TITLE V OPERATION PERMIT
RENEWAL APPLICATION FOR
CHARLES LARSEN MEMORIAL POWER PLANT
LAKELAND ELECTRIC
POLK COUNTY, FLORIDA

Prepared For:
Lakeland Electric – Power Supply
City of Lakeland
501 East Lemon Street
Lakeland, Florida 33801

Prepared By:
Golder Associates Inc.
6241 NW 23rd Street, Suite 500
Gainesville, Florida 32653-1500

June 2002
0237508

DISTRIBUTION:
4 Copies – FDEP Bureau of Air Regulation
1 Copy – FDEP Southwest District Office
2 Copies - Lakeland Electric – Environmental Affairs
1 Copy - Golder Associates Inc.

Department of Environmental Protection

Division of Air Resources Management

RECEIVED
JUN 19 2002
BUREAU OF AIR REGULATION

APPLICATION FOR AIR PERMIT - TITLE V SOURCE

See Instructions for Form No. 62-210.900(1)

I. APPLICATION INFORMATION

Identification of Facility

1. Facility Owner/Company Name: **Lakeland Electric**	
2. Site Name: **Charles Larsen Memorial Power Plant**	
3. Facility Identification Number: **1050003**	[ ] Unknown
4. Facility Location: Street Address or Other Locator: **2002 E. Highway 92** City: **Lakeland** County: **Polk** Zip Code: **33801**	
5. Relocatable Facility? [ ] Yes [X] No	6. Existing Permitted Facility? [X] Yes [ ] No

Application Contact

1. Name and Title of Application Contact: **Ms. Farzie Shelton, Manager of Environmental Affairs**		
2. Application Contact Mailing Address: Organization/Firm: **Lakeland Electric** Street Address: **501 East Lemon Street** City: **Lakeland**	State: **FL**	Zip Code: **33801-5079**
3. Application Contact Telephone Numbers: Telephone: (**863**) **834 – 6603**	Fax: (**863**) **834 - 8187**	

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	6/19/02
2. Permit Number:	1050003 - 011 - AV
3. PSD Number (if applicable):	
4. Siting Number (if applicable):	

Purpose of Application

Air Operation Permit Application

This Application for Air Permit is submitted to obtain: (Check one)

[ ] Initial Title V air operation permit for an existing facility which is classified as a Title V source.

[ ] Initial Title V air operation permit for a facility which, upon start up of one or more newly constructed or modified emissions units addressed in this application, would become classified as a Title V source.

Current construction permit number: _____

[ ] Title V air operation permit revision to address one or more newly constructed or modified emissions units addressed in this application.

Current construction permit number: _____

Operation permit number to be revised: _____

[ ] Title V air operation permit revision or administrative correction to address one or more proposed new or modified emissions units and to be processed concurrently with the air construction permit application. (Also check Air Construction Permit Application below.)

Operation permit number to be revised/corrected: _____

[X] Title V air operation permit revision for reasons other than construction or modification of an emissions unit. Give reason for the revision; e.g., to comply with a new applicable requirement or to request approval of an "Early Reductions" proposal.

Operation permit number to be revised: **1050003-010-AV**

Reason for revision: **Title V Renewal, Current Permit Expires December 31, 2002.**

Air Construction Permit Application

This Application for Air Permit is submitted to obtain: (Check one)

[ ] Air construction permit to construct or modify one or more emissions units.

[ ] Air construction permit to make federally enforceable an assumed restriction on the potential emissions of one or more existing, permitted emissions units.

[ ] Air construction permit for one or more existing, but unpermitted, emissions units.

Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible Official:
   Keith Hulbert, General Manager
2. Owner/Authorized Representative or Responsible Official Mailing Address:
   Organization/Firm: **Lakeland Electric**
   Street Address: **501 East Lemon Street**
   City: **Lakeland** State: **FL** Zip Code: **33801-5079**
3. Owner/Authorized Representative or Responsible Official Telephone Numbers:
   Telephone: (**863**) **834 - 6541** Fax: (**863**) **834 - 6373**
4. Owner/Authorized Representative or Responsible Official Statement:

   I, the undersigned, am the owner or authorized representative(check here [ ], if so) or the responsible official (check here [**X**], if so) of the Title V source addressed in this application, whichever is applicable. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof. I understand that a permit, if granted by the Department, cannot be transferred without authorization from the Department, and I will promptly notify the Department upon sale or legal transfer of any permitted emissions unit.*

   Keith C Hulbert — Signature

   6/18/02 — Date

* Attach letter of authorization if not currently on file.

Professional Engineer Certification

1. Professional Engineer Name: **Kennard F. Kosky**
   Registration Number: **14996**
2. Professional Engineer Mailing Address:
   Organization/Firm: **Golder Associates Inc.**
   Street Address: **6241 NW 23rd Street, Suite 500**
   City: **Gainesville** State: **FL** Zip Code: **32653-1500**
3. Professional Engineer Telephone Numbers:
   Telephone: (**352**) **336 - 5600** Fax: (**352**) **336 - 6603**

4. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this Application for Air Permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

If the purpose of this application is to obtain a Title V source air operation permit (check here [X], if so), I further certify that each emissions unit described in this Application for Air Permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance schedule is submitted with this application.

If the purpose of this application is to obtain an air construction permit for one or more proposed new or modified emissions units (check here [ ], if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

If the purpose of this application is to obtain an initial air operation permit or operation permit revision for one or more newly constructed or modified emissions units (check here [ ], if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

Signature: Bernard F. Koski

Date: 6/17/02

(seal) BERNARD F. KOSKI CERTIFICATE NO. 14996 STATE OF FLORIDA PROFESSIONAL ENGINEER

* Attach any exception to certification statement.

Scope of Application

Emissions Unit ID	Description of Emissions Unit	Permit Type	Processing Fee
003	Fossil Fuel Fired Steam Generator #6		
004	Fossil Fuel Fired Steam Generator #7		
005	Peaking Gas Turbine #3		
006	Peaking Gas Turbine #2		
007	Peaking Gas Turbine #1 (Permanently Retired and Removed)		
008	Combined Cycle Combustion Turbine		
009-013	Facility-Wide Unregulated Units		

Application Processing Fee

Check one: [ ] Attached - Amount: $: _____ [X] Not Applicable

Construction/Modification Information

1. Description of Proposed Project or Alterations:
2. Projected or Actual Date of Commencement of Construction:
3. Projected Date of Completion of Construction:

Application Comment

This application is a renewal of the current Title V Air Operating Permit No. 1050003-010-AV. The updates made in Permit Nos. 105003-004-AV, 105003-009-AV, and 105003-010-AV should all be reflected in the current application and issued renewal permit. The facility contains 2 fossil fired steam generators (FFFSG) that can fire No. 6 fuel oil or natural gas, 2 existing peaking units that can fire natural gas or No. 2 fuel oil having a maximum sulfur content of 0.5 percent by weight, and a combined cycle combustion turbine with a heat recovery steam generator (HRSG) that fires natural gas as the primary fuel with No. 2 fuel oil with a maximum sulfur content of 0.20 percent by weight as a limited auxiliary fuel. Unregulated emissions units are addressed as a separate emission unit section. Peaking Gas Turbine #1 EU ID No. 007 is a permanently retired unit and should be excluded from all future permitting. EU ID 007 has been removed from the facility.

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates: Zone: **17** East (km): **408.9** North (km): **3102.5**			
2. Facility Latitude/Longitude: Latitude (DD/MM/SS): **28 / 2 / 56** Longitude (DD/MM/SS): **81 / 55 / 25**			
3. Governmental Facility Code: **4**	4. Facility Status Code: **A**	5. Facility Major Group SIC Code: **49**	6. Facility SIC(s): **4911**
7. Facility Comment (limit to 500 characters): **The Larsen Power Plant consists of 2 fossil fuel fired-steam generators (FFFSG), 2 peaking gas turbines, and 1 combined cycle combustion turbine. FFFSG Units 6 and 7 are fired with No. 6 fuel oil and natural gas (distillate oil is used as an ignitor). Peaking Units 2 and 3 are fired with natural gas or No. 2 fuel oil having a maximum sulfur content of 0.5 percent by weight. Combined Cycle Unit 8 fires natural gas as the primary fuel with No. 2 fuel oil with a maximum sulfur content of 0.20 percent by weight as a limited auxiliary fuel.**			

Facility Contact

1. Name and Title of Facility Contact: **Ms. Farzie Shelton, Manager of Environmental Affairs**
2. Facility Contact Mailing Address: Organization/Firm: **Lakeland Electric** Street Address: **501 East Lemon Street** City: **Lakeland** State: **FL** Zip Code: **33801-5079**
3. Facility Contact Telephone Numbers: Telephone: (**863**) **834 – 6603** Fax: (**863**) **834 - 8187**

Facility Regulatory Classifications

Check all that apply:

1. [ ] Small Business Stationary Source?	[ ] Unknown
2. [X] Major Source of Pollutants Other than Hazardous Air Pollutants (HAPs)?	
3. [ ] Synthetic Minor Source of Pollutants Other than HAPs?	
4. [ ] Major Source of Hazardous Air Pollutants (HAPs)?	
5. [ ] Synthetic Minor Source of HAPs?	
6. [X] One or More Emissions Units Subject to NSPS?	
7. [ ] One or More Emission Units Subject to NESHAP?	
8. [ ] Title V Source by EPA Designation?	
9. Facility Regulatory Classifications Comment (limit to 200 characters): **Unit 8 is subject to NSPS Subpart GG.**	

List of Applicable Regulations

See Attachment LR-FI-A	

B. FACILITY POLLUTANTS

List of Pollutants Emitted

1. Pollutant Emitted	2. Pollutant Classif.	3. Requested Emissions Cap lb/hour	tons/year	4. Basis for Emissions Cap	5. Pollutant Comment
PM	A				Particulate Matter-Total
SO_2	A				Sulfur Dioxide
NO_x	A				Nitrogen Oxides
CO	A				Carbon Monoxides
PM_{10}	A				Particulate Matter-PM_{10}

C. FACILITY SUPPLEMENTAL INFORMATION

Supplemental Requirements

1. Area Map Showing Facility Location: [X] Attached, Document ID: LR-FI-C1 [ ] Not Applicable [ ] Waiver Requested
2. Facility Plot Plan: [X] Attached, Document ID: LR-FI-C2 [ ] Not Applicable [ ] Waiver Requested
3. Process Flow Diagram(s): [X] Attached, Document ID: LR-FI-C3 [ ] Not Applicable [ ] Waiver Requested
4. Precautions to Prevent Emissions of Unconfined Particulate Matter: [X] Attached, Document ID: LR-FI-C4 [ ] Not Applicable [ ] Waiver Requested
5. Fugitive Emissions Identification: [X] Attached, Document ID: LR-FI-C5 [ ] Not Applicable [ ] Waiver Requested
6. Supplemental Information for Construction Permit Application: [ ] Attached, Document ID: _____ [X] Not Applicable
7. Supplemental Requirements Comment:

Additional Supplemental Requirements for Title V Air Operation Permit Applications

8. List of Proposed Insignificant Activities:
   [X] Attached, Document ID: LR-FI-C8 [ ] Not Applicable

9. List of Equipment/Activities Regulated under Title VI:
   [X] Attached, Document ID: LR-FI-C9
   [ ] Equipment/Activities On site but Not Required to be Individually Listed
   [ ] Not Applicable

10. Alternative Methods of Operation:
    [ ] Attached, Document ID:_____ [X] Not Applicable

11. Alternative Modes of Operation (Emissions Trading):
    [ ] Attached, Document ID:_____ [X] Not Applicable

12. Identification of Additional Applicable Requirements:
    [X] Attached, Document ID: LR-FI-C12 [ ] Not Applicable

13. Risk Management Plan Verification:
    [ ] Plan previously submitted to Chemical Emergency Preparedness and Prevention Office (CEPPO). Verification of submittal attached (Document ID:_____) or previously submitted to DEP (Date and DEP Office:_____)
    [ ] Plan to be submitted to CEPPO (Date required:_____)
    [X] Not Applicable

14. Compliance Report and Plan:
    [X] Attached, Document ID: LR-FI-C14 [ ] Not Applicable

15. Compliance Certification (Hard-copy Required):
    [X] Attached, Document ID: LR-FI-C15 [ ] Not Applicable

ATTACHMENT LR-FI-A

LIST OF APPLICABLE REGULATIONS

Attachment LR-FI-A Title V Core List

Effective: 03/01/02

[**Note:** The Title V Core List is meant to simplify the completion of the "List of Applicable Regulations" for DEP Form No. 62-210.900(1), Application for Air Permit - Long Form. The Title V Core List is a list of rules to which all Title V Sources are presumptively subject. The Title V Core List may be referenced in its entirety, or with specific exceptions. The Department may periodically update the Title V Core List.]

Federal: ***(description)***

40 CFR 61, Subpart M: NESHAP for Asbestos.

40 CFR 82: Protection of Stratospheric Ozone.
40 CFR 82, Subpart B: Servicing of Motor Vehicle Air Conditioners (MVAC).
40 CFR 82, Subpart F: Recycling and Emissions Reduction.

State: ***(description)***

CHAPTER 62-4, F.A.C.: PERMITS, effective 06-01-01

62-4.030, F.A.C.: General Prohibition.
62-4.040, F.A.C.: Exemptions.
62-4.050, F.A.C.: Procedure to Obtain Permits; Application.
62-4.060, F.A.C.: Consultation.
62-4.070, F.A.C.: Standards for Issuing or Denying Permits; Issuance; Denial.
62-4.080, F.A.C.: Modification of Permit Conditions.
62-4.090, F.A.C.: Renewals.
62-4.100, F.A.C.: Suspension and Revocation.
62-4.110, F.A.C.: Financial Responsibility.
62-4.120, F.A.C.: Transfer of Permits.
62-4.130, F.A.C.: Plant Operation - Problems.
62-4.150, F.A.C.: Review.
62-4.160, F.A.C.: Permit Conditions.
62-4.210, F.A.C.: Construction Permits.
62-4.220, F.A.C.: Operation Permit for New Sources.

CHAPTER 62-210, F.A.C.: STATIONARY SOURCES - GENERAL REQUIREMENTS, effective 06-21-01

62-210.300, F.A.C.: Permits Required.
62-210.300(1), F.A.C.: Air Construction Permits.
62-210.300(2), F.A.C.: Air Operation Permits.
62-210.300(3), F.A.C.: Exemptions.
62-210.300(5), F.A.C.: Notification of Startup.
62-210.300(6), F.A.C.: Emissions Unit Reclassification.
62-210.300(7), F.A.C.: Transfer of Air Permits.

62-210.350, F.A.C.: Public Notice and Comment.
62-210.350(1), F.A.C.: Public Notice of Proposed Agency Action.
62-210.350(2), F.A.C.: Additional Public Notice Requirements for Emissions Units Subject to Prevention of Significant Deterioration or Nonattainment-Area Preconstruction Review.
62-210.350(3), F.A.C.: Additional Public Notice Requirements for Sources Subject to Operation Permits for Title V Sources.

62-210.360, F.A.C.: Administrative Permit Corrections.
62-210.370(3), F.A.C.: Annual Operating Report for Air Pollutant Emitting Facility.
62-210.400, F.A.C.: Emission Estimates.
62-210.650, F.A.C.: Circumvention.
62-210.700, F.A.C.: Excess Emissions.

62-210.900, F.A.C.: Forms and Instructions.
62-210.900(1), F.A.C.: Application for Air Permit – Title V Source, Form and Instructions.
62-210.900(5), F.A.C.: Annual Operating Report for Air Pollutant Emitting Facility, Form and Instructions.
62-210.900(7), F.A.C.: Application for Transfer of Air Permit – Title V and Non-Title V Source.

CHAPTER 62-212, F.A.C.: STATIONARY SOURCES - PRECONSTRUCTION REVIEW, effective 08-17-00

CHAPTER 62-213, F.A.C.: OPERATION PERMITS FOR MAJOR SOURCES OF AIR POLLUTION, effective 04-16-01

62-213.205, F.A.C.: Annual Emissions Fee.
62-213.400, F.A.C.: Permits and Permit Revisions Required.
62-213.410, F.A.C.: Changes Without Permit Revision.
62-213.412, F.A.C.: Immediate Implementation Pending Revision Process.
62-213.415, F.A.C.: Trading of Emissions Within a Source.
62-213.420, F.A.C.: Permit Applications.
62-213.430, F.A.C.: Permit Issuance, Renewal, and Revision.
62-213.440, F.A.C.: Permit Content.
62-213.450, F.A.C.: Permit Review by EPA and Affected States
62-213.460, F.A.C.: Permit Shield.

62-213.900, F.A.C.: Forms and Instructions.
62-213.900(1), F.A.C.: Major Air Pollution Source Annual Emissions Fee Form.
62-213.900(7), F.A.C.: Statement of Compliance Form.

CHAPTER 62-296, F.A.C.: STATIONARY SOURCES - EMISSION STANDARDS, effective 03-02-99

62-296.320(4)(c), F.A.C.: Unconfined Emissions of Particulate Matter.

62-296.320(2), F.A.C.: Objectionable Odor Prohibited.

CHAPTER 62-297, F.A.C.: STATIONARY SOURCES - EMISSIONS MONITORING, effective 03-02-99

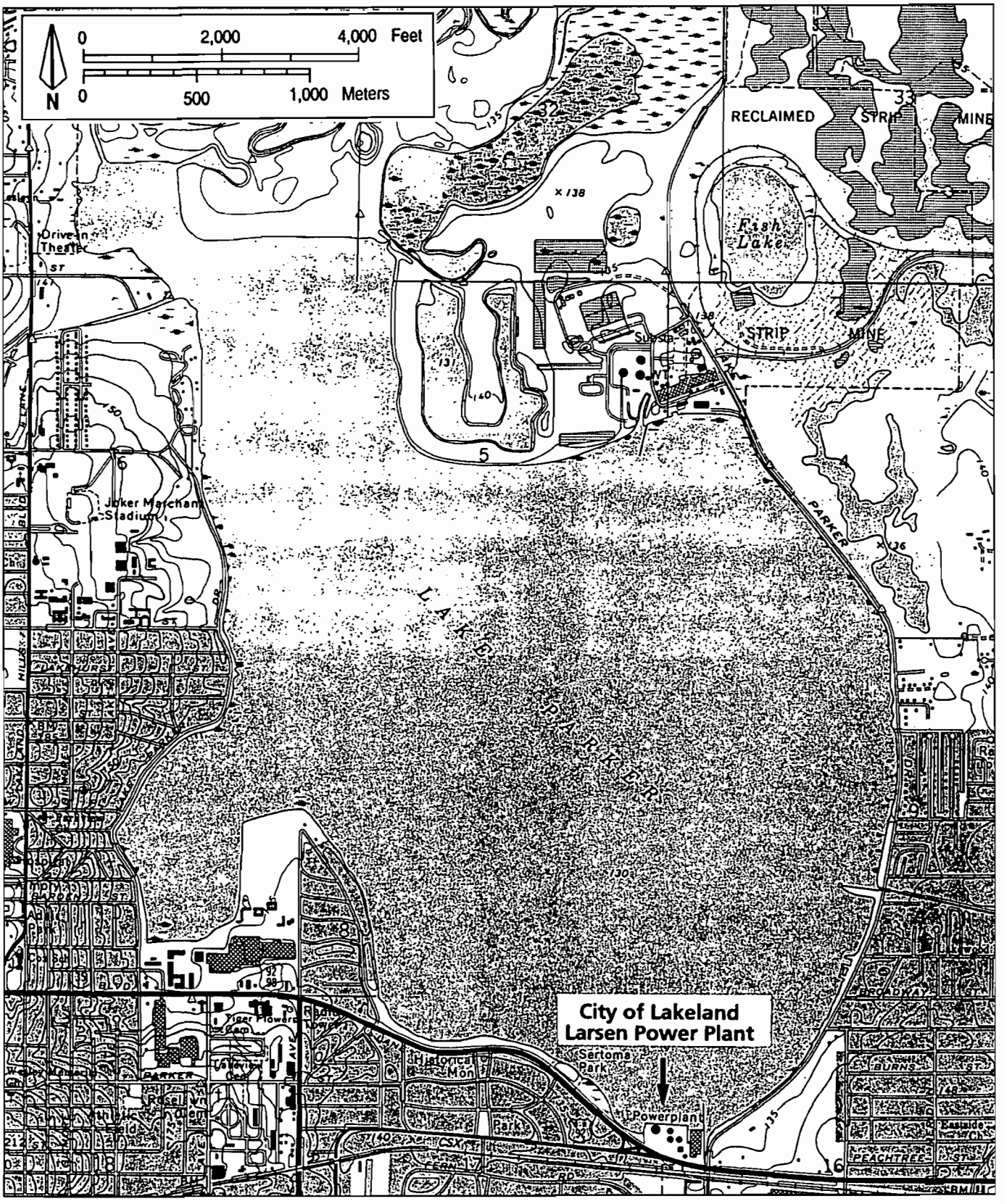
62-297.310, F.A.C.: General Test Requirements.
62-297.330, F.A.C.: Applicable Test Procedures.
62-297.340, F.A.C.: Frequency of Compliance Tests.
62-297.345, F.A.C.: Stack Sampling Facilities Provided by the Owner of an Emissions Unit.
62-297.350, F.A.C.: Determination of Process Variables.
62-297.570, F.A.C.: Test Report.
62-297.620, F.A.C.: Exceptions and Approval of Alternate Procedures and Requirements.

