emission units to operate in compliance with all applicable requirements of Rule 391-3-1-.02(2)(d) “Fuel Burning Equipment” of the Georgia Rules for Air Quality Control.

Condition 3.4.4 requires the Generators (source codes G1, G2, G3 and G4) and Boil Off Compressors (source codes C1 and C2) to operate in compliance with all applicable requirements of Georgia Rules for Air Quality Control 391-3-1-.02(2)(yy) “Emissions of Nitrogen Oxides from Major Sources”. The NO_x RACT limit for these sources is 139 ppmv corrected to 15% oxygen on a dry basis or 2.0 g/hp-hr.

IV. Testing Requirements (with Associated Record Keeping and Reporting)

A. General Testing Requirements

This permit specifies that a performance test may be required to determine compliance with the emission limits in Part 3.0, and the test methods to be used to determine compliance are listed. A general condition to require notification of any test and for the submission of a test plan is included.

B. Specific Testing Requirements

The initial performance tests required by 40 CFR 60.8 and the current Air Quality Permit have been completed for all existing equipment. The current Air Quality Permit requires annual performance testing for nitrogen oxides on one generator engine (G1, G2, G3, or G4) and one compressor engine (C1 or C2) to demonstrate ongoing compliance with the NO_x RACT limits as part of the RACT plan. This testing requirement is retained in this Title V Permit. Additional performance testing is not required by any applicable regulation; therefore this permit does not contain any other conditions to require specific testing.

V. Monitoring Requirements (with Associated Record Keeping and Reporting)

A. General Monitoring Requirements

This permit specifies that any monitoring systems installed should be in continuous operation and that downtime due to maintenance should be minimized.

B. Specific Monitoring Requirements

All fuel burning sources at the facility burn only pipeline quality natural gas. These sources include boilers, internal combustion engines, and one combustion turbine. The boilers and engines are subject to Georgia Rules (b) and (g) for opacity and fuel sulfur content, respectively. The boilers are also subject to Georgia Rule (d) for particulate matter. The turbine is subject to Georgia Rule (b) and a fuel sulfur limit in 40 CFR 60 Subpart GG. To avoid the requirements of Prevention of Significant Deterioration (PSD) all of these sources have nitrogen oxides emission factors, hours and ton per year operation limits. Four Generator Engines (G1, G2, G3, and G4) and two Compressor Engines (C1 and C2) have nitrogen oxides concentration emission limits due to Georgia Rule (yy) which requires NO_x RACT and PSD avoidance.

Opacity and particulate matter from the combustion of natural gas is negligible, and pipeline quality natural gas contains insignificant amounts of sulfur. Since the likelihood of violating any of the State Rules listed in the above paragraph is minimal, monitoring is not required. In order to comply with the fuel sulfur limit from Subpart GG, however, semiannual fuel sampling is required in accordance with a custom schedule approved under 40 CFR 60.334(b)(c).

To provide reasonable assurance that the nitrogen oxides emission limitation is not exceeded, monitoring is required. Monitoring consists of measurements of nitrogen oxides using a portable analyzer (Conditional Test Method 30). Monitoring is initially done on a weekly basis. Frequency may be allowed to decrease the quarterly measurements if certain engine performance criteria are met. For units that operate infrequently (less than 100 hours per quarter), monitoring may be performed annually (once every fourth quarter). An equation for determining the nitrogen oxides mass emission rate (in pounds per hour) from the heat input, oxygen concentration, nitrogen oxides and F-factor is included. An equation is also included to calculate emissions in units of ppm corrected to 15 percent oxygen (the units of the NOx RACT limit) for emission units G1, G2, G3, G4, C1, and C2.

C. Record Keeping and Reporting Requirements:

Records, including identification of any deviations from applicable monitoring triggers, the cause of such occurrences, and the corrective actions taken, are required to be kept by the Permittee and reporting is required on a semiannual basis. The Permittee is also required to keep and report records on the hours of operation of several emission units and to report the 12-month rolling totals. If the facility exceeds the hours of operation limits for a unit or group of units, it is required to calculate the total NOx emissions from the actual hours of operation and the specified emission factors for that unit or group of units.

VI. Other Record Keeping and Reporting Requirements

A. General Record Keeping and Reporting Requirements:

The Permit contains general requirements for the maintenance of all records for a period of five years following the date of entry and requires the prompt reporting of all information related to deviations from applicable requirements.

B. Specific Record Keeping and Reporting Requirements:

Not Applicable

VII. Specific Requirements

A. Operational Flexibility

The applicant did not include alternate operating scenarios in the Title V Application.

B. Alternative Requirements

There are no alternative requirements that need to be incorporated into the Title V Permit.

C. Insignificant Activities

A complete list of insignificant activities is included at the end of the Title V Permit as Attachment B. These insignificant units may also be found in sections 4.10 and 4.50 of the Title V application.

D. Temporary Sources

The applicant did not include any temporary sources in their Title V Applications.

E. Short-Term Activities

The applicant did not include short-term activities in their Title V Applications.

F. Compliance Schedule/Progress Reports

This facility is in compliance with all Air Quality Regulations. Therefore, no compliance schedule or progress reports are necessary.

G. Emissions Trading

This facility is not involved in any emission trading.

H. Acid Rain Requirements

This facility is not subject to any requirements in Title IV of the Clean Air Act.

I. Prevention of Accidental Releases

Refer to section 7.10 and 7.10.1 of the Title V permit.

J. Stratospheric Ozone Protection Requirements

This facility did not indicate that they are subject to Title VI.

K. Pollution Prevention

There are no pollution prevention provisions incorporated into this Title V permit.

L. Specific Conditions

None

VIII. General Provisions

Generic provisions have been included in this permit to address the requirements in 40 CFR Part 70 that apply to all Title V sources, and the requirements in Chapter 391-3-1 of the Georgia Rules for Air Quality Control that apply to all stationary sources of air pollution.

Addendum To Narrative

Company Comment:

The company requests that facility address be corrected in the Title V application and final permit. The correct address is:

12860 East Cherokee Drive
Ball Ground, Georgia 30107

Department Comment:

The company's request was changed to the above location in the final permit.