Miscellaneous:

CHAPTER 28-106, F.A.C.: Decisions Determining Substantial Interests
CHAPTER 62-110, F.A.C.: Exception to the Uniform Rules of Procedure, effective 07-01-98
CHAPTER 62-256, F.A.C.: Open Burning and Frost Protection Fires, effective 11-30-94
CHAPTER 62-257, F.A.C.: Asbestos Notification and Fee, effective 02-09-99
CHAPTER 62-281, F.A.C.: Motor Vehicle Air Conditioning Refrigerant Recovery and Recycling, effective 09-10-96

ATTACHMENT LR-FI-C1

AREA MAP SHOWING FACILITY LOCATION



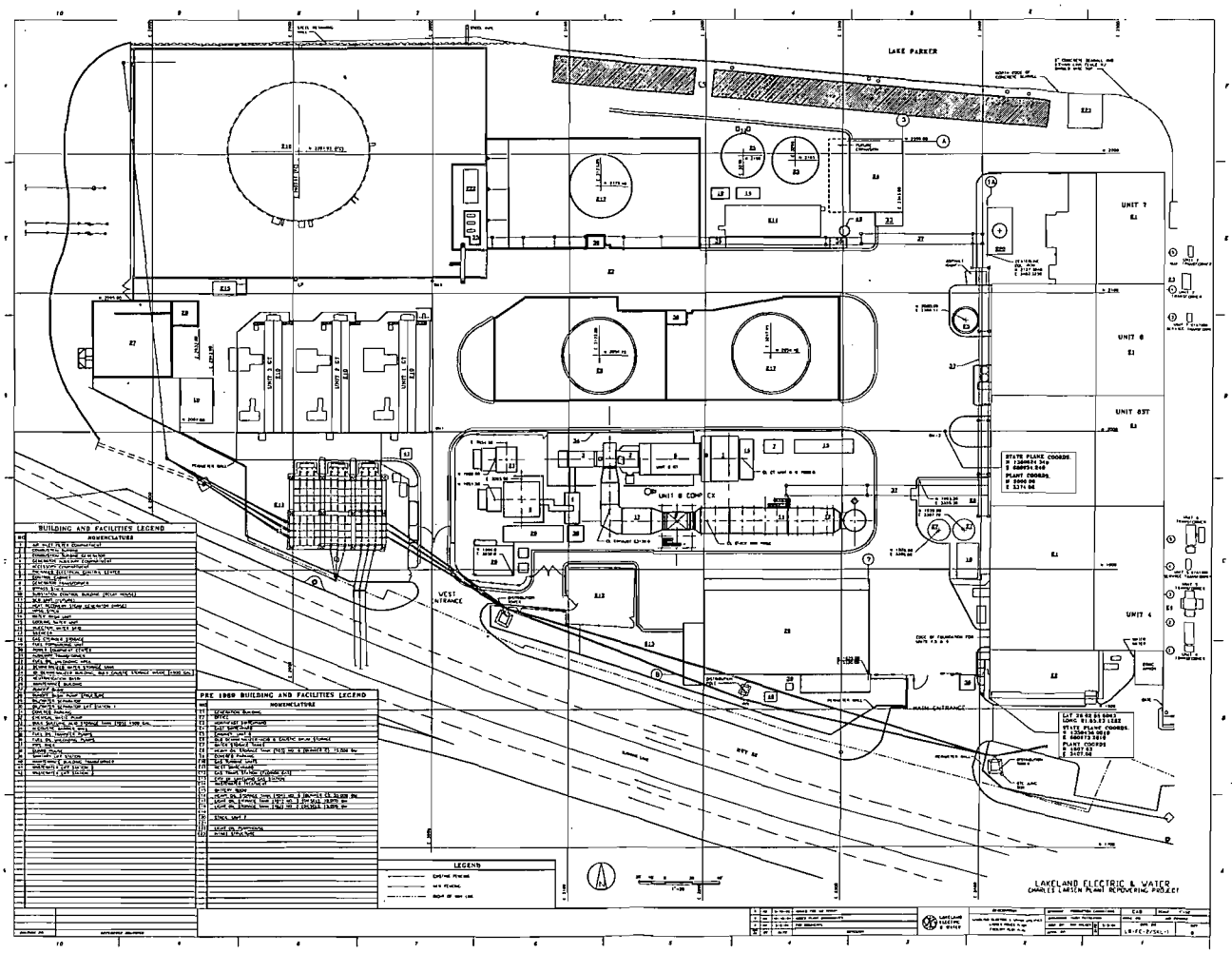
Attachment LR-FI-C1
Area Map Showing Facility Location

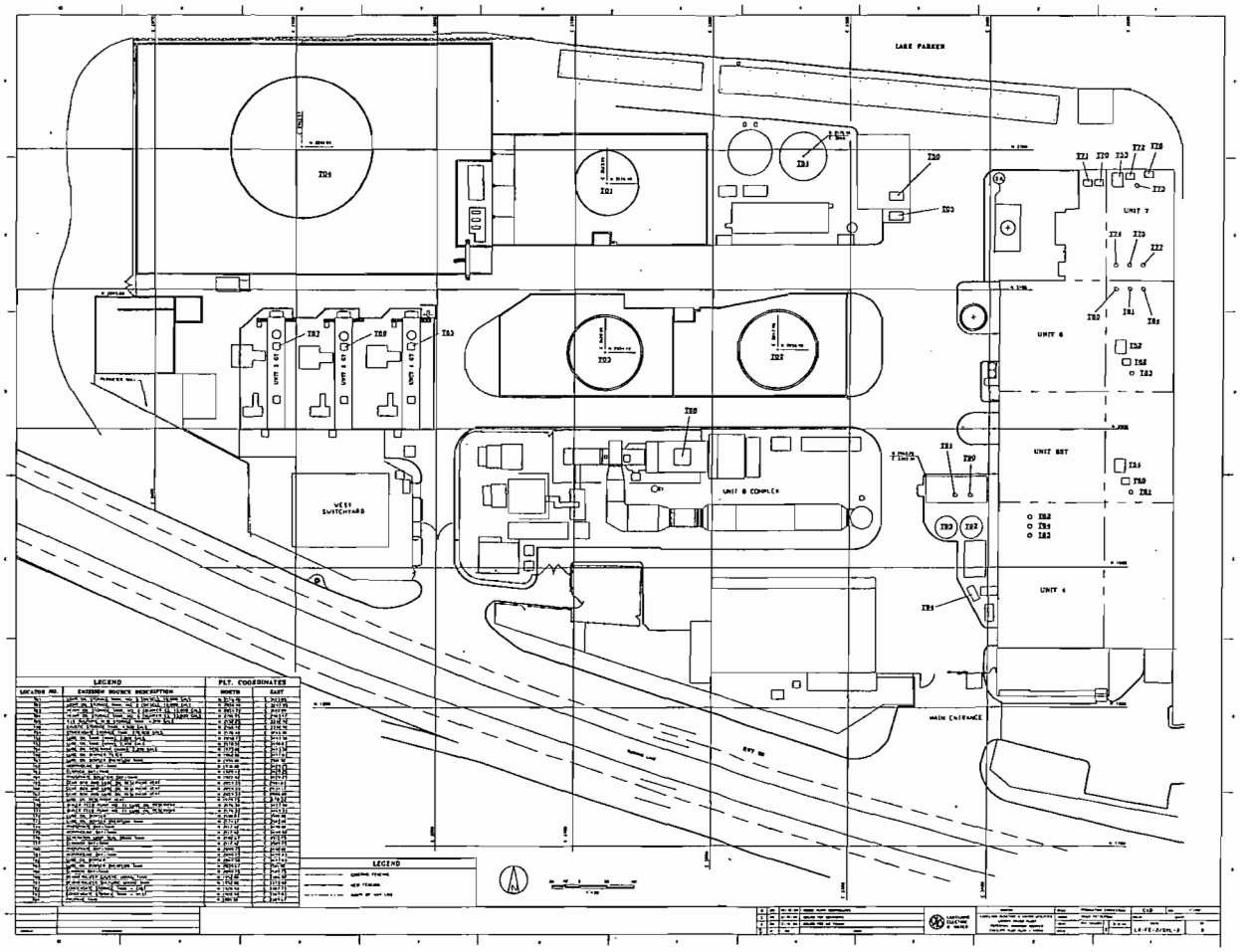
Source: Golder Associates Inc., 2002

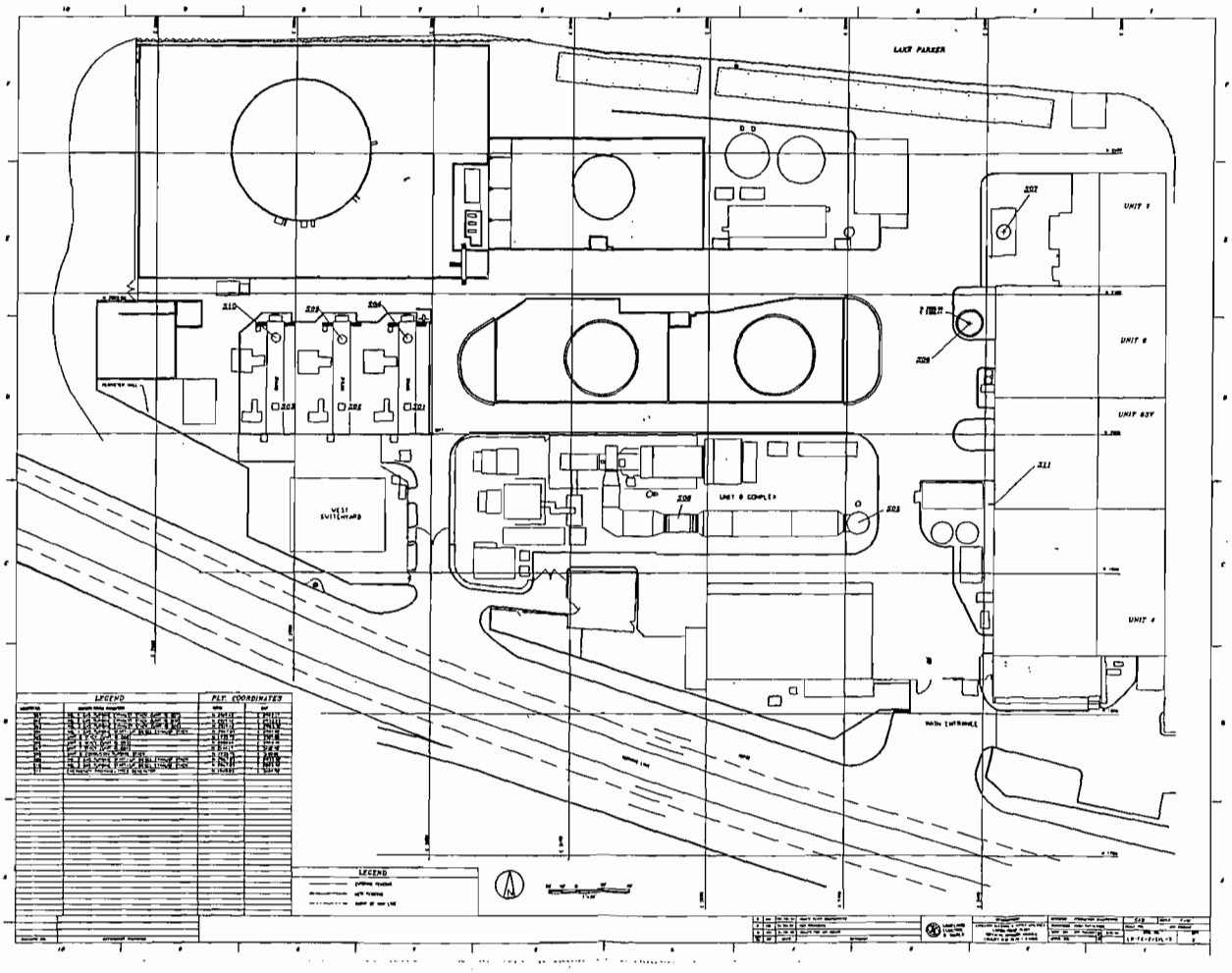
Golder Associates

ATTACHMENT LR-FI-C2

FACILITY PLOT PLAN

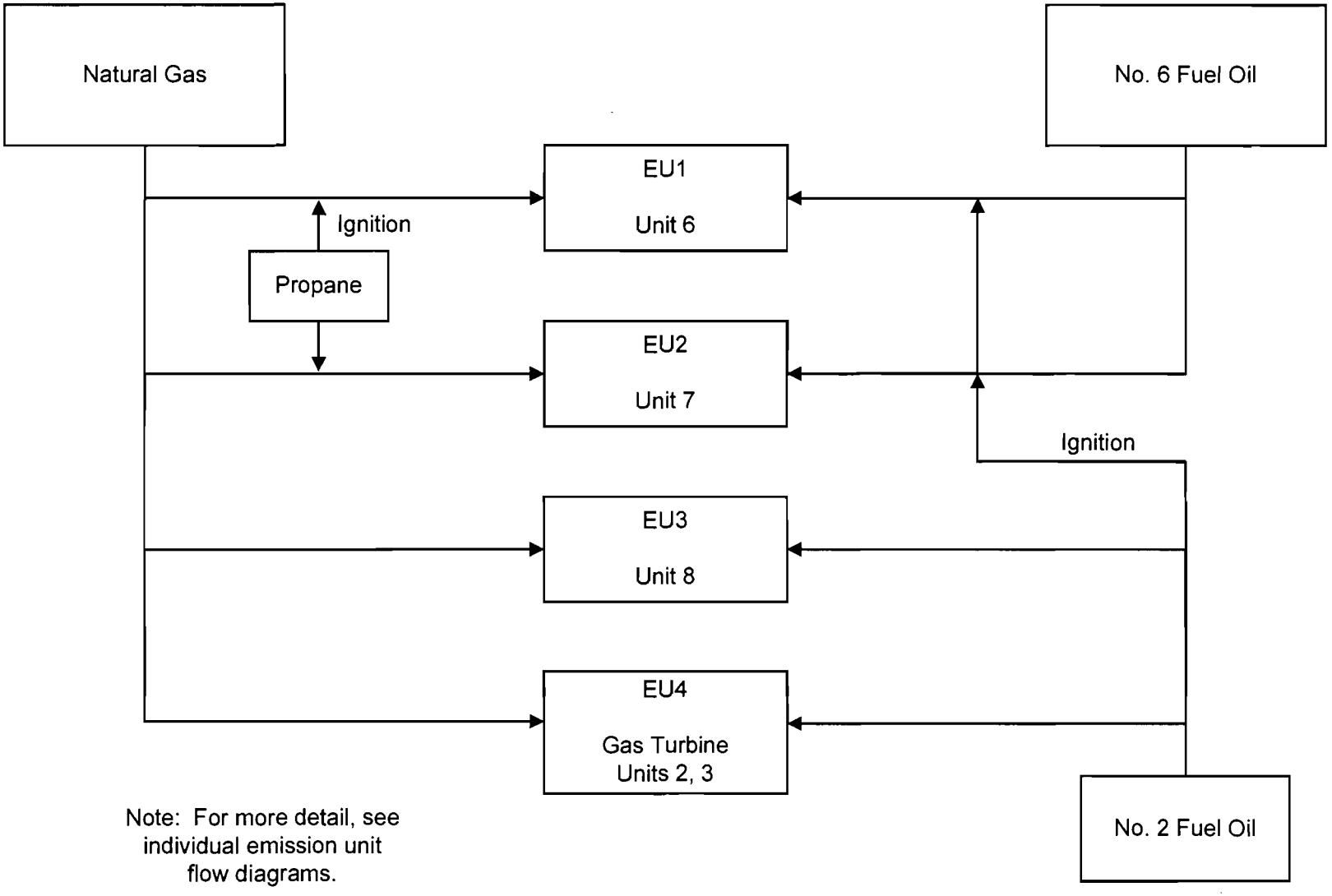






ATTACHMENT LR-FI-C3

PROCESS FLOW DIAGRAM



Attachment LR-FI-C3. Charles Larsen Power Plant
Process Flow Diagram

Source: Golder Associates Inc., 2002.

Process Flow Legend
Solid/Liquid
Gas
Steam

Golder Associates

ATTACHMENT LR-FI-C4

PRECAUTIONS TO PREVENT EMISSIONS OF UNCONFINED PARTICULATE MATTER

ATTACHMENT LR-FI-C4

PRECAUTIONS TO PREVENT EMISSIONS OF UNCONFINED PARTICULATE MATTER

The facility has negligible amounts of unconfined particulate matter as a result of the operation of the facility. Sources of particulate matter include:

- Fugitive dust from paved and unpaved roads, and
- Fugitive particulates from the use of bagged chemical products.

Operational measures are undertaken at the facility which also minimize particulate emissions, in accordance with 62-296.320(4)(c)2, F.A.C.:

- Maintenance of paved areas,
- Regular mowing of grass and care of vegetation, and
- Limiting access to plant property by unnecessary vehicles.

ATTACHMENT LR-FI-C5

FUGITIVE EMISSIONS IDENTIFICATION

ATTACHMENT LR-FI-C5
FUGITIVE EMISSIONS IDENTIFICATION

Many fugitive emissions at the plant site have been classified as either "trivial activities," or are requested to be exempted under Rule 62-213.440(1). The types of fugitive emissions that are included as trivial or exempt are discussed below.

Criteria and Precursor Air Pollutants

Fugitive particulate emissions are addressed in Attachment LR-FI-C4. Lakeland has not identified fugitive emissions of sulfur dioxide, nitrogen oxides, carbon monoxide, or lead compounds which would exceed the thresholds defined in the permit application instructions.

Volatile Organic Compounds (VOCs)

Fugitive emissions of VOCs include those resulting from the use of cleaners and solvents for maintenance and operation. VOCs are also emitted by the various fuel oil storage tanks on the plant property, and by the combustion turbines and the fossil-fuel steam generators. VOC emissions for storage tanks are covered in the facility-wide fugitive ***Emission Unit*** section of this permit application.

Fugitive HAPs Emissions

The following hazardous air pollutants are or may be present on the facility property and are potential sources of fugitive HAPs emissions:

- asbestos
- benzene
- hydrazine
- hydrochloric acid
- mercury compounds
- methyl ethyl ketone
- toluene
- xylene

Asbestos - Present in gasket material, pipe insulation, and various other locations. The facility complies with the federal NESHAPS (40 CFR 61 Subpart M) and state rules (62-257, F.A.C.) governing the abatement of asbestos-containing materials. No releases of asbestos are expected for the facility.

Benzene - Present in unleaded gasoline. The facility maintains a storage tank for unleaded gasoline. These emissions have been calculated to be significantly less than 1 TPY.

Chlorine - Used for water treatment at the facility.

Hydrazine - Hydrazine solution may be used for the treatment of boiler water.

Hydrochloric Acid - The facility may utilize hydrochloric acid in cleaning filter beds in the water treatment facility at the chemistry laboratory for use in analytical procedures.

Mercury Compounds - The facility uses mercury-containing compounds in the chemistry laboratory for use in analytical procedures and flow-measuring equipment.

Methyl Ethyl Ketone, Toluene, Xylene - The facility uses paint thinners and solvents (which may contain MEK, toluene, or xylene) for use in plant maintenance activities. These containers are kept closed.

Regulated Toxic or Flammable Substances

The following regulated toxic or flammable substances are or may be present at the facility:

- ammonia (aqueous, concentration 20% or greater)
- chlorine
- hydrazine
- hydrochloric acid
- nitric acid
- acetylene
- methane (natural gas)

Chlorine, Hydrazine, Hydrochloric Acid - Considered on the preceding page.

Nitric Acid - Nitric acid may be used in the chemistry laboratory for use in analytical procedures.

Acetylene - Present on the facility property in 250-lb cylinders which are used for plant maintenance (welding and cutting).

Methane - Is a primary component of natural gas. The facility has a natural gas pipeline which delivers fuel to the generating units. This fuel delivery system is normally airtight, but does have safety valves which occasionally relieve (open) when an overpressure condition develops in the gas line.

ATTACHMENT LR-FI-C8

LIST OF PROPOSED INSIGNIFICANT ACTIVITIES

ATTACHMENT LR-FI-C8
LIST OF PROPOSED INSIGNIFICANT ACTIVITIES

Presented in Table LR-FI-C8 is a list of activities that are proposed to be exempted from Title V permitting under Rule 62-213.430(6). The exempt activities listed are also those activities that are included in Rule 62-210.300(3)(a) which would not exceed the thresholds in Rule 62-213.430(6)(b)3. Other units that are also on the exempt list, but together may exceed the thresholds in Rule 62-213.430(6)(b)3. are listed in Emission Unit (EU) Section 5.

A comprehensive emission inventory was prepared and the cumulative estimated emissions from those activities for which an exemption is sought. The total emissions are: VOCs: <3 tons/year; total HAPs: <100 lb/year; single HAP: <50 lb/year. The VOCs estimates for the largest sources of VOCs, i.e., storage tanks, are included in Emission Unit 5.

This methodology is consistent with the current Title V Air Operating Permit No. 1050003-010-AV and has not changed since the original submittal.

Table LR-FI-C8. City of Lakeland - Larsen Power Plant: List of Insignificant Sources

Emission Point Description
1. Tank T-01 Distillate Fuel Oil No. 2
2. Tank T-02 Distillate Fuel Oil No. 2
3. Tank T-03 Residual Oil No. 6
4. Tank T-04 Residual Oil No. 6
5. Sources Exempt by Rule 62-210.300(3)(a)
62-210.300(3)(a)4.-comfort heating < 1 mmBtu/hr
62-210.300(3)(a)5.-mobile sources
62-210.300(3)(a)7.-non-industrial vacuum cleaning
62-210.300(3)(a)8.-refrigeration units
62-210.300(3)(a)9.-vacuum pumps for labs
62-210.300(3)(a)10.-steam cleaning equipment
62-210.300(3)(a)11.-sanders < 5 ft^2
62-210.300(3)(a)12.-space heating equipment; (non-boilers)
62-210.300(3)(a)14.-bakery ovens
62-210.300(3)(a)15.-lab equipment
62-210.300(3)(a)16.-brazing, soldering, or welding
62-210.300(3)(a)17.-laundry dryers
62-210.300(3)(a)22.-fire and safety equipment
62-210.300(3)(a)24.-surface coating < 5% VOC

ATTACHMENT LR-FI-C9

LIST OF EQUIPMENT / ACTIVITIES REGULATED
TITLE VI

ATTACHMENT LR-FI-C9

LIST OF EQUIPMENT / ACTIVITIES REGULATED — TITLE VI

The City of Lakeland Larsen Plant currently has 1 air-conditioning unit that currently meets the 50-pound threshold established by the Department.

Model Name, Number	General Area	Amount
Dunham Bush Model #AD30A	Main Office West Wall	55 lb

ATTACHMENT LR-FI-C12

IDENTIFICATION OF ADDITIONAL APPLICABLE REQUIREMENTS

(NOTE: The attachment contains Permit No. 1050003-009-AV which is the latest major revision to the Title V Permit for the facility. Also contained in the attachment is Permit No. 1050003-004-AV which is the Notice of Administratively Corrected Title V Operation Permit, and whose changes are not incorporated into the current permit.)

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

NOTICE OF ADMINISTRATIVELY CORRECTED TITLE V OPERATION PERMIT

In the Matter of a Request for Administrative Correction:

Mr. Ronald W. Tomlin
Assistant Managing Director
Lakeland Electric and Water Utilities
501 E. Lemon St.
Lakeland, FL 33801-5079

FINAL Permit No.: 1050003-004-AV
Project No.: 1050003-004-AV
Larsen Power Plant

Enclosed is the ADMINISTRATIVELY CORRECTED page to the initial Title V operation permit, 1050003-004-AV for the operation of the Larsen Power Plant located at 2002 East Highway 92, Lakeland, Polk County. This correction is issued pursuant to Rule 62-210.360, Florida Administrative Code and Chapter 403, Florida Statutes (F.S.). This corrective action does not alter the effective dates of the existing permit.

Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, F.S., by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Legal Office; 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 of Appeal must be filed within 30 (thirty) days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

C. H. Fancy, P.E.,
Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF ADMINISTRATIVELY CORRECTED PERMIT (including the corrected page) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 12/28/99 to the persons listed or as otherwise noted:

Ronald Tomlin, Lakeland*
Kennard Kosky, P.E., KBN Engineering and Applied Sciences, Inc.
Farzie Shelton
Bill Thomas, P.E., FDEP, SWD
Gregg Worley, USEPA, Region 4

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52(7), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Barbara J. Bartlett 12/28/99
(Clerk) (Date)

ADMINISTRATIVE PERMIT CORRECTION
FINAL Permit No.: 1050003-004-AV
Larsen Power Plant

Subsection A. on Page 6 of 40 is hereby changed:

E.U. ID No.	Brief Description
-003	Fossil Fuel Fired Steam Generator #6

Fossil fuel fired steam generator #6 is a nominal 25 megawatt (electric) steam generator designated as Charles Larsen Memorial Power Plant Unit #6. This emission unit is fired on No. 6 fuel oil at a maximum heat input of ~~305.9~~ 372.4 MMBtu per hour, or natural gas at a maximum heat input of ~~286.5~~ 386.5 MMBtu per hour. Unit #6 began commercial service in 1959.

Specific Condition A.1. on Page 6 of 40 is hereby changed:

A.1. Permitted Capacity. The maximum operation heat input rate is as follows:

Unit No.	MMBtu/hr Heat Input	Fuel Type
6	~~286.5~~ 386.5 (HHV)	Natural Gas
	~~305.9~~ 372.4 (HHV)	No. 6 Fuel Oil

Compliance with the heat input limits shall be determined based on the higher heating value (HHV) of the fuels used and fuel flow meter data.
[Rules 62-4.160(2), 62-210.200(PTE) and 62-296.405, F.A.C.]

Subsection B. on Page 12 of 40 is hereby changed:

E.U. ID No.	Brief Description
-004	Fossil Fuel Fired Steam Generator #7

Fossil fuel fired steam generator #7 is a nominal 50 megawatt (electric) steam generator designated as Charles Larsen Memorial Power Plant Unit #7. This emission unit is fired on No. 6 fuel oil at a maximum heat input of ~~597.6~~ 728.0 MMBtu per hour, or natural gas at a maximum heat input of ~~615.6~~ 763.0 MMBtu per hour. Unit #7 began commercial service in 1966.

Specific Condition B.1. on Page 12 of 40 is hereby changed:

B.1. Permitted Capacity. The maximum operation heat input rate is as follows:

Unit No.	MMBtu/hr Heat Input	Fuel Type
7	~~615.6~~ 763.0 (HHV)	Natural Gas
	~~597.6~~ 728.0 (HHV)	No. 6 Fuel Oil

Compliance with the heat input limits shall be determined based on the higher heating value (HHV) of the fuels used and fuel flow meter data.
[Rules 62-4.160(2), 62-210.200(PTE) and 62-296.405, F.A.C.]

Lakeland Electric & Water Utilities
Charles Larsen Memorial Power Plant
Facility ID No.: 1050003
Polk County

Initial Title V Air Operation Permit
FINAL Title V Permit Revision No.: 1050003-009-AV

Permitting Authority:
State of Florida
Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation
Title V Section

Mail Station #5505
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Telephone: 850/488-1344
Fax: 850/922-6979

Compliance Authority:
Department of Environmental Protection
Southwest District Office
3804 Coconut Palm Drive
Tampa, Florida 33619-8218
Telephone: 813/744-6100
Fax: 813/744-6084

Initial Title V Air Operation Permit
FINAL Title V Permit Revision No.: 1050003-009-AV

Table of Contents

Permittee:
Lakeland Electric & Water Utilities
501 East Lemon Street
Lakeland, Florida 33801-5079

FINAL Title V Permit Revision No.: 1050003-009-AV
Facility ID No.: 1050003
SIC Nos.: 49, 4911
Project: Title V Air Operation Permit Revision

This permit revision is for the operation of an inlet fogging system on Unit 8 at the Charles Larsen Memorial Power Plant. This facility is located at 2002 East Highway 92, Lakeland, Polk County; UTM Coordinates: Zone 17, 408.9 km East and 3102.5 km North; Latitude: 28° 2' 56" North and Longitude: 81° 55' 25" West.

STATEMENT OF BASIS: This Title V air operation permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, 62-213, and 62-214. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents, attached hereto or on file with the permitting authority, in accordance with the terms and conditions of this permit.

Referenced attachments made a part of this permit:

Appendix U-1, List of Unregulated Emissions Units and/or Activities
Appendix I-1, List of Insignificant Emissions Units and/or Activities
Appendix TV-3, Title V Conditions (version dated 04/30/99)
APPENDIX SS-1, STACK SAMPLING FACILITIES (10/07/96)
FIGURE 1 - SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSIONS AND MONITORING SYSTEMS PERFORMANCE REPORT (40 CFR 60; July, 1996)
Phase II Acid Rain Application/Compliance Plan received December 26, 1995
Alternate Sampling Procedure: ASP Number 97-B-01

Effective Date: January 1, 1998
Title V Permit Revision Effective Date: July 18, 2001
Renewal Application Due Date: July 5, 2002
Expiration Date: December 31, 2002

Howard L. Rhodes, Director,
Division of Air Resources Management

HLR/sms/es

Section I. Facility Information.

Subsection A. Facility Description.

This facility consists of two fossil fuel-fired steam generators, one combined cycle combustion turbine and three simple cycle gas turbine peaking units. Natural gas and oil are the primary fuels. Also included in this permit are miscellaneous unregulated/exempt emissions units and/or activities.

Based on the initial Title V permit application received June 14, 1996, this facility is not a major source of HAPs.

Subsection B. Summary of Emissions Unit ID Nos. and Brief Descriptions.

Regulated Emissions Units and/or Activities

E.U. ID No.	Brief Description
-003	Fossil Fuel Fired Steam Generator #6
-004	Fossil Fuel Fired Steam Generator #7
-005	Peaking Gas Turbine #3
-006	Peaking Gas Turbine #2
-007	Peaking Gas Turbine #1
-008	Combined Cycle Combustion Turbine

Unregulated Emissions Units and/or Activities

E.U. ID No.	Brief Description
-009	Emergency generators
-010	General purpose engines
-011	Surface coatings with VOC content >5% by volume
-012	Sand Blasting
-013	Parts Washing

Please reference the Permit No., Facility ID No., and appropriate Emissions Unit(s) ID No(s). on all correspondence, test report submittals, applications, etc.

Subsection C. Relevant Documents.

The documents listed below are not a part of this permit; however, they are specifically related to this permitting action.

These documents are provided to the permittee for information purposes only:
Table 1-1, Summary of Air Pollutant Standards and Terms
Table 2-1, Summary of Compliance Requirements
Appendix A-1, Abbreviations, Acronyms, Citations, and Identification Numbers
Appendix H-1, Permit History / ID Number Changes

These documents are on file with the permitting authority:
Initial Title V Permit Application received June 14, 1996
Additional Information Request dated October 16, 1996
Additional Information Response received October 16, 1996
Update to Initial Title V Application dated February 7, 1997
Letter received May 13, 1997 from Ms. Farzie Shelton
Letter received June 17, 1997 from Ms. Farzie Shelton
Title V Permit Revision Application received November 15, 2000
Notification of change of Responsible Official received February 1, 2001

Section II. Facility-wide Conditions.

The following conditions apply facility-wide:

1. APPENDIX TV-3, TITLE V CONDITIONS, is a part of this permit.
{Permitting note: APPENDIX TV-3, TITLE V CONDITIONS, is distributed to the permittee only. Other persons requesting copies of these conditions shall be provided a copy when requested or otherwise appropriate.}

2. Not federally enforceable. General Pollutant Emission Limiting Standards. Objectionable Odor Prohibited. The permittee shall not cause, suffer, allow, or permit the discharge of air pollutants which cause or contribute to an objectionable odor.
[Rule 62-296.320(2), F.A.C.]

3. Prevention of Accidental Releases Section 112(r) of CAA. If required by 40 CFR 68 the permittee shall submit to the implementing agency:
a. a risk management plan (RMP) when, and if, such requirement becomes applicable, and
b. certification forms and/or RMPs according to the promulgated rule schedule.
[40 CFR 68]

4. Insignificant Emissions Units and/or Activities. Appendix I-1, List of Insignificant Emissions Units and/or Activities, is a part of this permit.
[Rules 62-213.440(1), 62-213.430(6), and 62-4.040(1)(b), F.A.C.]

5. Unregulated Emissions Units and/or Activities. Appendix U-1, List of Unregulated Emissions Units and/or Activities, is a part of this permit.
[Rule 62-213.440(1), F.A.C.]

6. General Pollutant Emission Limiting Standards. Volatile Organic Compounds (VOC) Emissions or Organic Solvents (OS) Emissions. The permittee shall allow no person to store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds (VOC) or organic solvents (OS) without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. The permittee shall keep containers of paint solvents and thinners closed.
[Rule 62-296.320(1)(a), F.A.C.]

7. General Particulate Emission Limiting Standards. General Visible Emissions Standard. Except for emissions units that are subject to a particulate matter or opacity limit set forth or established by rule and reflected by conditions in this permit, no person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity, the density of which is equal to or greater than that designated as Number 1 on the Ringelmann Chart (20 percent opacity). EPA Method 9 is the method of compliance pursuant to Chapter 62-297, F.A.C.
[Rule 62-296.320(4)(b)1. & 4., F.A.C.]

8. Not federally enforceable. The permittee shall take reasonable precautions to prevent emissions of unconfined particulate matter at this facility include: maintenance of paved areas, regular mowing of grass and care of vegetation, and limiting access to plant property of unnecessary vehicles.
[Rule 62-296.320(4)(c)2., F.A.C.,]

9. When appropriate, any recording, monitoring, or reporting requirements that are time-specific shall be in accordance with the effective date of the permit, which defines day one.
[Rule 62-213.440, F.A.C.]

10. Statement of Compliance. The annual statement of compliance pursuant to Rule 62-213.440(3), F.A.C., shall be submitted within 60 (sixty) days after the end of the calendar year.
{See condition 51., APPENDIX TV-3, TITLE V CONDITIONS}
[Rule 62-214.420(11), F.A.C.]

11. The permittee shall submit all compliance related notifications and reports required of this permit to the Department's Southwest District office:

Department of Environmental Protection
Southwest District Office
3804 Coconut Palm Drive
Tampa, Florida 33619-8218
Telephone: 813/744-6100
Fax: 813/744-6084

12. Any reports, data, notifications, certifications, and requests required to be sent to the United States Environmental Protection Agency, Region 4, should be sent to:

United States Environmental Protection Agency
Region 4
Air, Pesticides & Toxics Management Division
Air and EPRCA Enforcement Branch, Air Enforcement Section
61 Forsyth Street
Atlanta, Georgia 30303
Telephone: 404/562-9055
Fax: 404/562-9164

Section III. Emissions Units.

Subsection A. This section addresses the following emissions unit.

E.U. ID No.	**Brief Description**
-003	Fossil Fuel Fired Steam Generator #6

Fossil fuel fired steam generator #6 is a nominal 25 megawatt (electric) steam generator designated as Charles Larsen Memorial Power Plant Unit #6. This emission unit is fired on No. 6 fuel oil at a maximum heat input of 305.9 MMBtu per hour, or natural gas at a maximum heat input of 286.5 MMBtu per hour. Unit #6 began commercial service in 1959.

{Permitting note(s): The emissions unit is regulated under Rule 62-296.405, F.A.C., Fossil Fuel Steam Generators with more than 250 million Btu per Hour Heat Input.}

The following specific conditions apply to the emissions unit listed above:

Essential Potential to Emit (PTE) Parameters

A.1. Permitted Capacity. The maximum operation heat input rate is as follows:

Unit No.	MMBtu/hr Heat Input	Fuel Type
6	286.5 (HHV)	Natural Gas
	305.9 (HHV)	No. 6 Fuel Oil

Compliance with the heat input limits shall be determined based on the higher heating value (HHV) of the fuels used and fuel flow meter data.
[Rules 62-4.160(2), 62-210.200(PTE) and 62-296.405, F.A.C.]

A.2. Emissions Unit Operating Rate Limitation After Testing. See specific condition **A.21.**
[Rule 62-297.310(2), F.A.C.]

A.3. Methods of Operation. Fuel(s).
a. Startup: The only fuels allowed to be burned are propane, No. 2 fuel oil, natural gas, No. 6 fuel oil, or any combination of these fuels.
b. Normal: The only fuels allowed to be burned are natural gas, No. 6 fuel oil, or a combination of natural gas and No. 6 fuel oil. When a blend of liquid and gaseous fuel is fired, the heat input is prorated based on the percent heat input of each fuel.
[Rule 62-213.410, F.A.C.]

A.4. Hours of Operation. This emissions unit may operate continuously, i.e., 8,760 hours/year.
[Rule 62-210.200(PTE), F.A.C.]

Emission Limitations and Standards

{Permitting Note: The attached Table 1-1, Summary of Air Pollutant Standards and Terms, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.}

A.5. Visible Emissions. Visible emissions shall not exceed 20 percent opacity, except for one two-minute period per hour during which opacity shall not exceed 40 percent. Emissions units governed by this visible emissions limit shall compliance test for particulate matter emissions annually and as otherwise required by Chapter 62-297, F.A.C.
[Rule 62-296.405(1)(a), F.A.C.]

A.6. Visible Emissions - Soot Blowing and Load Change. Visible emissions shall not exceed 60 percent opacity during the 3-hours in any 24 hour period of excess emissions allowed for boiler cleaning (soot blowing) and load change.

A load change occurs when the operational capacity of a unit is in the 10 percent to 100 percent capacity range, other than startup or shutdown, which exceeds 10 percent of the unit's rated capacity and which occurs at a rate of 0.5 percent per minute or more.
[Rule 62-210.700(3), F.A.C.]

A.7. Particulate Matter. Particulate matter emissions shall not exceed 0.1 pound per million Btu heat input , as measured by applicable compliance methods.
[Rule 62-296.405(1)(b), F.A.C.]

A.8. Particulate Matter - Soot Blowing and Load Change. Particulate matter emissions shall not exceed an average of 0.3 pound per million Btu heat input during the 3-hours in any 24-hour period of excess emissions allowed for boiler cleaning (soot blowing) and load change.
[Rule 62-210.700(3), F.A.C.]

A.9. Sulfur Dioxide. When burning liquid fuel, sulfur dioxide emissions shall not exceed 2.75 pounds per million Btu heat input , as measured by applicable compliance methods.
[Rule 62-296.405(1) (c)1.j., F.A.C.]

A.10. Sulfur Dioxide - Sulfur Content. The No. 6 fuel oil sulfur content shall not exceed 2.50 percent, by weight. See specific condition **A.20.**
[Rule 62-296.405(1)(e)3., F.A.C.; and, requested in a letter dated February 7, 1997.]

Excess Emissions

A.11. Excess emissions resulting from malfunction shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration.
[Rule 62-210.700(1), F.A.C.]

A.12. Excess emissions resulting from startup or shutdown shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized.
[Rule 62-210.700(2), F.A.C.]

A.13. Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown or malfunction shall be prohibited.
[Rule 62-210.700(4), F.A.C.]

Monitoring of Operations

A.14. Sulfur Dioxide. **The permittee elected to demonstrate compliance by accepting a liquid fuel sulfur limit that will be verified with a fuel analysis provided by the vendor or the permittee upon each fuel delivery.** This protocol is allowed because the emissions unit does not have an operating flue gas desulfurization device. See specific conditions **A.10., A.19. and A.20.**
[Rule 62-296.405(1)(f)1.b., F.A.C.]

A.15. This emissions unit is also subject to the conditions contained in **Subsection E. Common Conditions.**

Test Methods and Procedures

{Permitting Note: The attached Table 2-1, Summary of Compliance Requirements, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.}

A.16. Visible emissions. The test method for visible emissions shall be DEP Method 9, incorporated in Chapter 62-297, F.A.C. A transmissometer may be used and calibrated according to Rule 62-297.520, F.A.C. See specific condition **A.17.**
[Rule 62-296.405(1)(e)1., F.A.C.]

A.17. DEP Method 9. The provisions of EPA Method 9 (40 CFR 60, Appendix A) are adopted by reference with the following exceptions:

1. EPA Method 9, Section 2.4, Recording Observations. Opacity observations shall be made and recorded by a certified observer at sequential fifteen second intervals during the required period of observation.
2. EPA Method 9, Section 2.5, Data Reduction. For a set of observations to be acceptable, the observer shall have made and recorded, or verified the recording of, at least 90 percent of the possible individual observations during the required observation period. For single-valued opacity standards (e.g., 20 percent opacity), the test result shall be the highest valid six-minute average for the set of observations taken. For multiple-valued opacity standards (e.g., 20 percent opacity, except that an opacity of 40 percent is permissible for not more than two minutes per hour) opacity shall be computed as follows:
    a. For the basic part of the standard (i.e., 20 percent opacity) the opacity shall be determined as specified above for a single-valued opacity standard.
    b. For the short-term average part of the standard, opacity shall be the highest valid short-term average (i.e., two-minute, three-minute average) for the set of observations taken.

In order to be valid, any required average (i.e., a six-minute or two-minute average) shall be based on all of the valid observations in the sequential subset of observations selected, and the selected subset shall contain at least 90 percent of the observations possible for the required averaging time. Each required average shall be calculated by summing the opacity value of each of the valid observations in the appropriate subset, dividing this sum by the number of valid observations in the subset, and rounding the result to the nearest whole number. The number of missing observations in the subset shall be indicated in parenthesis after the subset average value.
[Rule 62-297.401, F.A.C.]

A.18. Particulate Matter. The test methods for particulate emissions shall be EPA Methods 17, 5, 5B, or 5F, incorporated by reference in Chapter 62-297, F.A.C. The minimum sample volume shall be 30 dry standard cubic feet. EPA Method 5 may be used with filter temperature no more than 320 degrees Fahrenheit. For EPA Method 17, stack temperature shall be less than 375 degrees Fahrenheit. The owner or operator may use EPA Method 5 to demonstrate compliance. EPA Method 3 or 3A with Orsat analysis shall be used when the oxygen based F-factor, computed according to EPA Method 19, is used in lieu of heat input. Acetone wash shall be used with EPA Method 5 or 17.
[Rules 62-296.405(1)(e)2. and 62-297.401, F.A.C.]

A.19. Sulfur Dioxide. The test methods for sulfur dioxide emissions shall be EPA Methods 6, 6A, 6B, or 6C, incorporated by reference in Chapter 62-297, F.A.C. Fuel sampling and analysis may be used as an alternate sampling procedure if such a procedure is incorporated into the operation permit for the emissions unit. If the emissions unit obtains an alternate procedure under the provisions of Rule 62-297.620, F.A.C., the procedure shall become a condition of the emissions unit's permit. The Department will retain the authority to require EPA Method 6 or 6C if it has reason to believe that exceedences of the sulfur dioxide emissions limiting standard are occurring. Results of an approved fuel sampling and analysis program shall have the same effect as EPA Method 6 test results for purposes of demonstrating compliance or noncompliance with sulfur dioxide standards. **The permittee may use the EPA test methods, referenced above, to demonstrate compliance; however, as an alternate sampling procedure authorized by permit, the permittee elected to demonstrate compliance by accepting a liquid fuel sulfur limit that will be verified with a fuel analysis provided by the vendor upon each fuel delivery.** See specific conditions **A.10. and A.20.**
[Rules 62-213.440, 62-296.405(1)(e)3. and 62-297.401, F.A.C.]

A.20. The fuel sulfur content, percent by weight, for liquid fuels shall be evaluated using either ASTM D2622-92, ASTM D4294-90, both ASTM D4057-88 and ASTM D129-91, or the latest edition.
[Rules 62-213.440, 62-296.405(1)(e)3., 62-296.405(1)(f)1.b. and 62-297.440, F.A.C.]

A.21. Operating Rate During Testing. Testing of emissions shall be conducted with the emissions unit operating at 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impracticable to test at permitted capacity, an emissions unit may be tested at less than the minimum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test load until a new test is conducted. Once the emissions 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.]

A.22. General Compliance Testing. For excess emission limitations for particulate matter specified in Rule 62-210.700, F.A.C., a compliance test shall be conducted annually while the emissions unit is operating under soot blowing conditions in each federal fiscal year during which soot blowing is part of normal emissions unit operation, except that such test shall not be required in any federal fiscal year in which a fossil fuel steam generator does not burn liquid and/or solid fuel for more than 400 hours other than during startup.
[Rule 62-297.310(7)(a)2., F.A.C.]

A.23. By this permit, annual emissions compliance testing for visible emissions is not required for these emissions units while burning:

a. only gaseous fossil fuels; or

b. gaseous fossil fuels in combination with any amount of liquid and/or solid fuels for less than 400 hours per year; or

c. only liquid and/or solid fuels for less than 400 hours per year.

[Rule 62-297.310(7)(a)4., F.A.C.]

A.24. Annual and permit renewal compliance testing for particulate matter emissions is not required for these emissions units while burning:

a. only gaseous fossil fuels; or

b. gaseous fossil fuels in combination with any amount of liquid and/or solid fuels for less than 400 hours per year; or

c. only liquid and/or solid fuels for less than 400 hours per year.

[Rule 62-297.310(7)(a)3. & 5., F.A.C.; and, ASP Number 97-B-01]

A.25. Cold Standby. If the emissions unit is on cold standby when the annual compliance test is required, the compliance test may be postponed until after startup. Compliance testing shall be conducted within 30 days of startup.
[Rule 62-210.300(2)(a)4., F.A.C.; and, AO 53-175871.]

A.26. This emissions unit is also subject to the conditions contained in **Subsection E. Common Conditions.**

Record keeping and Reporting Requirements

A.27. Submit to the Department a written report of emissions in excess of emission limiting standards as set forth in Rule 62-296.405(1), F.A.C., for each calendar quarter. The nature and cause of the excess emissions shall be explained. This report does not relieve the owner or operator of the legal liability for violations. All recorded data shall be maintained on file by the Source for a period of five years.
[Rules 62-213.440 and 62-296.405(1)(g), F.A.C.]

A.28. This emissions unit is also subject to the conditions contained in **Subsection E. Common Conditions.**

Section III. Emissions Unit(s) and Conditions.

Subsection B. This section addresses the following emissions unit.

E.U. ID No.	Brief Description
-004	Fossil Fuel Fired Steam Generator #7

Fossil fuel fired steam generator #7 is a nominal 50 megawatt (electric) steam generator designated as Charles Larsen Memorial Power Plant Unit #7. This emission unit is fired on No. 6 fuel oil at a maximum heat input of 597.6 MMBtu per hour, or natural gas at a maximum heat input of 615.6 MMBtu per hour. Unit #7 began commercial service in 1966.

{Permitting note(s): The emissions unit is regulated under Acid Rain, Phase II and Rule 62-296.405, F.A.C., Fossil Fuel Steam Generators with more than 250 million Btu per Hour Heat Input.}

The following specific conditions apply to the emissions unit listed above:

Essential Potential to Emit (PTE) Parameters

B.1. Permitted Capacity. The maximum operation heat input rate is as follows:

Unit No.	MMBtu/hr Heat Input	Fuel Type
7	615.6 (HHV)	Natural Gas
	597.6 (HHV)	No. 6 Fuel Oil

Compliance with the heat input limits shall be determined based on the higher heating value (HHV) of the fuels used and fuel flow meter data.
[Rules 62-4.160(2), 62-210.200(PTE) and 62-296.405, F.A.C.]

B.2. Emissions Unit Operating Rate Limitation After Testing. See specific condition **B.21.**
[Rule 62-297.310(2), F.A.C.]

B.3. Methods of Operation. Fuel(s).
a. Startup: The only fuels allowed to be burned are propane, No. 2 fuel oil, natural gas, No. 6 fuel oil, or any combination of these fuels.
b. Normal: The only fuels allowed to be burned are natural gas, No. 6 fuel oil, or a combination of natural gas and No. 6 fuel oil. When a blend of liquid and gaseous fuel is fired, the heat input is prorated based on the percent heat input of each fuel.
[Rule 62-213.410, F.A.C.]

B.4. Hours of Operation. This emissions unit may operate continuously, i.e., 8,760 hours/year.
[Rule 62-210.200(PTE), F.A.C.]

Emission Limitations and Standards

{Permitting Note: The attached Table 1-1, Summary of Air Pollutant Standards and Terms, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.}

B.5. Visible Emissions. Visible emissions shall not exceed 20 percent opacity, except for one two-minute period per hour during which opacity shall not exceed 40 percent. Emissions units governed by this visible emissions limit shall compliance test for particulate matter emissions annually and as otherwise required by Chapter 62-297, F.A.C.
[Rule 62-296.405(1)(a), F.A.C.]

B.6. Visible Emissions - Soot Blowing and Load Change. Visible emissions shall not exceed 60 percent opacity during the 3-hours in any 24 hour period of excess emissions allowed for boiler cleaning (soot blowing) and load change.
A load change occurs when the operational capacity of a unit is in the 10 percent to 100 percent capacity range, other than startup or shutdown, which exceeds 10 percent of the unit's rated capacity and which occurs at a rate of 0.5 percent per minute or more.
[Rule 62-210.700(3), F.A.C.]

B.7. Particulate Matter. Particulate matter emissions shall not exceed 0.1 pound per million Btu heat input , as measured by applicable compliance methods.
[Rule 62-296.405(1)(b), F.A.C.]

B.8. Particulate Matter - Soot Blowing and Load Change. Particulate matter emissions shall not exceed an average of 0.3 pound per million Btu heat input during the 3-hours in any 24-hour period of excess emissions allowed for boiler cleaning (soot blowing) and load change.
[Rule 62-210.700(3), F.A.C.]

B.9. Sulfur Dioxide. When burning liquid fuel, sulfur dioxide emissions shall not exceed 2.75 pounds per million Btu heat input , as measured by applicable compliance methods.
[Rule 62-296.405(1) (c)1.j., F.A.C.]

B.10. Sulfur Dioxide - Sulfur Content. The No. 6 fuel oil sulfur content shall not exceed 2.50 percent, by weight. See specific condition **B.20.**
[Rule 62-296.405(1)(e)3., F.A.C.; and, requested in a letter dated February 7, 1997.]

Excess Emissions

B.11. Excess emissions resulting from malfunction shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration.
[Rule 62-210.700(1), F.A.C.]

B.12. Excess emissions resulting from startup or shutdown shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized.
[Rule 62-210.700(2), F.A.C.]

B.13. Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown or malfunction shall be prohibited.
[Rule 62-210.700(4), F.A.C.]

Monitoring of Operations

B.14. Sulfur Dioxide. **The permittee elected to demonstrate compliance by accepting a liquid fuel sulfur limit that will be verified with a fuel analysis provided by the vendor or the permittee upon each fuel delivery.** This protocol is allowed because the emissions unit does not have an operating flue gas desulfurization device. See specific conditions **B.10., B.19. and B.20.**
[Rule 62-296.405(1)(f)1.b., F.A.C.]

B.15. This emissions unit is also subject to the conditions contained in **Subsection E. Common Conditions.**

Test Methods and Procedures

{Permitting Note: The attached Table 2-1, Summary of Compliance Requirements, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.}

B.16. Visible emissions. The test method for visible emissions shall be DEP Method 9, incorporated in Chapter 62-297, F.A.C. A transmissometer may be used and calibrated according to Rule 62-297.520, F.A.C. See specific condition **B.17.**
[Rule 62-296.405(1)(e)1., F.A.C.]

B.17. DEP Method 9. The provisions of EPA Method 9 (40 CFR 60, Appendix A) are adopted by reference with the following exceptions:

1. EPA Method 9, Section 2.4, Recording Observations. Opacity observations shall be made and recorded by a certified observer at sequential fifteen second intervals during the required period of observation.
2. EPA Method 9, Section 2.5, Data Reduction. For a set of observations to be acceptable, the observer shall have made and recorded, or verified the recording of, at least 90 percent of the possible individual observations during the required observation period. For single-valued opacity standards (e.g., 20 percent opacity), the test result shall be the highest valid six-minute average for the set of observations taken. For multiple-valued opacity standards (e.g., 20 percent opacity, except that an opacity of 40 percent is permissible for not more than two minutes per hour) opacity shall be computed as follows:
    a. For the basic part of the standard (i.e., 20 percent opacity) the opacity shall be determined as specified above for a single-valued opacity standard.
    b. For the short-term average part of the standard, opacity shall be the highest valid short-term average (i.e., two-minute, three-minute average) for the set of observations taken.

In order to be valid, any required average (i.e., a six-minute or two-minute average) shall be based on all of the valid observations in the sequential subset of observations selected, and the selected subset shall contain at least 90 percent of the observations possible for the required averaging time. Each required average shall be calculated by summing the opacity value of each of the valid observations in the appropriate subset, dividing this sum by the number of valid observations in the subset, and rounding the result to the nearest whole number. The number of missing observations in the subset shall be indicated in parenthesis after the subset average value.
[Rule 62-297.401, F.A.C.]

B.18. Particulate Matter. The test methods for particulate emissions shall be EPA Methods 17, 5, 5B, or 5F, incorporated by reference in Chapter 62-297, F.A.C. The minimum sample volume shall be 30 dry standard cubic feet. EPA Method 5 may be used with filter temperature no more than 320 degrees Fahrenheit. For EPA Method 17, stack temperature shall be less than 375 degrees Fahrenheit. The owner or operator may use EPA Method 5 to demonstrate compliance. EPA Method 3 or 3A with Orsat analysis shall be used when the oxygen based F-factor, computed according to EPA Method 19, is used in lieu of heat input. Acetone wash shall be used with EPA Method 5 or 17.
[Rules 62-296.405(1)(e)2. and 62-297.401, F.A.C.]

B.19. Sulfur Dioxide. The test methods for sulfur dioxide emissions shall be EPA Methods 6, 6A, 6B, or 6C, incorporated by reference in Chapter 62-297, F.A.C. Fuel sampling and analysis may be used as an alternate sampling procedure if such a procedure is incorporated into the operation permit for the emissions unit. If the emissions unit obtains an alternate procedure under the provisions of Rule 62-297.620, F.A.C., the procedure shall become a condition of the emissions unit's permit. The Department will retain the authority to require EPA Method 6 or 6C if it has reason to believe that exceedences of the sulfur dioxide emissions limiting standard are occurring. Results of an approved fuel sampling and analysis program shall have the same effect as EPA Method 6 test results for purposes of demonstrating compliance or noncompliance with sulfur dioxide standards. **The permittee may use the EPA test methods, referenced above, to demonstrate compliance; however, as an alternate sampling procedure authorized by permit, the permittee elected to demonstrate compliance by accepting a liquid fuel sulfur limit that will be verified with a fuel analysis provided by the vendor upon each fuel delivery.** See specific conditions **B.10. and B.20.**
[Rules 62-213.440, 62-296.405(1)(e)3. and 62-297.401, F.A.C.; and, AO 53-175870]

B.20. The fuel sulfur content, percent by weight, for liquid fuels shall be evaluated using either ASTM D2622-92, ASTM D4294-90, both ASTM D4057-88 and ASTM D129-91, or the latest edition.
[Rules 62-213.440, 62-296.405(1)(e)3., 62-296.405(1)(f)1.b. and 62-297.440, F.A.C.]

B.21. Operating Rate During Testing. Testing of emissions shall be conducted with the emissions unit operating at 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impracticable to test at permitted capacity, an emissions unit may be tested at less than the minimum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test load until a new test is conducted. Once the emissions 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.]

B.22. General Compliance Testing. For excess emission limitations for particulate matter specified in Rule 62-210.700, F.A.C., a compliance test shall be conducted annually while the emissions unit is operating under soot blowing conditions in each federal fiscal year during which soot blowing is part of normal emissions unit operation, except that such test shall not be required in any federal fiscal year in which a fossil fuel steam generator does not burn liquid and/or solid fuel for more than 400 hours other than during startup.
[Rule 62-297.310(7)(a)2., F.A.C.]

B.23. By this permit, annual emissions compliance testing for visible emissions is not required for these emissions units while burning:

a. only gaseous fossil fuels; or

b. gaseous fossil fuels in combination with any amount of liquid and/or solid fuels for less than 400 hours per year; or

c. only liquid and/or solid fuels for less than 400 hours per year.

[Rule 62-297.310(7)(a)4., F.A.C.]

B.24. Annual and permit renewal compliance testing for particulate matter emissions is not required for these emissions units while burning:

a. only gaseous fossil fuels; or

b. gaseous fossil fuels in combination with any amount of liquid and/or solid fuels for less than 400 hours per year; or

c. only liquid and/or solid fuels for less than 400 hours per year.

[Rule 62-297.310(7)(a)3. & 5., F.A.C.; and, ASP Number 97-B-01]

B.25. Cold Standby. If the emissions unit is on cold standby when the annual compliance test is required, the compliance test may be postponed until after startup. Compliance testing shall be conducted within 30 days of startup.
[Rule 62-210.300(2)(a)4., F.A.C.]

B.26. This emissions unit is also subject to the conditions contained in **Subsection E. Common Conditions.**

Record keeping and Reporting Requirements

B.27. Submit to the Department a written report of emissions in excess of emission limiting standards as set forth in Rule 62-296.405(1), F.A.C., for each calendar quarter. The nature and cause of the excess emissions shall be explained. This report does not relieve the owner or operator of the legal liability for violations. All recorded data shall be maintained on file by the Source for a period of five years.
[Rules 62-213.440 and 62-296.405(1)(g), F.A.C.]

B.28. This emissions unit is also subject to the conditions contained in **Subsection E. Common Conditions.**
[Rule 62-296.405(e)3., F.A.C.]

Section III. Emissions Unit(s) and Conditions.

Subsection C. This section addresses the following emissions units.

E.U. ID No.	Brief Description
-005	Peaking Gas Turbine #3
-006	Peaking Gas Turbine #2
-007	Peaking Gas Turbine #1

The gas turbine peaking units are fired with natural gas, or No. 2 fuel oil with a maximum sulfur content of 0.50 percent by weight. The maximum heat input rate for each gas turbine is 209 MMBtu per hour and each unit is rated at 11.5 megawatts (electric). Emissions from the gas turbines are uncontrolled. Turbines #1, #2 and #3 began commercial service in 1962.

{Permitting notes: These emissions units are regulated under Rule 62-210.300, F.A.C., Permits Required. These units are not subject to 40 CFR 60, Subpart GG, Standards of Performance for New Stationary Gas Turbines. Each combustion turbine has its own stack.}

The following specific conditions apply to the emissions units listed above:

Essential Potential to Emit (PTE) Parameters

C.1. Permitted Capacity. The maximum operation heat input rates, at an inlet temperature of 20 degrees F when firing natural gas and at an inlet temperature of 25 degrees F when firing No. 2 fuel oil, are as follows:

Unit No.	MMBtu/hr Heat Input	Fuel Type
3	209	Natural Gas
	209	No. 2 Fuel Oil
2	209	Natural Gas
	209	No. 2 Fuel Oil
1	209	Natural Gas
	209	No. 2 Fuel Oil

[Rules 62-4.160(2) and 62-210.200(PTE), F.A.C.]

C.2. Emissions Unit Operating Rate Limitation After Testing. See specific condition **C.13.**
[Rule 62-297.310(2), F.A.C.]

C.3. Methods of Operation - Fuels. Only natural gas or distillate (No. 2) fuel oil shall be fired in the turbines.
[Rules 62-4.160(2) and 62-213.440(1), F.A.C.]

C.4. Hours of Operation. These emissions unit(s) may operate continuously, i.e., 8,760 hours/year.
[Rules 62-4.160(2) and 62-210.200(PTE), F.A.C.; and, AO 53-238714]

Emission Limitations and Standards

{Permitting Note: The attached Table 1-1, Summary of Air Pollutant Standards and Terms, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.}

C.5. Visible Emissions. Visible emissions from each turbine shall not be equal to or greater than 20 percent opacity.
[Rule 62-296.320(4)(b)1., F.A.C.; and, AO 53-238714]

C.6. Not federally enforceable. Sulfur Dioxide - Sulfur Content. The sulfur content of the No. 2 fuel oil shall not exceed 0.5 percent, by weight.
[AO 53-238714]

Excess Emissions

C.7. Excess emissions from these emissions units resulting from startup, shutdown or malfunction shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration.
[Rule 62-210.700(1), F.A.C.]

C.8. Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown or malfunction shall be prohibited.
[Rule 62-210.700(4), F.A.C.]

Monitoring of Operations

C.9. The permittee shall demonstrate compliance with the liquid fuel sulfur limit by means of a fuel analysis provided by the vendor or the permittee upon each fuel delivery. See specific condition **C.12.**
[Rule 62-213.440, F.A.C.]

C.10. 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.]

Test Methods and Procedures

{Permitting Note: The attached Table 2-1, Summary of Compliance Requirements, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.}

C.11. The test method for visible emissions shall be EPA Method 9, adopted and incorporated by reference in Rule 62-204.800, F.A.C., and referenced in Chapter 62-297, F.A.C.
[Rules 62-204.800, 62-296.320(4)(b)4.a. and 62-297.401, F.A.C.]

C.12. The fuel sulfur content, percent by weight, for liquid fuels shall be evaluated using either ASTM D2622-92, ASTM D4294-90, both ASTM D4057-88 and ASTM D129-91, or the latest edition.
[Rules 62-213.440 and 62-297.440, F.A.C.]

C.13. Operating Rate During Testing. **Not federally enforceable.**
a. Testing of emissions shall be conducted with each emissions unit operating at permitted capacity, which is defined as 95-100 percent of the manufacturer's rated heat input achievable for the average ambient (or conditioned) air temperature during the test.
b. If it is impracticable to test at capacity, then sources may be tested at less than capacity. In such cases, the entire heat input vs. inlet temperature curve will be adjusted by the increment equal to the difference between the design heat input value and 105 percent of the value reached during the test. Data, curves, and calculations necessary to demonstrate the heat input rate correction at both design and test conditions shall be submitted to the Department with the compliance test report.
[Requested in a letter dated February 7, 1997.]

C.14. Applicable Test Procedures.
(a) Required Sampling Time.
2. Opacity Compliance Tests. When either EPA Method 9 or DEP Method 9 is specified as the applicable opacity test method, the required minimum period of observation for a compliance test shall be sixty (60) minutes for emissions units which emit or have the potential to emit 100 tons per year or more of particulate matter, and thirty (30) minutes for emissions units which have potential emissions less than 100 tons per year of particulate matter and are not subject to a multiple-valued opacity standard. The opacity test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. Exceptions to these requirements are as follows:
c. The minimum observation period for opacity tests conducted by employees or agents of the Department to verify the day-to-day continuing compliance of a unit or activity with an applicable opacity standard shall be twelve minutes.
[Rule 62-297.310(4)(a)2., F.A.C.]

C.15. Frequency of Compliance Tests. The following provisions apply only to those emissions units that are subject to an emissions limiting standard for which compliance testing is required.
(a) General Compliance Testing.
3. The owner or operator of an emissions unit that is subject to any emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining a renewed operation permit. Emissions units that are required to conduct an annual compliance test may submit the most recent annual compliance test to satisfy the requirements of this provision. In renewing an air operation permit pursuant to Rule 62-210.300(2)(a)3.b., c., or d., F.A.C., the Department shall not require submission of emission compliance test results for any emissions unit that, during the year prior to renewal:
a. Did not operate; or
b. In the case of a fuel burning emissions unit, burned liquid fuel for a total of no more than 400 hours.
4. During each federal fiscal year (October 1 - September 30), unless otherwise specified by rule, order, or permit, the owner or operator of each emissions unit shall have a formal compliance test conducted for:
a. Visible emissions, if there is an applicable standard;
8. Any combustion turbine that does not operate for more than 400 hours per year shall conduct a visible emissions compliance test once per each five-year period, coinciding with the term of its air operation permit.

9. 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.

(b) 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 may 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.

(c) Waiver of Compliance Test Requirements. If the owner or operator of an emissions unit that is subject to a compliance test requirement demonstrates to the Department, pursuant to the procedure established in Rule 62-297.620, F.A.C., that the compliance of the emissions unit with an applicable weight emission limiting standard can be adequately determined by means other than the designated test procedure, such as specifying a surrogate standard of no visible emissions for particulate matter sources equipped with a bag house or specifying a fuel analysis for sulfur dioxide emissions, the Department shall waive the compliance test requirements for such emissions units and order that the alternate means of determining compliance be used, provided, however, the provisions of Rule 62-297.310(7)(b), F.A.C., shall apply.

[Rule 62-297.310(7), F.A.C.; SIP approved; and, AO 53-238714]

C.16. Visible Emissions Testing - Annual. By this permit, annual emissions compliance testing for visible emissions is not required for these emissions units while burning:

a. only gaseous fuels; or

b. gaseous fuels in combination with any amount of liquid fuels for less than 400 hours per year; or

c. only liquid fuels for less than 400 hours per year.

[Rules 62-297.310(7)(a)4. & 8., F.A.C.]

Recordkeeping and Reporting Requirements

C.17. Malfunction Reporting. In the case of excess emissions resulting from malfunctions, each owner or operator shall notify the Department 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.]

C.18. Test Reports.
(a) 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.
(b) 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.
[Rule 62-297.310(8), F.A.C.]

Section III. Emissions Unit(s) and Conditions.

Subsection D. This section addresses the following emissions unit.

E.U. ID No.	Brief Description
-008	Combined Cycle Combustion Turbine

The emission unit is a 120 megawatt combined cycle combustion gas turbine with a heat recovery steam generator (HRSG) designated as Larsen Unit #8. The combustion turbine fires natural gas as the primary fuel, and No. 2 distillate oil with a maximum sulfur content of 0.20 percent by weight as a limited auxiliary fuel. The combustion turbine is a GE Model PG7111 (EA) Frame 7 unit equipped with water injection to reduce nitrogen oxides emissions and an inlet fogger system. The HRSG powers an existing steam turbine. The emissions unit can exhaust through the HRSG or through a by-pass stack. Turbine #8 began commercial service in July, 1992.

{Permitting note(s): The emissions unit is regulated under Acid Rain, Phase II; NSPS - 40 CFR 60, Subpart GG, Standards of Performance for Stationary Gas Turbines; adopted and incorporated by reference in Rule 62-204.800(7), F.A.C.; Prevention of Significant Deterioration (PSD) in Rule 62-212.400, F.A.C.; and Best Available Control Technology (BACT), dated July 26, 1991, in Rule 62-212.410, F.A.C.}

The following conditions apply to the emissions unit(s) listed above:

Essential Potential to Emit (PTE) Parameters

D.1. Permitted Capacity. The maximum process/operation rate, at an inlet temperature of 25 degrees F, is 1055 MMBtu per hour (lower heating value) heat input firing natural gas or 1040 MMBtu per hour (lower heating value) heat input firing No. 2 distillate oil. The inlet fogger system may be operated any time Unit #8 is in operation.
[Rules 62-4.160(2) and 62-210.200(PTE), F.A.C.]

D.2. Methods of Operation. Fuels.
a. This emissions unit fires natural gas as the primary fuel and No. 2 distillate oil as the secondary fuel.
b. The consumption of No. 2 distillate oil shall not exceed 8,190 gallons per hour and 23,914,800 gallons per year.
c. The maximum annual firing of No. 2 distillate oil shall not exceed 1/3 of the annual capacity factor.
d. The maximum sulfur content of the No. 2 distillate oil shall not exceed 0.20 percent by weight.
[Rules 62-210.200(PTE), 62-212.400, and 62-212.410, F.A.C.; and, PSD-FL-166]

D.3. Hours of Operation. This emissions unit may operate continuously, i.e., 8,760 hours/year. [Rule 62-210.200(PTE), F.A.C.]

Emission Limitations and Standards

{Permitting note: Table 1-1, Summary of Air Pollutant Standards and Terms, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.}

D.4. Nitrogen Oxides. The NO_X emissions shall not exceed 25 ppmv at 15 percent oxygen on a dry basis and 425 tons per year when firing natural gas.
[Rule 62-212.400(6), F.A.C.; and, PSD-FL-166]

D.5. Nitrogen Oxides. The NO_X emissions shall not exceed 42 ppmv at 15 percent oxygen on a dry basis and 244 tons per year when firing No. 2 distillate oil.
[Rule 62-212.400(6), F.A.C.; and, PSD-FL-166]

{Permitting note: Since the BACT limit established for nitrogen oxides is more stringent than the NSPS limit, compliance with the nitrogen oxides BACT limits of specific conditions **D4.** and **D.5.** is assumed to show compliance with the nitrogen oxides limit of 40 CFR 60.332.}

D.6. Sulfur Dioxide. The SO_2 emissions shall not exceed 8.6 tons per year when firing natural gas.
[Rule 62-212.400(6), F.A.C.; and, PSD-FL-166]

D.7. Sulfur Dioxide. The SO_2 emissions shall not exceed 307 tons per year when firing No. 2 distillate oil. The maximum sulfur content of the No. 2 distillate oil shall not exceed 0.20 percent by weight.
[Rule 62-212.400(6), F.A.C.; and, PSD-FL-166]

D.8. PM/PM_{10}. The PM/PM_{10} emissions shall not exceed 0.006 pound per MMBtu heat input and 22 tons per year when firing natural gas.
[Rule 62-212.400(6), F.A.C.; and, PSD-FL-166]

D.9. PM/PM_{10}. The PM/PM_{10} emissions shall not exceed 0.025 pound per MMBtu heat input and 22 tons per year when firing No. 2 distillate oil.
[Rule 62-212.400(6), F.A.C.; and, PSD-FL-166]

D.10. Sulfuric Acid Mist. The sulfuric acid mist emissions shall not exceed 0.8 ton per year when firing natural gas.
[Rule 62-212.400(6), F.A.C.; and, PSD-FL-166]

D.11. Sulfuric Acid Mist. The sulfuric acid mist emissions shall not exceed 9.13 ton per year when firing No. 2 distillate oil. The maximum sulfur content of the No. 2 distillate oil shall not exceed 0.20 percent by weight.
[Rule 62-212.400(6), F.A.C.; and, PSD-FL-166]

D.12. Visible Emissions. Visible emissions shall not exceed 10 percent opacity.
[Requested in initial Title V permit application dated June 14, 1996; and, AC 53-190437 and PSD-FL-166]

D.13. Volatile Organic Compounds. Volatile Organic Compounds emissions shall not exceed 9 tons per year when firing natural gas or 22 tons per year when firing oil.
[AC 53-190437 and PSD-FL-166]

D.14. Carbon Monoxide. Carbon Monoxide emissions shall not exceed 25 ppmv at 15 percent oxygen on a dry basis and 232 tons per year when firing natural gas or 79 tons per year when firing oil.
[AC 53-190437 and PSD-FL-166]

D.15. Mercury. Mercury emissions shall not exceed 3.0×10^{-6} pounds per million Btu heat input and 0.003 ton per year when firing oil.
[AC 53-190437 and PSD-FL-166]

D.16. Lead. Lead emissions shall not exceed 2.8×10^{-5} pounds per million Btu heat input and 0.03 ton per year when firing oil.
[AC 53-190437 and PSD-FL-166]

D.17. Beryllium. Beryllium emissions shall not exceed 2.5×10^{-6} pounds per million Btu heat input and 0.003 ton per year when firing oil.
[AC 53-190437 and PSD-FL-166]

Excess Emissions

D.18. Excess emissions from this emissions unit resulting from startup, shutdown or malfunction shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration.
[Rule 62-210.700(1), F.A.C.]

D.19. Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown or malfunction shall be prohibited.
[Rule 62-210.700(4), F.A.C.]

Monitoring of Operations

D.20. At all times, including periods of startup, shutdown and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.
[40 CFR 60.11(d)]

D.21. The owner or operator of any stationary gas turbine subject to the provisions of 40 CFR 60, Subpart GG and using water injection to control NO_X emissions shall operate a continuous monitoring system to monitor and record the fuel consumption and the ratio of water to fuel being fired in the turbine. This system shall be accurate to within $\pm$5.0 percent and shall be approved by the Administrator.
[40 CFR 60.334(a)]

D.22. The owner or operator of any stationary gas turbine subject to the provisions of 40 CFR 60, Subpart GG shall monitor sulfur content and nitrogen content of the fuel being fired in the turbine. The frequency of determination of these values shall be as follows:
(1) If the turbine is supplied its fuel from a bulk storage tank, the values shall be determined on each occasion that fuel is transferred to the storage tank from any other source.
(2) If the turbine is supplied its fuel without intermediate bulk storage the values shall be determined and recorded daily. Owners, operators or fuel vendors may develop custom schedules for determination of the values based on the design and operation of the affected facility and the characteristics of the fuel supply. These custom schedules shall be substantiated with data and must be approved by the Administrator before they can be used to comply with 40 CFR 60.334(b).
[40 CFR 60.334(b)(1) & (2)]

{Permitting note: **No. 2 distillate oil is only supplied with intermediate bulk storage; and, a custom fuel schedule has been established for natural gas.**}

D.23. This emissions unit is also subject to the conditions contained in **Subsection E. Common Conditions.**

D.24. The permittee shall monitor sulfur content and nitrogen content of natural gas fired in the turbine as follows:

Custom Fuel Monitoring Schedule for Natural Gas

1. Monitoring of fuel nitrogen content shall not be required when firing natural gas.

2. Sulfur Monitoring:
   a. Analysis for fuel sulfur content of the natural gas shall be conducted using one of the EPA approved ASTM reference methods for the measurement of sulfur in gaseous fuels, or an approved alternative method. The reference methods are ASTM D1072-90(94)E-1; ASTM D3031-81(86); ASTM D3246-92; and ASTM D4084-94 as referenced in 40 CFR 60.335(b)(2).
   b. Sulfur monitoring shall be conducted once per quarter for six quarters, beginning on July 1, 1996.
   c. If the sulfur monitoring required for natural gas by 2(b) above shows little variability and the calculated sulfur dioxide emissions represents consistent compliance with the sulfur dioxide emission limits specified under 40 CFR 60.333, sample analysis shall be conducted twice per year. This monitoring shall be conducted during the first and third quarters of each calendar year.
   d. Should any sulfur analysis as required by items 2(b) or 2(c) above indicate noncompliance with 40 CFR 60.333 the City will notify the Department of Environmental Protection of such excess emission and the customized fuel monitoring schedule shall be re-examined.

3. The City will notify the Department of Environmental Protection of any change in natural gas supply for reexamination of this monitoring schedule. A substantial change in natural gas quality (i.e., sulfur content varying greater than 10 grains/1000 cf gas) shall be considered as a change in natural gas supply. Sulfur content of the natural gas will be monitored weekly during the interim period when this monitoring schedule is being reexamined.

4. Records of sampling analysis and natural gas supply pertinent to this monitoring schedule shall be retained by the City for a period of five (5) years, and shall be available for inspection by appropriate regulatory personnel.

5. The City will obtain the sulfur content of the natural gas from Florida Gas Transmission Company.

[40 CFR 60.334(b)(2); Rule 62-213.400, F.A.C.; and, AC 53-190437 and PSD-FL-166]

Test Methods and Procedures

{Permitting note: Table 2-1, Summary of Compliance Requirements, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.}

D.25. To compute the nitrogen oxides emissions, the owner or operator shall use analytical methods and procedures that are accurate to within 5 percent and are approved by the Department to determine the nitrogen content of the fuel being fired.
[40 CFR 60.335(a)]

D.26. When determining compliance with 40 CFR 60.332, Subpart GG - Standards of Performance for Stationary Gas Turbines, the monitoring device of 60.334(a) shall be used to determine the fuel consumption and the water-to-fuel ratio necessary to comply with the permitted NO_X standard at 30, 50, 75, and 100 percent of peak load or at four points in the normal operating range of the gas turbine, including the minimum point in the range and peak load. All loads shall be corrected to ISO conditions using the appropriate equations supplied by the manufacturer.
[40 CFR 60.335(c)(2)]

D.27. The owner or operator shall determine compliance with the nitrogen oxides and sulfur dioxide standards in 40 CFR 60.332 as follows:
c. U.S. EPA Method 20 (40 CFR 60, Appendix A) shall be used to determine the nitrogen oxides, sulfur dioxide, and oxygen concentrations. The span values shall be 300 ppm of nitrogen oxide and 21 percent oxygen. The NO_X emissions shall be determined at each of the load conditions specified in 40 CFR 60.335(c)(2).
[40 CFR 60.335(c)(3)]

D.28. Initial compliance with the nitrogen oxides limit pursuant to 40 CFR 60.8 was conducted August 3-7, 1992. For annual compliance purposes, compliance with the nitrogen oxides limits of specific conditions **D.4.** and **D.5.** will be determined using EPA Method 20 and testing at capacity as defined by specific condition **D.36.** Correction to ISO conditions is not required for these annual compliance tests.
[Rule 62-297.310, F.A.C.]

D.29. The owner or operator shall determine compliance with the sulfur content standard of 0.20 percent, by weight, as follows: ASTM D 2880-96 shall be used to determine the sulfur content of liquid fuels and ASTM D 1072-90(94)E-1, D 3031-81(86), D 4084-94, or D 3246-92 shall be used for the sulfur content of gaseous fuels (incorporated by reference-see 40 CFR 60.17). The applicable ranges of some ASTM methods mentioned above are not adequate to measure the levels of sulfur in some fuel gases. Dilution of samples before analysis (with verification of the dilution ratio) may be used, subject to the approval of the Administrator.
[40 CFR 60.335(d)]

D.30. To meet the requirements of 40 CFR 60.334(b), the owner or operator shall use the methods specified in 40 CFR 60.335 (a) and 40 CFR 60.335(d) of 40 CFR 60.335 to determine the nitrogen and sulfur contents of the fuel being burned. The analysis may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency.
[40 CFR 60.335(e)]

D.31. PM/PM_{10}. The test methods for PM/PM_{10} emissions when firing oil shall be EPA Methods 5, 5B or 17, incorporated by reference in Chapter 62-297, F.A.C. The opacity emissions test may be used unless 10% opacity is exceeded.
[Rules 62-213.440, 62-297.310, and 62-297.401, F.A.C.; and, PSD-FL-166]

D.32. Sulfuric Acid Mist. Compliance with the sulfuric acid mist standard shall be demonstrated by using natural gas or 0.2 percent sulfur, by weight, No. 2 distillate oil.
[Rules 62-213.440, 62-297.310, and 62-297.401, F.A.C.; and, PSD-FL-166]

D.33. Visible Emissions. The test method for visible emissions shall be EPA Method 9, incorporated by reference in Chapter 62-297, F.A.C.
[Rules 62-213.440, 62-297.310, and 62-297.401, F.A.C.; and, PSD-FL-166]

D.34. Volatile Organic Compounds, Carbon Monoxide, Mercury, Lead and Beryllium. The initial compliance test requirement for these pollutants has been satisfied and no further tests are required.
[AC 53-190437 and PSD-FL-166]

D.35. Frequency of Compliance Tests. General Compliance Testing. Any combustion turbine that does not operate for more than 400 hours per year shall conduct a visible emissions compliance test once per each five-year period, coinciding with the term of its air operation permit.
[Rule 62-297.310(7)(a)8., F.A.C.]

D.36. Operating Rate During Testing. **Not federally enforceable.** Testing of emissions shall be conducted with the source operating at capacity. Capacity is defined as 95-100 percent of the manufacturer's rated heat input achievable for the average ambient (or conditioned) air temperature during the test. If it is impracticable to test at capacity, then sources may be tested at less than capacity. In such cases, the entire heat input vs. inlet temperature curve will be adjusted by the increment equal to the difference between the design heat input value and 105 percent of the value reached during the test. Data, curves, and calculations necessary to demonstrate the heat input rate correction at both design and test conditions shall be submitted to the Department with the compliance test report. When testing shows that NO_X emissions exceed the standard when operating at capacity, the permittee shall recalibrate the NO_X emission control system using emission testing at four loads as required in Subpart GG.
[Requested in a letter dated February 7, 1997.]

D.37. This emissions unit is also subject to the conditions contained in **Subsection E. Common Conditions.**

Record Keeping and Reporting Requirements

D.38. For the purpose of reports required under 40 CFR 60.7(c), periods of excess emissions that shall be reported are defined as follows:
a. *Nitrogen oxides.* Any one-hour period during which the average water-to-fuel ratio, as measured by the continuous monitoring system, falls below the water-to-fuel ratio determined to demonstrate compliance with the permitted nitrogen oxide standard by the initial performance test required in 40 CFR 60.8 or any period during which the fuel-bound nitrogen of the fuel is greater than the maximum nitrogen content allowed by the fuel-bound nitrogen allowance used during the initial performance test. Each report shall include the average water-to-fuel ratio, average fuel consumption, ambient conditions, gas turbine load, and nitrogen content of the fuel during the period of excess emissions, and the graphs or figures developed under 40 CFR 60.335(a).
[Rule 62-296.800, F.A.C.; and, 40 CFR 60.334(c)(1)]

D.39. The owner or operator required to install a continuous monitoring system (CMS) or monitoring device shall submit an excess emissions and monitoring systems performance report (excess emissions are defined in applicable subparts) and/or a summary report form [see 40 CFR 60.7(d)] to the Administrator semiannually, except when: more frequent reporting is specifically required by an applicable subpart; or, the CMS data are to be used directly for compliance determination, in which case quarterly reports shall be submitted; or, the Administrator, on a case-by-case basis, determines that more frequent reporting is necessary to accurately assess the compliance status of the source. All reports shall be postmarked by the 30th day following the end of each calendar half (or quarter, as appropriate). Written reports of excess emissions shall include the following information:
(1) The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.
(2) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.
(3) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.
(4) When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.
[40 CFR 60.7(c)(1), (2), (3), & (4)]

D.40. The summary report form shall contain the information and be in the format shown in Figure 1 (attached) unless otherwise specified by the Administrator. One summary report form shall be submitted for each pollutant monitored at each affected facility.
(1) If the total duration of excess emissions for the reporting period is less than 1 percent of the total operating time for the reporting period and CMS downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, only the summary report form shall be submitted and the excess emission report described in 40 CFR 60.7(c) need not be submitted unless requested by the Administrator.
(2) If the total duration of excess emissions for the reporting period is 1 percent or greater of the total operating time for the reporting period or the total CMS downtime for the reporting period is 5 percent or greater of the total operating time for the reporting period, the summary report form and the excess emission report described in 40 CFR 60.7(c) shall both be submitted.
[40 CFR 60.7(d)(1) & (2)]

D.41. This emissions unit is also subject to the conditions contained in **Subsection E. Common Conditions.**

Miscellaneous Requirements.

D.42. Unless the Department has determined that other ambient concentrations are required to protect the public health and safety, predicted ambient air concentrations (AAC) shall not exceed the following levels for the pollutants shown:

	Florida Air Reference Concentrations (ug/cubic meter)		
Pollutant	8 hr. avg.	24 hr. avg.	Annual avg.
Beryllium	0.02	0.005	0.0004
Lead	1.5	0.36	0.09
Inorganic mercury compounds, all forms of vapor, as Hg	---	---	0.3

[AC 53-190437 and PSD-FL-166]

D.43. Definitions. For the purposes of Rule 62-204.800(7), F.A.C., the definitions contained in the various provisions of 40 CFR 60, shall apply except that the term "Administrator" when used in 40 CFR 60, shall mean the Secretary or the Secretary's designee.
[40 CFR 60.2; and, Rule 62-204.800(7)(a), F.A.C.]

D.44. Circumvention. No owner or operator subject to the provisions of 40 CFR 60 shall build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere.
[40 CFR 60.12]

Subsection E. Common Conditions.

E.U. ID No.	Brief Description
-003	Fossil Fuel Fired Steam Generator #6
-004	Fossil Fuel Fired Steam Generator #7
-008	Combined Cycle Combustion Turbine

The following conditions apply to the emissions unit(s) listed above:

Monitoring of Operations

E.1. 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.]

Test Methods and Procedures

E.2. 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 the two complete runs as proof of compliance, provided that the arithmetic mean of the results of the two complete runs is at least 20 percent below the allowable emission limiting standards.
[Rule 62-297.310(1), F.A.C.]

E.3. Calculation of Emission Rate. 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.]

E.4. Applicable Test Procedures.
(a) Required Sampling Time.
1. 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.
2. Opacity Compliance Tests. When either EPA Method 9 or DEP Method 9 is specified as the applicable opacity test method, the required minimum period of observation for a compliance test shall be sixty (60) minutes for emissions units which emit or have the potential to emit 100 tons per year or more of particulate matter, and thirty (30) minutes for emissions units which have potential emissions less than 100 tons per year of particulate matter and are not subject to a multiple-valued opacity standard. The opacity test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. Exceptions to these requirements are as follows:
c. The minimum observation period for opacity tests conducted by employees or agents of the Department to verify the day-to-day continuing compliance of a unit or activity with an applicable opacity standard shall be twelve minutes.
(b) Minimum Sample Volume. Unless otherwise specified in the applicable rule, the minimum sample volume per run shall be 25 dry standard cubic feet.
(c) Required Flow Rate Range. For EPA Method 5 particulate sampling, acid mist/sulfur dioxide, and fluoride sampling which uses Greenburg Smith type impingers, the sampling nozzle and sampling time shall be selected such that the average sampling rate will be between 0.5 and 1.0 actual cubic feet per minute, and the required minimum sampling volume will be obtained.
(d) Calibration of Sampling Equipment. Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1.
(e) Allowed Modification to EPA Method 5. When EPA Method 5 is required, the following modification is allowed: the heated filter may be separated from the impingers by a flexible tube.
[Rule 62-297.310(4), F.A.C.]

E.5. The permittee shall comply with the requirements contained in APPENDIX SS-1, Stack Sampling Facilities, attached to this permit.
[Rule 62-297.310(6), F.A.C.]

TABLE 297.310-1
CALIBRATION SCHEDULE

ITEM	MINIMUM CALIBRATION FREQUENCY	REFERENCE INSTRUMENT	TOLERANCE
Liquid in glass thermometer	Annually	ASTM Hg in glass ref. thermometer or equivalent, or thermometric points	+/-2%
Bimetallic thermometer	Quarterly	Calib. liq. in glass thermometer	5 degrees F
Thermocouple	Annually	ASTM Hg in glass ref. thermometer, NBS calibrated reference and potentiometer	5 degrees F
Barometer	Monthly	Hg barometer or NOAA station	+/-1% scale
Pitot Tube	When required or when damaged	By construction or measurements in wind tunnel D greater than 16" and standard pitot tube	See EPA Method 2, Fig. 2-2 & 2-3
Probe Nozzles	Before each test or when nicked, dented, or corroded	Micrometer	+/-0.001" mean of at least three readings Max. deviation between readings .004"
Dry Gas Meter and Orifice Meter	1. Full Scale: When received, When 5% change observed, Annually 2. One Point: Semiannually	Spirometer or calibrated wet test or dry gas test meter	2%
	3. Check after each test series	Comparison check	5%

E.6. Frequency of Compliance Tests. The following provisions apply only to those emissions units that are subject to an emissions limiting standard for which compliance testing is required.

(a) General Compliance Testing.

3. The owner or operator of an emissions unit that is subject to any emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining a renewed operation permit. Emissions units that are required to conduct an annual compliance test may submit the most recent annual compliance test to satisfy the requirements of this provision. In renewing an air operation permit pursuant to Rule 62- 210.300(2)(a)3.b., c., or d., F.A.C., the Department shall not require submission of emission compliance test results for any emissions unit that, during the year prior to renewal:

a Did not operate; or

b. In the case of a fuel burning emissions unit, burned liquid and/or solid fuel for a total of no more than 400 hours.

4. During each federal fiscal year (October 1 - September 30), unless otherwise specified by rule, order, or permit, the owner or operator of each emissions unit shall have a formal compliance test conducted for:

a. Visible emissions, if there is an applicable standard;

b. Each of the following pollutants, if there is an applicable standard, and if the emissions unit emits or has the potential to emit: 5 tons per year or more of lead or lead compounds measured as elemental lead; 30 tons per year or more of acrylonitrile; or 100 tons per year or more of any other regulated air pollutant; and

c. Each NESHAP pollutant, if there is an applicable emission standard.

5. An annual compliance test for particulate matter emissions shall not be required for any fuel burning emissions unit that, in a federal fiscal year, does not burn liquid and/or solid fuel, other than during startup, for a total of more than 400 hours.

9. 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.

(b) 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 may 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.

(c) Waiver of Compliance Test Requirements. If the owner or operator of an emissions unit that is subject to a compliance test requirement demonstrates to the Department, pursuant to the procedure established in Rule 62-297.620, F.A.C., that the compliance of the emissions unit with an applicable weight emission limiting standard can be adequately determined by means other than the designated test procedure, such as specifying a surrogate standard of no visible emissions for particulate matter sources equipped with a bag house or specifying a fuel analysis for sulfur dioxide emissions, the Department shall waive the compliance test requirements for such emissions units and order that the alternate means of determining compliance be used, provided, however, the provisions of Rule 62-297.310(7)(b), F.A.C., shall apply.
[Rule 62-297.310(7), F.A.C.; and, SIP approved]

Record Keeping and Reporting Requirements

E.7. Malfunction Reporting. In the case of excess emissions resulting from malfunctions, each owner or operator shall notify the Department 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.]

E.8. Test Reports.
(a) 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.
(b) 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.
(c) 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.
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.

[Rules 62-213.440 and 62-297.310(8), F.A.C.]

Section IV. This section is the Acid Rain Part.

Operated by: City of Lakeland
ORIS code: 0675

Subsection A. This subsection addresses Acid Rain, Phase II.

The emissions units listed below are regulated under Acid Rain Part, Phase II.

E.U. ID No.	Description
-004	Fossil Fuel Fired Steam Generator #7
-008	Combined Cycle Combustion Turbine #8

A.1. The Phase II permit application(s) submitted for this facility, as approved by the Department, are a part of this permit. The owners and operators of these Phase II acid rain unit(s) must comply with the standard requirements and special provisions set forth in the application(s) listed below:
a. DEP Form No. 62-210.900(1)(a), dated 07/01/95.
[Chapter 62-213, F.A.C. and Rule 62-214.320, F.A.C.]

A.2. Sulfur dioxide (SO_2) allowance allocations for each Acid Rain unit is as follows:

E.U. ID No.	EPA ID	Year	2000	2001	2002
-004	ID No. 7	SO2 allowances, under Table 2 or 3 of 40 CFR Part 73	303*	303*	303*
-008	ID No. 8	SO2 allowances, under Table 2 or 3 of 40 CFR Part 73	659*	659*	659*

* The number of allowances held by an Acid Rain source in a unit account may differ from the number allocated by the USEPA under Table 2 or 3 of 40 CFR 73.]
** If applicable, by January 1, 1999, this Part will be reopened to add NOx requirements in accordance with the regulations implementing section 407 of the Clean Air Act.

A.3. Emission Allowances. Emissions from sources subject to the Federal Acid Rain Program (Title IV) shall not exceed any allowances that the source lawfully holds under the Federal Acid Rain Program. Allowances shall not be used to demonstrate compliance with a non-Title IV applicable requirement of the Act.
1. No permit revision shall be required for increases in emissions that are authorized by allowances acquired pursuant to the Federal Acid Rain Program, provided that such increases do not require a permit revision pursuant to Rule 62-213.400(3), F.A.C.

2. No limit shall be placed on the number of allowances held by the source under the Federal Acid Rain Program.
3. Allowances shall be accounted for under the Federal Acid Rain Program.
[Rule 62-213.440(1)(c)1., 2. & 3., F.A.C.]

A.4. Fast-Track Revisions of Acid Rain Parts. Those Acid Rain sources making a change described at Rule 62- 214.370(4), F.A.C., may request such change as provided in Rule 62-213.413, F.A.C.
[Rules 62-213.413 and 62-214.370(4), F.A.C.]

ATTACHMENT LR-FI-C14

COMPLIANCE REPORT AND PLAN

ATTACHMENT LR-FI-C14

COMPLIANCE REPORT AND PLAN

Compliance with the conditions set forth in this operation permit will be certified on an annual basis by the submittal of the Statement of Compliance – Title V Source DEP Form No. 62-213.900(7). This report will be submitted by March 1 of each year for the prior calendar year.

ATTACHMENT LR-FI-C15

COMPLIANCE CERTIFICATION

ATTACHMENT LR-FI-C15

COMPLIANCE CERTIFICATION

The facility and emission units identified in this application are in compliance with the Applicable Regulations identified in the application form and attachments referenced in the section. The compliance report for this facility will be submitted by March 1 of each year for the prior calendar year. The compliance statement is as follows:

> I, the undersigned, am the responsible official as defined in Chapter 62-210.200, F.A.C., of the Title V source for which this report is being submitted. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made and data contained in this report are true, accurate, and complete.

Signature, Responsible Official

6/18/02
Date

Keith Hulbert, General Manager

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in This Section: (Check one)

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Regulated or Unregulated Emissions Unit? (Check one)

[X] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

[ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

3. Description of Emissions Unit Addressed in This Section (limit to 60 characters):

Fossil Fuel Fired Steam Generator #6

4. Emissions Unit Identification Number: [ ] No ID [ ] ID Unknown
ID: **003**

5. Emissions Unit Status Code:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A	**JANUARY 1959**	**49**	[ ]

9. Emissions Unit Comment: (Limit to 500 Characters)

Initial startup date is Emission Unit's commercial in-service date. Emission Unit is below criteria to trigger acid rain applicability as provided in 40 CFR 72.6.

Emissions Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method):

2. Control Device or Method Code(s):

Emissions Unit Details

1. Package Unit:
   Manufacturer: Model Number:

2. Generator Nameplate Rating: **25** MW

3. Incinerator Information:
   Dwell Temperature: °F
   Dwell Time: seconds
   Incinerator Afterburner Temperature: °F

B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:			**386.5**	mmBtu/hr
2. Maximum Incineration Rate:	lb/hr			tons/day
3. Maximum Process or Throughput Rate:				
4. Maximum Production Rate:				
5. Requested Maximum Operating Schedule:				
	24	hours/day	**7**	days/week
	52	weeks/year	**8,760**	hours/year

6. Operating Capacity/Schedule Comment (limit to 200 characters):

Maximum heat input natural gas firing (HHV).

Maximum heat input for residual oil firing is 372.4 mmBtu/hr (HHV).

Maximum heat input values reflected in FDEP Administrative Correction in Permit No. 105003-004-AV Condition A.1.

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

See Attachment LR-EU1-D	

D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? **See Attachment LR-EU1-J1**	2. Emission Point Type Code: **1**
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): **Exhausts through a single stack.**	
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: **EU ID 003 – Unit 6**	

5. Discharge Type Code: **V**	6. Stack Height: **165** feet	7. Exit Diameter: **10** feet
8. Exit Temperature: **340** °F	9. Actual Volumetric Flow Rate: **98,960** acfm	10. Water Vapor: %

11. Maximum Dry Standard Flow Rate: dscfm	12. Nonstack Emission Point Height: feet
13. Emission Point UTM Coordinates: Zone: **17** East (km): **408. 9** North (km): **3102.9**	
14. Emission Point Comment (limit to 200 characters):	

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type) (limit to 500 characters): **External Combustion Boilers – Electric Generation - Residual Oil No. 6 – Normal Firing**		
2. Source Classification Code (SCC): **1-01-004-01**	3. SCC Units: **1,000 gallons**	
4. Maximum Hourly Rate: **2.48**	5. Maximum Annual Rate: **21,748**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: **2.5**	8. Maximum % Ash:	9. Million Btu per SCC Unit: **150**
10. Segment Comment (limit to 200 characters): **Permit No. 1050003-004-AV Condition III.A.1 - Max. Hourly = 372.4 mmBtu/hr / 150 mmBtu / 1,000 gal / 1,000 gal.** **Maximum heat input for residual oil firing. Distillate oil (SCC 1-01-005-01) used for ignition.** **Heat Content – HHV.**		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type) (limit to 500 characters): **External Combustion Boilers – Electric Generation – Natural Gas – Boilers > 100 Million Btu/hr except Tangential**		
2. Source Classification Code (SCC): **1-01-006-01**	3. SCC Units: **Million Cubic Feet**	
4. Maximum Hourly Rate: **0.377**	5. Maximum Annual Rate: **3,306**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: **1,024**
10. Segment Comment (limit to 200 characters): **Permit No. 1050003-010-AV Condition III.A.1 - Max. Hourly = 386.5 mmBtu/hr / 1,024 mmBtu / 1,000,000 CF / 1,000,000 CF.** **Maximum heat input for natural gas firing. Propane (SCC 1-01-010-02) used for ignition.** **Heat Content – HHV.**		

F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM			EL
SO_2			EL
NO_X			NS
CO			NS
VOC			NS
PM_{10}			NS

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **111.7** lb/hour **204** tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **0.3 lb/MMBtu** Reference: **Permit No. 1050003-009-AV Condition III.A.8**	7. Emissions Method Code: **0**
8. Calculation of Emissions (limit to 600 characters): **See Attachment LR-EU1-G8**	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): **Potential lb/hr – soot-blowing while oil firing. Potential TPY – 0.125 lb/MMBtu, 24 hours (0.1 during normal operation, 21 hr; 0.3 during soot-blowing, 3 hr)**	

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **0.1 lb/MMBtu**	4. Equivalent Allowable Emissions: **37.2** lb/hour **163.1** tons/year
5. Method of Compliance (limit to 60 characters): **Annual compliance test, EPA Method 5/5B/5F or 17**	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): **Based on oil firing during normal operations. Permit No. 1050003-009-AV Condition III.A.7. Test required if oil firing > 400 hr/yr. Not required if unit is on cold standby; required 30 days after start-up.**	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **111.7** lb/hour **204** tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **0.3 lb/MMBtu** Reference: **Permit No. 1050003-009-AV Condition III.A.8**	7. Emissions Method Code: **0**
8. Calculation of Emissions (limit to 600 characters): **See Attachment LR-EU1-G8**	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): **Potential lb/hr – soot-blowing while oil firing. Potential TPY – 0.125 lb/MMBtu, 24 hours (0.1 during normal operation, 21 hr; 0.3 during soot-blowing, 3 hr)**	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **0.3 lb/MMBtu**	4. Equivalent Allowable Emissions: **111.7** lb/hour **61.2** tons/year
5. Method of Compliance (limit to 60 characters): **Annual compliance test, EPA Method 5/5B/5F or 17**	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): **Allowed for 3 hours per 24 hours [FDEP Rule 62-210.700(3)]. Permit No. 1050003-009-AV Condition III.A.8. Test required if oil firing > 400 hr/yr.**	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **SO_2**	2. Total Percent Efficiency of Control:

3. Potential Emissions: **1,024** lb/hour **4,486** tons/year	4. Synthetically Limited? [ ]

5. Range of Estimated Fugitive Emissions:
[ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year

6. Emission Factor: **2.75 lb/MMBtu** Reference: **Permit No. 1050003-009-AV Condition III.A.9**	7. Emissions Method Code: **0**

8. Calculation of Emissions (limit to 600 characters):

See Attachment LR-EU1-G8

9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):

Firing No. 6 fuel oil. Permit No. 1030012-001-AV Condition III.A.10 limits maximum sulfur content to 2.5%.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **2.75 lb/MMBtu**	4. Equivalent Allowable Emissions: **1,024** lb/hour **4,486** tons/year

5. Method of Compliance (limit to 60 characters):

Fuel oil analysis

6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):

Permit No. 1050003-009-AV Condition III.A.14

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation 1 of 3

1. Visible Emissions Subtype: **VE20**	2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: **20** % Exceptional Conditions: **40** % Maximum Period of Excess Opacity Allowed: **2** min/hour	
4. Method of Compliance: **Annual VE Test EPA Method 9**	
5. Visible Emissions Comment (limit to 200 characters): **Permit No. 1050003-009-AV Condition III.A.5.**	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	[ ] Rule [ ] Other
4. Monitor Information: Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment (limit to 200 characters):	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation 2 of 3

1. Visible Emissions Subtype: **VE60**	2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: **60** % Exceptional Conditions: **100** % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: **Annual VE Test EPA Method 9**	
5. Visible Emissions Comment (limit to 200 characters): **60% opacity during load changing and boiler cleaning (soot-blowing) for 3 hr / 24 hr. 100% opacity allowed for 4 six-minute periods during 3 hr. Permit No. 1050003-009-AV Condition III.A.6**	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	[ ] Rule [ ] Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment (limit to 200 characters):	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation 3 of 3

1. Visible Emissions Subtype: **VE99**	2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: **100** % Maximum Period of Excess Opacity Allowed: **60** min/hour	
4. Method of Compliance: **None**	
5. Visible Emissions Comment (limit to 200 characters): **Not to exceed 2 hr / 24 hr during malfunction. Permit No. 1050003-009-AV Condition III.A.11** **Excess emissions for startup, shutdown with good operating practices. Permit No. 1050003-009-AV Condition III.A.12**	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	[ ] Rule [ ] Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment (limit to 200 characters):	

J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements

1. Process Flow Diagram
   [X] Attached, Document ID: LR-EU1-J1 [ ] Not Applicable [ ] Waiver Requested

2. Fuel Analysis or Specification
   [X] Attached, Document ID: LR-EU1-J2 [ ] Not Applicable [ ] Waiver Requested

3. Detailed Description of Control Equipment
   [ ] Attached, Document ID: _____ [X] Not Applicable [ ] Waiver Requested

4. Description of Stack Sampling Facilities
   [X] Attached, Document ID: LR-EU1-J4 [ ] Not Applicable [ ] Waiver Requested

5. Compliance Test Report
   [ ] Attached, Document ID: _____
   [ ] Previously submitted, Date: _____
   [X] Not Applicable **Permit No. 1050003-009-AV Conditions III.A.22 - 25**

6. Procedures for Startup and Shutdown
   [X] Attached, Document ID: LR-EU1-J6 [ ] Not Applicable [ ] Waiver Requested

7. Operation and Maintenance Plan
   [ ] Attached, Document ID: _____ [X] Not Applicable [ ] Waiver Requested

8. Supplemental Information for Construction Permit Application
   [ ] Attached, Document ID: _____ [X] Not Applicable

9. Other Information Required by Rule or Statute
   [ ] Attached, Document ID: _____ [X] Not Applicable

10. Supplemental Requirements Comment:

Additional Supplemental Requirements for Title V Air Operation Permit Applications

11. Alternative Methods of Operation
[X] Attached, Document ID: **LR-EU1-J11** [ ] Not Applicable

12. Alternative Modes of Operation (Emissions Trading)
[ ] Attached, Document ID:_____ [X] Not Applicable

13. Identification of Additional Applicable Requirements
[X] Attached, Document ID: **LR-FI-C12** [ ] Not Applicable

14. Compliance Assurance Monitoring Plan
[ ] Attached, Document ID:_____ [X] Not Applicable **See Attachment LR-EU1-J14**

15. Acid Rain Part Application (Hard-copy Required)

[ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
Attached, Document ID:_____

[ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
Attached, Document ID:_____

[ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
Attached, Document ID:_____

[ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
Attached, Document ID:_____

[ ] Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
Attached, Document ID:_____

[ ] Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
Attached, Document ID:_____

[X] Not Applicable

ATTACHMENT LR-EU1-D

APPLICABLE REQUIREMENTS

ATTACHMENT LR-EU1-D

Applicable Requirements Listing

EMISSION UNIT: EU1: Unit 6 (FFFSG)

FDEP Rules:

Stationary Sources-General:

62-210.700(1)	- Malfunction only for FFSG
62-210.700(2)	- FFSG; startup/shut down
62-210.700(3)	- FFSG; sootblowing/load change
62-210.700(4)	- Maintenance
62-210.700(6)	- Excess Emissions; notification

Stationary Sources-Emission Standards:

62-296.405(1)(a)	- FFSG; VE
62-296.405(1)(b)	- FFSG; PM
62-296.405(1)(c)1.j.	- FFSG; Oil-SO_2 (general limit)
62-296.405(1)(e)	- FFSG; Test Methods
62-296.405(1)(f)1.a.(i)	- FFSG; Opacity CEMS exempted for oil/gas units
62-296.405(1)(f)1.b.	- FFSG; SO_2 CEMS exempted for non-controlled units (oil/gas)

Stationary Sources-Emission Monitoring (where stack test is required):

62-297.310(1)	- Test Runs-Mass Emission
62-297.310(2)(b)	- Operating Rate; other than CTs
62-297.310(3)	- Calculation of Emission
62-297.310(4)(a)	- Applicable Test Procedures; Sampling time
62-297.310(4)(b)	- Sample Volume
62-297.310(4)(c)	- Required Flow Rate Range-PM/H_2SO_4/F
62-297.310(4)(d)	- Calibration
62-297.310(4)(e)	- EPA Method 5-only
62-297.310(5)	- Determination of Process Variables
62-297.310(6)(a)	- Permanent Test Facilities-general
62-297.310(6)(c)	- Sampling Ports
62-297.310(6)(d)	- Work Platforms
62-297.310(6)(e)	- Access
62-297.310(6)(f)	- Electrical Power
62-297.310(6)(g)	- Equipment Support
62-297.310(7)(a)2.	- FFSG excess emissions
62-297.310(7)(a)3.	- Permit Renewal Test Required
62-297.310(7)(a)4.	- Annual Test
62-297.310(7)(a)5.	- PM exemption if <400 hrs/yr
62-297.310(7)(a)9.	- FDEP Notification - 15 days
62-297.310(7)(c)	- Waiver of Compliance Test (Fuel Sampling)
62-297.310(8)	- Test Reports

ATTACHMENT LR-EU1-G8

CALCULATION OF EMISSIONS

Attachment LR-EU1-G8. Calculation of Emissions

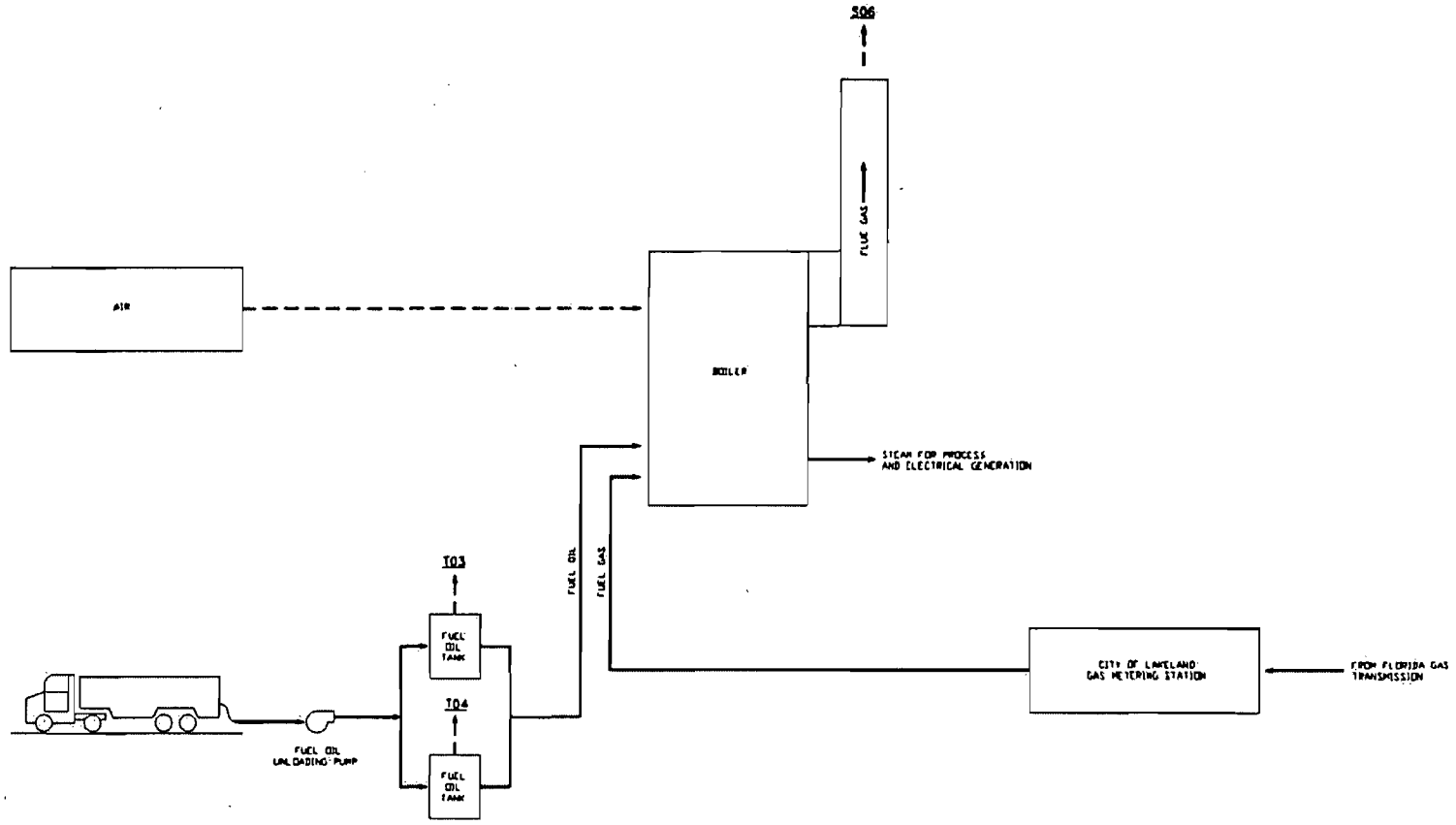
Maximum Estimated Emissions for Emisions Limited Pollutants, Steam Generator Units 6 and 7, Larsen Power Plant

	Unit 6		Unit 7	
Pollutant	Oil-Firing	Natural Gas	Oil-Firing	Natural Gas
Hours of Operation	8,760	8,760	8,760	8,760
Sulfur Dioxide (lb/hr) (Oil)= EF (lb/MMBtu) x Heat Input Rate (MMBtu/hr)				
Sulfur Dioxide (lb/hr) (Gas)= Fuel sulfur content (Percent; gr/ 100 cf) x 2 (64 MW SO_2/32 MW S) x Fuel Consumption (Fuel units/hr)				
Basis	DEP Rules	1 gr S/100 cf	DEP Rules	1 gr S/100 cf
EF (lb/MMBtu)	2.75		2.75	
HIR (MMBtu/hr)	372.4	386.5	728.0	763.0
Sulfur content (gr/100 cf)		1		1
Fuel consumptiom (100 cf/hr)		3,770.0		7,450.0
lb/hr	1024.1	1.1	2,002.0	2.1
TPY	4,485.6	4.7	8,768.8	9.3
Particulate Matter (lb/hr) (Oil)= EF (lb/MMBtu) x Heat Input Rate (MMBtu/hr)				
Particulate Matter (lb/hr) (Gas)= EF (lb/fuel unit) x Fuel Consumption (fuel unit)				
Basis (1)	DEP Rules	AP-42	DEP Rules	AP-42
EF (lb/MMBtu) or (lb/MMcf)	0.3	3	0.3	3
EF (lb/MMBtu) (Oil; normal/sootblowing; annual)	0.125		0.125	
HIR (MMBtu/hr)	372.4	386.5	728.0	763.0
Fuel consumptiom (MMcf/hr)		0.38		0.75
lb/hr	111.7	1.1	218.4	2.2
TPY	203.9	5.0	398.6	9.8
Particulate Matter (PM-10)(lb/hr) (Oil)= EF (lb/MMBtu) x Heat Input Rate (MMBtu/hr)				
Particulate Matter (PM-10)(lb/hr) (Gas)= EF (lb/fuel unit) x Fuel Consumption (fuel unit)				
Basis (1)	DEP Rules	AP-42	DEP Rules	AP-42
EF (lb/MMBtu) or (lb/MMcf)	0.3	3	0.3	3
EF (lb/MMBtu) (Oil; normal/sootblowing; annual)	0.125		0.125	
HIR (MMBtu/hr)	372.4	386.5	728.0	763.0
Fuel consumptiom (MMcf/hr)		0.38		0.75
lb/hr	111.7	1.1	218.4	2.2
TPY	203.9	5.0	398.6	9.8

(1) FDEP Rule 62-296.405(1) and 62-296.800; 0.3 and 0.1 lb/MMBtu for soot-blowing and normal operations, respectively; EPA, 1998, AP-42, Table 1.4-1.

ATTACHMENT LR-EU1-J1

PROCESS FLOW DIAGRAM



REV. NO.	BY	DATE	APPR.	REVISION
0	MG	11-2-94		ISSUED FOR TITLE V PERMIT APPLICATION
1	MG	5-16-96	MP	CHANGE TITLE
2	MG	5-29-96	MP	ISSUED FOR TITLE V

LAKELAND ELECTRIC & WATER

DESCRIPTION

LAKELAND ELECTRIC & WATER UTILITIES
LARSEN POWER PLANT
UNIT NO. 8
TITLE V PROCESS FLOW DIAGRAM

DIVISION PRODUCTION ENGINEERING
ENGINEER PATTERSON
DRN. BY: MGIEGER
APPR. BY:
DATE 9-19-94

CAD | SCALE NONE
PROJ. NO. AIR PERMIT
DWG. NO. LR-EU1-L1/SKL-9
REV. 2

SIZE B

ATTACHMENT LR-EU1-J2

FUEL ANALYSIS
FUEL OIL

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 630-953-9300 FAX: 630-953-9306
SINCE 1908
SGS Member of the SGS Group (Société Générale de Surveillance)
Committed To Excellence
ADDRESS ALL CORRESPONDENCE TO:
18130 VAN DRUNEN RD.
SOUTH HOLLAND, IL 60473
TEL: (708) 331-2900
FAX: (708) 333-3060
www.comtecb.com

December 18, 2001

CITY OF LAKELAND
3030 E. Lake Parker Dr.
Lakeland, FL 33805
Attn: Steven Parrish

Sample identification by
City of Lakeland

Kind of sample
reported to us Fuel Oil

Sample taken at City of Lakeland

Sample taken by City of Lakeland

Sample ID: Unit #7 Stack Test
Composite Sample
836-01

Date sampled November 29, 2001

Date received December 12, 2001

P.O. No. 15558

Analysis Report No. 71-167169

Page 1 of 1

	As Received
GRAVITY	
Specific at 60/60°F	0.9440
Lb/gallon at 60°F	7.865
°API	18.4
HEATING VALUE	
Btu/lb.	18,495
Btu/gal at 60°F	145,463
Sulfur, % Wt.	1.67

METHODS
Gravity: ASTM D 4052; Heating Value: ASTM D 240; Sulfur: ASTM D 4294

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

South Holland Laboratory

MEMBER ACIL

CATALYST AIR MANAGEMENT, INC.
Heat Input and SO2 lb/mmBtu Calculations
City of Lakeland - Charles Larsen Plant

Unit 7

OIL ANALYSIS

SO2

Sulfur =	1.67	%
Density =	7.865	lb/gal
Heating Value =	18495	Btu/lb
SO2 (calculated) =	1.806	lb/mmBtu

Heat Input

	fuel (lb/hr)	heat input (mmBtu/hr)
Average	29,183	539.7

Average Heat Input (calculated) =	539.7	mmBtu/hr
Maximum Permitted Heat Input =	728.0	mmBtu/hr
Minimum Test Heat Input =	655.2	mmBtu/hr

ATTACHMENT LR-EU1-J4

DESCRIPTION OF STACK SAMPLING FACILITIES

ATTACHMENT LR-EU1-J4

DESCRIPTION OF STACK SAMPLING FACILITIES

FFFSG #6 is required by Permit 1050003-009-AV to perform annual stack testing in accordance with standard EPA reference methods if oil is fired > 400 hrs/yr. Pursuant to Rule 62-297.345, F.A.C., the annual stack test required is performed with the required stack sampling facilities. As specified by Rule 62-297.310(6), the temporary test facilities are used since the unit was not designed or capable of supporting permanent facilities. The unit does have:

- The sampling ports have a minimum effective diameter of 3 inches.
- At least two sampling ports, 90 degrees apart have been installed on the circular stack.
- The sampling access is equipped with safety equipment.

ATTACHMENT LR-EU1-J6

PROCEDURES FOR STARTUP/SHUTDOWN

ATTACHMENT LR-EU1-J6

PROCEDURES FOR STARTUP AND SHUTDOWN MINIMIZING EXCESS EMISSIONS

Startup of the fossil-fuel boilers begins when fuel (No. 2 or No. 6 fuel oil or natural gas) is introduced into one or more burners within the boiler and lighted (commencement of combustion). Startup is complete and steady-state operation begins when the combustion process has stabilized and the megawatt load on the unit is stable and above 10 percent load.

Shutdown of the fossil-fuel boilers begins when unit megawatt load is decreased to below 10 percent of maximum and continues until the final burner gun is removed from service.

Emissions may be detected during all modes of boiler operation by various continuous emissions monitors.

Countermeasures which may be taken in the event of excess emissions include, but are not limited to:

- burner elevation loading
- proper excess air adjustments
- recognizing and removal of faulty burners
- fuel oil temperature adjustments
- proper and timely operation of boiler cleaning devices
- removal of the unit from system-dispatch mode (load control)
- reduction of unit megawatt load
- stopping and restarting of boiler cleaning devices
- lowering load ramp rate
- pressure rate changes
- placing boiler controls on manual
- adjusting burner dampers to increase windbox/furnace air pressure

Knowledge of the appropriate countermeasures to take when excess emissions occur is a part of the routine operator training for those who operate the boilers. Topics include current permit limits, maximum allowable duration of excess emissions, appropriate countermeasures for excess emissions, duty to notify, and fuels and combustion training.

ATTACHMENT LR-EU1-J11

ALTERNATIVE METHODS OF OPERATION

ATTACHMENT LR-EU1-J11

ALTERNATIVE METHODS OF OPERATION
FOSSIL FUEL STEAM GENERATOR

The fossil fuel steam generator can operate on both natural gas and fuel oil (No. 6 through No. 2 fuel oil). The maximum sulfur content in the fuel oil shall not exceed 2.5 percent. The No. 2 fuel oil and propane are used as pilot fuel during startup, shutdown, and malfunctions. This unit can operate for the entire year (i.e., 8,760 hours) and can fire either fuel oil and/or natural gas with no restrictions on hours of operation or load.

ATTACHMENT LR-EU1-J14

COMPLIANCE ASSURANCE MONITORING PLAN

ATTACHMENT LR-EU1-J14

COMPLIANCE ASSURANCE MONITORING PLAN

There are no control devices for the fossil fuel fired steam generators, therefore no compliance assurance monitoring plan is required.

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in This Section: (Check one)

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Regulated or Unregulated Emissions Unit? (Check one)

[X] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

[ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

3. Description of Emissions Unit Addressed in This Section (limit to 60 characters):

Fossil Fuel Fired Steam Generator #7

4. Emissions Unit Identification Number:
ID: **004**
[ ] No ID
[ ] ID Unknown

5. Emissions Unit Status Code:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A	**JANUARY 1966**	**49**	[X]

9. Emissions Unit Comment: (Limit to 500 Characters)

Initial startup date is Emission Unit's commercial in-service date.

Emissions Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method):

2. Control Device or Method Code(s):

Emissions Unit Details

1. Package Unit:
   Manufacturer: Model Number:
2. Generator Nameplate Rating: 44 MW
3. Incinerator Information:
   Dwell Temperature: °F
   Dwell Time: seconds
   Incinerator Afterburner Temperature: °F

B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:			763	mmBtu/hr
2. Maximum Incineration Rate:	lb/hr			tons/day
3. Maximum Process or Throughput Rate:				
4. Maximum Production Rate:				
5. Requested Maximum Operating Schedule:				
	24	hours/day	7	days/week
	52	weeks/year	8,760	hours/year

6. Operating Capacity/Schedule Comment (limit to 200 characters):

Maximum heat input natural gas firing (HHV).

Maximum heat input for residual oil firing is 728 mmBtu/hr (HHV).

Maximum heat input values reflected in FDEP Administrative Correction in Permit No. 105003-004-AV Condition B.1.

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

See Attachment LR-EU2-D	

D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? **See Attachment LR-EU2-J1**	2. Emission Point Type Code: **1**	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): **Exhausts through a single stack.**		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: **EU ID 004 – Unit 7**		
5. Discharge Type Code: **V**	6. Stack Height: **165** feet	7. Exit Diameter: **10** feet
8. Exit Temperature: **340** °F	9. Actual Volumetric Flow Rate: **103,673** acfm	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates: Zone: **17** East (km): **409. 0** North (km): **3102.8**		
14. Emission Point Comment (limit to 200 characters):		

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type) (limit to 500 characters): **External Combustion Boilers – Electric Generation - Residual Oil No. 6 – Normal Firing**		
2. Source Classification Code (SCC): **1-01-004-01**	3. SCC Units: **1,000 gallons**	
4. Maximum Hourly Rate: **4.85**	5. Maximum Annual Rate: **42,515**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: **2.5**	8. Maximum % Ash:	9. Million Btu per SCC Unit: **150**
10. Segment Comment (limit to 200 characters): **Permit No. 1050003-010-AV Condition III.B.1 - Max. Hourly = 728 mmBtu/hr / 150 mmBtu / 1,000 gal / 1,000 gal.** **Maximum heat input for residual oil firing. Distillate oil (SCC 1-01-005-01) used for ignition.** **Heat Content – HHV.**		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type) (limit to 500 characters): **External Combustion Boilers – Electric Generation – Natural Gas – Boilers > 100 Million Btu/hr except Tangential**		
2. Source Classification Code (SCC): **1-01-006-01**	3. SCC Units: **Million Cubic Feet**	
4. Maximum Hourly Rate: **0.745**	5. Maximum Annual Rate: **6,528**	6. Estimated Annual Activity Factor:
8. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: **1,024**
10. Segment Comment (limit to 200 characters): **Permit No. 1050003-010-AV Condition III.B.1 - Max. Hourly = 763 mmBtu/hr / 1,024 mmBtu / 1,000,000 CF / 1,000,000 CF.** **Maximum heat input for natural gas firing. Propane (SCC 1-01-010-02) used for ignition.** **Heat Content – HHV.**		

F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM			EL
SO_2			EL
NO_X			NS
CO			NS
VOC			NS
PM_{10}			NS

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **218.4** lb/hour **398.6** tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **0.3 lb/MMBtu** Reference: **Permit No. 1050003-009-AV Condition III.B.8**	7. Emissions Method Code: **0**
8. Calculation of Emissions (limit to 600 characters): **See Attachment LR-EU1-G8**	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): **Potential lb/hr – soot-blowing while oil firing. Potential TPY – 0.125 lb/MMBtu, 24 hours (0.1 during normal operation, 21 hr; 0.3 during soot-blowing, 3 hr)**	

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **0.1 lb/MMBtu**	4. Equivalent Allowable Emissions: **72.8** lb/hour **318.9** tons/year
5. Method of Compliance (limit to 60 characters): **Annual compliance test, EPA Method 5/5B/5F or 17**	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): **Based on oil firing during normal operations. Permit No. 1050003-009-AV Condition III.B.7. Test required if oil firing > 400 hr/yr. Not required if unit is on cold standby; required 30 days after start-up.**	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **218.4** lb/hour **398.6** tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **0.3 lb/MMBtu** Reference: **Permit No. 1050003-009-AV Condition III.B.8**	7. Emissions Method Code: **0**
8. Calculation of Emissions (limit to 600 characters): **See Attachment LR-EU1-G8**	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): **Potential lb/hr – soot-blowing while oil firing. Potential TPY – 0.125 lb/MMBtu, 24 hours (0.1 during normal operation, 21 hr; 0.3 during soot-blowing, 3 hr)**	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **0.3 lb/MMBtu**	4. Equivalent Allowable Emissions: **218.4** lb/hour **120** tons/year
5. Method of Compliance (limit to 60 characters): **Annual compliance test, EPA Method 5/5B/5F or 17**	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): **Allowed for 3 hours per 24 hours [FDEP Rule 62-210.700(3)]. Permit No. 1050003-009-AV Condition III.B.8. Test required if oil firing > 400 hr/yr.**	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **SO_2**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **2,002** lb/hour **8,769** tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **2.75 lb/MMBtu** Reference: **Permit No. 1050003-009-AV Condition III.B.9**	7. Emissions Method Code: **0**
8. Calculation of Emissions (limit to 600 characters): **See Attachment LR-EU1-G8**	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): **Firing No. 6 fuel oil. Permit No. 1030012-001-AV Condition III.B.10 limits maximum sulfur content to 2.5%.**	

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **2.75 lb/MMBtu**	4. Equivalent Allowable Emissions: **2,002** lb/hour **8,769** tons/year
5. Method of Compliance (limit to 60 characters): **Fuel oil analysis**	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): **Permit No. 1050003-009-AV Condition III.B.14**	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation 1 of 3

1. Visible Emissions Subtype: **VE20**	2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: **20** % Exceptional Conditions: **40** % Maximum Period of Excess Opacity Allowed: **2** min/hour	
4. Method of Compliance: **Annual VE Test EPA Method 9**	
5. Visible Emissions Comment (limit to 200 characters): **Permit No. 1050003-009-AV Condition III.B.5.**	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor 1 of 5

1. Parameter Code: **EM**	2. Pollutant(s): **SO2**
3. CMS Requirement:	[X] Rule [ ] Other
4. Monitor Information: Manufacturer: **Advanced Pollution Inst.** Model Number: **152** Serial Number: **174**	
5. Installation Date: **23 NOVEMBER 1994**	6. Performance Specification Test Date: **30 JUNE 1995**
7. Continuous Monitor Comment (limit to 200 characters): **CEM required pursuant to 40 CFR Part 75.**	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation 2 of 3

1. Visible Emissions Subtype: **VE60**	2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: **60** % Exceptional Conditions: **100** % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: **Annual VE Test EPA Method 9**	
5. Visible Emissions Comment (limit to 200 characters): **60% opacity during load changing and boiler cleaning (soot-blowing) for 3 hr / 24 hr. 100% opacity allowed for 4 six-minute periods during 3 hr. Permit No. 1050003-009-AV Condition III.B.6**	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor 2 of 5

1. Parameter Code: **EM**	2. Pollutant(s): **NOX**
3. CMS Requirement:	[X] Rule [ ] Other
4. Monitor Information: Manufacturer: **Advanced Pollution Inst.** Model Number: **252** Serial Number: **114**	
5. Installation Date: **23 NOVEMBER 1994**	6. Performance Specification Test Date: **30 JUNE 1995**
7. Continuous Monitor Comment (limit to 200 characters): **CEM required pursuant to 40 CFR Part 75.**	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation 3 of 3

1. Visible Emissions Subtype: **VE99**	2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: **100** % Maximum Period of Excess Opacity Allowed: **60** min/hour	
4. Method of Compliance: **None**	
5. Visible Emissions Comment (limit to 200 characters): **Not to exceed 2 hr / 24 hr during malfunction. Permit No. 1050003-009-AV Condition III.B.11** **Excess emissions for startup, shutdown with good operating practices. Permit No. 1050003-009-AV Condition III.B.12**	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor 3 of 5

1. Parameter Code: **VE**	2. Pollutant(s):
3. CMS Requirement:	[X] Rule [ ] Other
4. Monitor Information: Manufacturer: **United Sciences Inc.** Model Number: **500C** Serial Number: **0993685**	
5. Installation Date: **23 NOVEMBER 1994**	6. Performance Specification Test Date: **30 JUNE 1995**
7. Continuous Monitor Comment (limit to 200 characters): **CEM required pursuant to 40 CFR Part 75.**	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment (limit to 200 characters):	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor 4 of 5

1. Parameter Code: **CO2**	2. Pollutant(s):
3. CMS Requirement:	[**X**] Rule [ ] Other
4. Monitor Information: Manufacturer: **Milton Roy** Model Number: **3300** Serial Number: **N3L2485T**	
5. Installation Date: **23 NOVEMBER 1994**	6. Performance Specification Test Date: **30 JUNE 1995**
7. Continuous Monitor Comment (limit to 200 characters): **CEM required pursuant to 40 CFR Part 75.**	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment (limit to 200 characters):	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor 5 of 5

1. Parameter Code: **FLOW**	2. Pollutant(s):
3. CMS Requirement:	[X] Rule [ ] Other
4. Monitor Information: Manufacturer: **Air Monitor** Model Number: **CEM** Serial Number: **20914**	
5. Installation Date: **23 NOVEMBER 1994**	6. Performance Specification Test Date: **30 JUNE 1995**
7. Continuous Monitor Comment (limit to 200 characters): **Flow monitor required pursuant to 40 CFR Part 75.**	

J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements

1. Process Flow Diagram [X] Attached, Document ID: LR-EU2-J1 [ ] Not Applicable [ ] Waiver Requested
2. Fuel Analysis or Specification [X] Attached, Document ID: LR-EU2-J2 [ ] Not Applicable [ ] Waiver Requested
3. Detailed Description of Control Equipment [ ] Attached, Document ID: _____ [X] Not Applicable [ ] Waiver Requested
4. Description of Stack Sampling Facilities [X] Attached, Document ID: LR-EU2-J4 [ ] Not Applicable [ ] Waiver Requested
5. Compliance Test Report [X] Attached, Document ID: LR-EU2-J5 [ ] Previously submitted, Date: _____ [ ] Not Applicable
6. Procedures for Startup and Shutdown [X] Attached, Document ID: LR-EU1-J6[ ] Not Applicable [ ] Waiver Requested
7. Operation and Maintenance Plan [ ] Attached, Document ID: _____ [X] Not Applicable [ ] Waiver Requested
8. Supplemental Information for Construction Permit Application [ ] Attached, Document ID: _____ [X] Not Applicable
9. Other Information Required by Rule or Statute [ ] Attached, Document ID: _____ [X] Not Applicable
10. Supplemental Requirements Comment:

Additional Supplemental Requirements for Title V Air Operation Permit Applications

11. Alternative Methods of Operation
[X] Attached, Document ID: **LR-EU1-J11** [ ] Not Applicable

12. Alternative Modes of Operation (Emissions Trading)
[ ] Attached, Document ID:_____ [X] Not Applicable

13. Identification of Additional Applicable Requirements
[X] Attached, Document ID: **LR-FI-C12** [ ] Not Applicable

14. Compliance Assurance Monitoring Plan
[ ] Attached, Document ID:_____ [X] Not Applicable **See Attachment LR-EU1-J14**

15. Acid Rain Part Application (Hard-copy Required)

[X] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
Attached, Document ID: **LR-FI-C12 – Page 40**

[ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
Attached, Document ID:_____

[ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
Attached, Document ID:_____

[ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
Attached, Document ID:_____

[ ] Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
Attached, Document ID:_____

[ ] Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
Attached, Document ID:_____

[ ] Not Applicable

ATTACHMENT LR-EU2-D

APPLICABLE REQUIREMENTS

ATTACHMENT LR-EU2-D

Applicable Requirements Listing

EMISSION UNIT: EU2: Unit 7 (FFFSG)

FDEP Rules:

Air Pollution Control-General Provisions:
62-204.800(12) (State Only) - Acid Rain Program
62-204.800(13) (State Only) - Allowances
62-204.800(14) (State Only) - Acid Rain Program Monitoring

Stationary Sources-General:

62-210.700(1)	- Malfunction only for FFSG
62-210.700(2)	- FFSG; startup/shut down
62-210.700(3)	- FFSG; sootblowing/load change
62-210.700(4)	- Maintenance
62-210.700(6)	- Excess Emissions; notification

Acid Rain:

62-214.300	- Acid Rain Units (Applicability)
62-214.320	- Acid Rain Units (Application Shield)
62-214.330	- Compliance Options (if 214.430)
62-214.340	- Exemptions (new units, retired units)
62-214.350(2);(3);(6)	- Acid Rain Units (Certification)
62-214.370	- Acid Rain Units (Revisions; correction; potentially applicable if a need arises)
62-214.430	- Acid Rain Units (Compliance Options-if required)

Stationary Sources-Emission Standards:

62-296.405(1)(a)	- FFSG; VE
62-296.405(1)(b)	- FFSG; PM
62-296.405(1)(c)1.j.	- FFSG; Oil-SO_2 (general limit)
62-296.405(1)(e)	- FFSG; Test Methods
62-296.405(1)(f)1.a.(i)	- FFSG; Opacity CEMS exempted for oil/gas units
62-296.405(1)(f)1.b.	- FFSG; SO_2 CEMS exempted for non-controlled units (oil/gas)

Stationary Sources-Emission Monitoring (where stack test is required):

62-297.310(1)	- Test Runs-Mass Emission
62-297.310(2)(b)	- Operating Rate; other than CTs
62-297.310(3)	- Calculation of Emission
62-297.310(4)(a)	- Applicable Test Procedures;Sampling time
62-297.310(4)(b)	- Sample Volume
62-297.310(4)(c)	- Required Flow Rate Range-PM/H_2SO_4/F
62-297.310(4)(d)	- Calibration
62-297.310(4)(e)	- EPA Method 5-only
62-297.310(5)	- Determination of Process Variables
62-297.310(6)(a)	- Permanent Test Facilities-general
62-297.310(6)(c)	- Sampling Ports
62-297.310(6)(d)	- Work Platforms

62-297.310(6)(e)	- Access
62-297.310(6)(f)	- Electrical Power
62-297.310(6)(g)	- Equipment Support
62-297.310(7)(a)2.	- FFSG excess emissions
62-297.310(7)(a)3.	- Permit Renewal Test Required
62-297.310(7)(a)4.	- Annual Test
62-297.310(7)(a)5.	- PM exemption if <400 hrs/yr
62-297.310(7)(a)9.	- FDEP Notification - 15 days
62-297.310(7)(c)	- Waiver of Compliance Test (Fuel Sampling)
62-297.310(8)	- Test Reports

Federal Rules:

Acid Rain-Permits:

40 CFR 72.9(a)	- Permit Requirements
40 CFR 72.9(b)	- Monitoring Requirements
40 CFR 72.9(c)(1)	- SO_2 Allowances-hold allowances
40 CFR 72.9(c)(2)	- SO_2 Allowances-violation
40 CFR 72.9(c)(1)(iii)	- SO_2 Allowances-Phase II Units (listed)
40 CFR 72.9(c)(4)	- SO_2 Allowances-allowances held in ATS
40 CFR 72.9(c)(5)	- SO_2 Allowances-no deduction for 72.9(c)(1)(i)
40 CFR 72.9(e)	- Excess Emission Requirements
40 CFR 72.9(f)	- Recordkeeping and Reporting
40 CFR 72.9(g)	- Liability
40 CFR 72.20(a)	- Designated Representative; required
40 CFR 72.20(b)	- Designated Representative; legally binding
40 CFR 72.20(c)	- Designated Representative; certification requirements
40 CFR 72.21	- Submissions
40 CFR 72.22	- Alternate Designated Representative
40 CFR 72.23	- Changing representatives; owners
40 CFR 72.30(a)	- Requirements to Apply (operate)
40 CFR 72.30(c)	- Requirements to Apply (reapply before expiration)
40 CFR 72.30(d)	- Requirements to Apply (submittal requirements)
40 CFR 72.32	- Permit Shield
40 CFR 72.33(b)	- Dispatch System ID; unit/system ID
40 CFR 72.33(c)	- Dispatch System ID; ID requirements
40 CFR 72.33(d)	- Dispatch System ID; ID change
40 CFR 72.40(a)	- General; compliance plan
40 CFR 72.40(b)	- General; multi-unit compliance options
40 CFR 72.40(c)	- General; conditional approval
40 CFR 72.40(d)	- General; termination of compliance options
40 CFR 72.51	- Permit Shield
40 CFR 72.90	- Annual Compliance Certification

Monitoring Part 75:

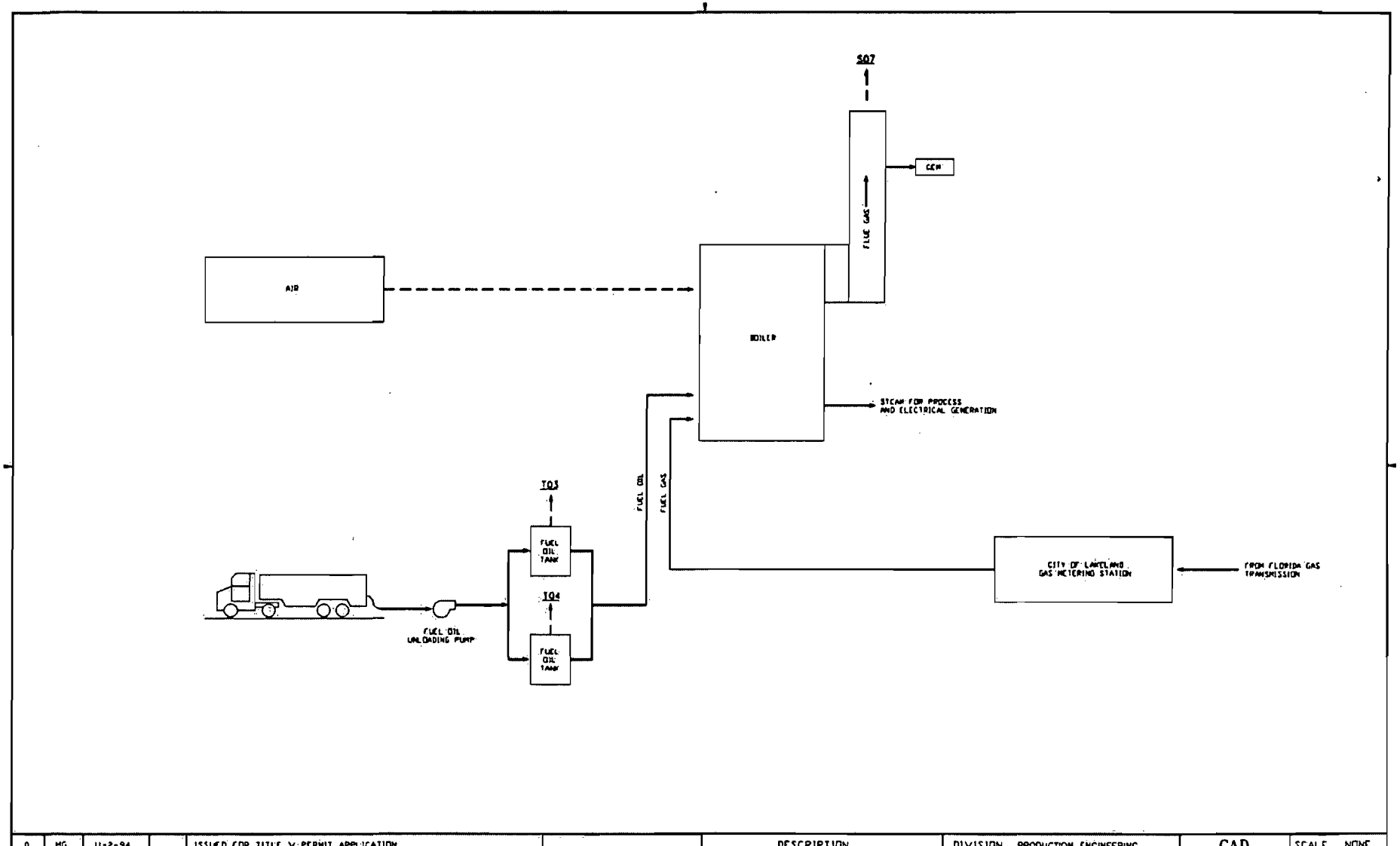
40 CFR 75.4	- Compliance Dates
40 CFR 75.5	- Prohibitions
40 CFR 75.10(a)(1)	- Primary Measurement; SO_2; except 75.11&.16; Subpart D
40 CFR 75.10(a)(2)	- Primary Measurement; NO_x; except 75.12&.17; Subpart E
40 CFR 75.10(a)(3)(i)	- Primary Measurement; CO_2; monitor
40 CFR 75.10(a)(4)	- Primary Measurement; Opacity; except 75.14&.18

40 CFR 75.10(b)	- Primary Measurement; Performance Requirements
40 CFR 75.10(c)	- Primary Measurement; Heat Input; Appendix F
40 CFR 75.10(d)	- Primary Measurement; Hourly Operating; Opacity; SO_2
40 CFR 75.10(f)	- Primary Measurement; Minimum Measurement
40 CFR 75.10(g)	- Primary Measurement; Minimum Recording
40 CFR 75.11(d)	- SO2 Monitoring; Gas- and Oil-fired units
40 CFR 75.12(b)	- NOx Monitoring; Determination of NO_x emission rate; Appendix F
40 CFR 75.13(a)	- CO2 Monitoring; Continuous monitor
40 CFR 75.14(a)	- Opacity Monitoring; Coal and oil units
40 CFR 75.20(a)(5)	- Initial Certification Approval Process; Loss of Certification
40 CFR 75.20(b)	- Recertification Procedures
40 CFR 75.20(c)	- Certification Procedures
40 CFR 75.20(g)	- Exceptions to CEMS; oil/gas/diesel; Appendix D & E
40 CFR 75.21(a)	- QA/QC; CEMS; Appendix B
40 CFR 75.21(b)	- QA/QC; Opacity; Part 51 Appendix M
40 CFR 75.21(c)	- QA/QC; Calibration Gases
40 CFR 75.22	- Reference Methods
40 CFR 75.24	- Out-of-Control Periods; CEMS
40 CFR 75.30(a)(1)	- General Missing Data Procedures; SO_2
40 CFR 75.30(a)(2)	- General Missing Data Procedures; flow
40 CFR 75.30(a)(3)	- General Missing Data Procedures; NO_x
40 CFR 75.30(b)	- General Missing Data Procedures; certified backup monitor
40 CFR 75.30(c)	- General Missing Data Procedures; certified backup monitor
40 CFR 75.32	- Monitoring Data Availability for Missing Data
40 CFR 75.33	- Standard Missing Data Procedures
40 CFR 75.53	- Recordkeeping (special situations)
40 CFR 75.54(a)	- Recordkeeping-general
40 CFR 75.54(b)	- Recordkeeping-operating parameter
40 CFR 75.54(c)	- Recordkeeping-SO_2
40 CFR 75.54(d)	- Recordkeeping-NO_x
40 CFR 75.54(e)	- Recordkeeping-CO_2
40 CFR 75.54(f)	- Recordkeeping-Opacity
40 CFR 75.55	- Monitoring Plan
40 CFR 75.56	- Certification; QA/QC Provisions
40 CFR 75.60	- Reporting Requirements-General
40 CFR 75.61	- Reporting Requirements-Notification cert/recertification
40 CFR 75.63	- Reporting Requirements-Certification/Recertification
40 CFR 75.64(a)	- Reporting Requirements-Quarterly reports; submission
40 CFR 75.64(b)	- Reporting Requirements-Quarterly reports; DR statement
40 CFR 75.64(c)	- Rep. Req.; Quarterly reports; Compliance Certification
40 CFR 75.64(d)	- Rep. Req.; Quarterly reports; Electronic format
40 CFR 75.65	- Opacity Reports
Appendix A-3.	- Performance Specifications
Appendix A-4.	- Data Handling and Acquisition Systems
Appendix A-5.	- Calibration Gases
Appendix A-6.	- Certification Tests and Procedures
Appendix B	- QA/QC Procedures
Appendix C-1.	- Missing Data; SO_2/NOx for controlled sources
Appendix C-2.	- Missing Data; Load-Based Procedure; NO_x & flow

Appendix F	- Conversion Procedures
Appendix G-2.	- Determination of CO_2; from combustion sources
Appendix H	- Traceability Protocol

ATTACHMENT LR-EU2-J1

PROCESS FLOW DIAGRAM



REV. NO.	BY	DATE	APPR.	REVISION
0	MG	11-2-94		ISSUED FOR TITLE V PERMIT APPLICATION
1	MG	5-16-96	MP	CHANGE TITLE
2	MG	5-29-96	MP	ISSUED FOR TITLE V

LAKELAND ELECTRIC & WATER

DESCRIPTION

LAKELAND ELECTRIC & WATER UTILITIES
LARSEN POWER PLANT
UNIT NO. 7
TITLE V PROCESS FLOW DIAGRAM

DIVISION PRODUCTION ENGINEERING
ENGINEER PATTERSON
DRN. BY: MGIEGER
APPR. BY:
DATE 9-19-94

CAD SCALE NONE
PROJ. NO. AIR PERMIT
DWG. NO. LR-EU2-L1/SKL-10
REV. 2

SIZE B

ATTACHMENT LR-EU2-J2

FUEL ANALYSIS
FUEL OIL

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1913 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 630-652-9309 FAX: 630-652-9306
SINCE 1908
SGS Member of the SGS Group (Société Générale de Surveillance)
Committed To Excellence
ADDRESS ALL CORRESPONDENCE TO:
16130 VAN DRUNEN RD.
SOUTH HOLLAND, IL 60473
TEL: (708) 331-2800
FAX: (708) 333-3060
www.comtesco.com

December 18, 2001

CITY OF LAKELAND
3030 E. Lake Parker Dr.
Lakeland, FL 33805
Attn: Steven Parrish

Sample identification by
City of Lakeland

Kind of sample
reported to us Fuel Oil

Sample taken at City of Lakeland

Sample taken by City of Lakeland

Sample ID: Unit #7 Stack Test
Composite Sample
836-01

Date sampled November 29, 2001

Date received December 12, 2001

P.O. No. 15558

Analysis Report No. 71-167169

Page 1 of 1

	As Received
GRAVITY	
Specific at 60/60°F	0.9440
Lb/gallon at 60°F	7.865
°API	18.4
HEATING VALUE	
Btu/lb	18,495
Btu/gal at 60°F	145,463
Sulfur, % Wt.	1.67

METHODS
Gravity: ASTM D 4052; Heating Value: ASTM D 240; Sulfur: ASTM D 4294

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

South Holland Laboratory

MEMBER ACIL

CATALYST AIR MANAGEMENT, INC.
Heat Input and SO2 lb/mmBtu Calculations
City of Lakeland - Charles Larsen Plant

Unit 7

OIL ANALYSIS

SO2

Sulfur =	1.67	%
Density =	7.865	lb/gal
Heating Value =	18495	Btu/lb
SO2 (calculated) =	1.806	lb/mmBtu

Heat Input

	fuel (lb/hr)	heat input (mmBtu/hr)
Average	29,183	539.7

Average Heat Input (calculated) =	539.7	mmBtu/hr
Maximum Permitted Heat Input =	728.0	mmBtu/hr
Minimum Test Heat Input =	655.2	mmBtu/hr

ATTACHMENT LR-EU2-J4

DESCRIPTION OF STACK SAMPLING FACILITIES

ATTACHMENT LR-EU2-J4

DESCRIPTION OF STACK SAMPLING FACILITIES

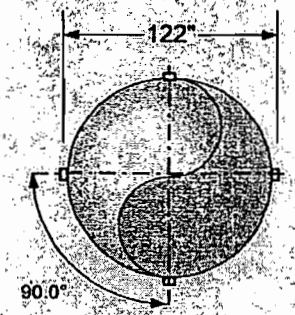
FFFSG #7 (EU2) is required by Permit 1050003-009-AV to perform annual stack testing in accordance with standard EPA reference methods if oil is fired > 400 hr/yr. Pursuant to Rule 62-297.310, F.A.C., the annual stack test required is performed with the required stack sampling facilities. A diagram depicting stack sampling facilities is presented in the proceeding attachment. As specified by rule, the permanent test facilities meet the following:

- The sampling ports have a minimum effective diameter of 3 inches.
- The location of the sampling ports meet Rule 297.345(3)(a)3, F.A.C., requirements (i.e. 2 stack diameters downstream and 0.5 stack diameters upstream of flow disturbances).
- At least two sampling ports, 90 degrees apart have been installed on the circular stack.
- The working platform is at least 24 square feet in area, at least three feet wide, extends180 degrees around the stack, has safety rails, toeboards, and a hinged floor opening attached to it. There are no obstructions 14 inches below the port and 6 inches on either side of the port.
- The sampling access ladder is equipped with a safety equipment.

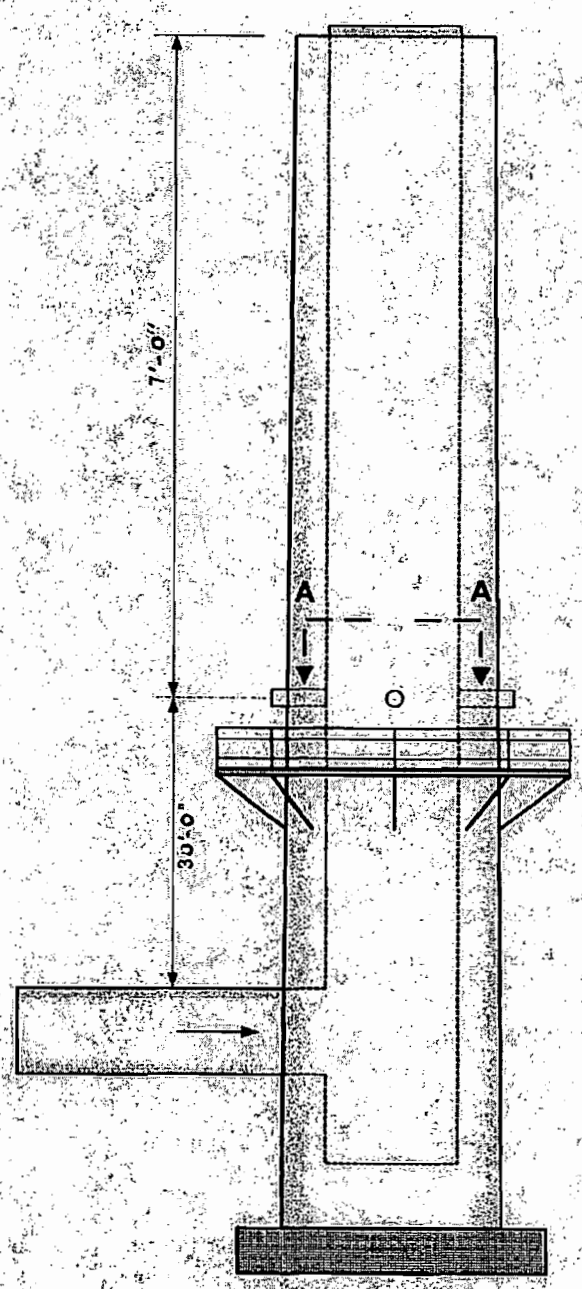
CATALYST AIR MANAGEMENT, INC.

TRAVERSE POINTS (Typ 4 Ports)
(Inches) from inside of stack.

1.	2.56"
2.	8.17"
3.	14.40"
4.	21.59"
5.	30.50"
6.	43.43"



SECTION A - A



TITLE: CITY OF LAKELAND - CHARLES LARSEN PLANT		
DESCRIPTION: UNIT NO. 7 STACK TEST PORT CONFIGURATION		DATE: 2/2/99
SCALE: NONE	DRAWN BY: MJ TAYLOR	REVISED:

ATTACHMENT LR-EU2-J5

COMPLIANCE TEST REPORT

CATALYST
AIR MANAGEMENT, INC.

CITY OF LAKELAND
CHARLES LARSEN POWER PLANT
UNIT 7

EMISSIONS TEST REPORT

CATALYST AIR MANAGEMENT, INC.
REPORT NUMBER 138-043

JANUARY 4, 2002

Prepared for
City of Lakeland
Charles Larsen Power Plant
2002 E. Highway 92
Lakeland, FL 33805

1.0 Introduction

Catalyst Air management, Inc. (Catalyst) was contracted by the City of Lakeland to perform the annual particulate compliance testing for Unit 7 at Charles Larsen Power Plant.

The sampling program was conducted November 29 and 30, 2001. The testing was performed by Josh Nicely, Shawn O'Neal and Steve Webb of Catalyst, with the assistance of personnel assigned by the City of Lakeland. Mr. John Guiseppi of the City of Lakeland coordinated plant operation during the testing.

2.0 Summary of Test Results

A summary of test results developed by this source sampling program is presented in Tables 1 through 4. The summary tables are presented as follows:

TABLE 1
Summary of Particulate Emissions
Charles Larsen Power Plant Unit 7

Source	Particulate (lb/mmBtu)	Permit (lb/mmBtu)
Unit 7 Steady State	0.090	0.10
Unit 7 Soot Blowing	0.115	0.30

TABLE 2
Summary of Visible Emissions
Charles Larsen Unit 7

Source	Average VE (%)	Highest 6 min (%)	Permitted (%)
Unit 7 Steady State	0.0	0.0	20
Unit 7 Soot Blowing	3.8	5.6	60

3.0 Results of Testing

The individual test run results are shown in Tables 3 and 4, and are tabulated in Appendix 1. The results indicate that Unit 7 is in compliance with the emission limits of Permit No. 1050003-004-AV under both steady state and soot blowing conditions.

TABLE 3
ISOKINETIC SUMMARY
Steady State

Client: **City of Lakeland**
Plant: **Charles Larsen Unit 7**
Location: **Stack**

Run Number:		2 SS	3 SS	4 SS
Date:		11/29/01	11/29/01	11/30/09
Run Time:	Start	14:20	16:19	14:30
	End	15:27	17:24	15:34
Unit Load (MW):		52	52	51
Unit Load (MMBTU/HR)):		538.9	539.2	537.9
DN - Nozzle Diameter:		0.254	0.249	0.254
Pbar - Barometric Pressure:		30.19	30.19	30.11
TT - Sampling Time:		60	60	60
VM - Meter Volume:		33.113	34.286	33.474
TM - Avg. Meter Temp (F):		77	77	81
PM - Avg. Delta H (in. of H2O):		1.076	0.954	1.112
Y - Meter Calibration Factor:		1.02	1.02	1.02
VMSTD - Std. Gas Volume (SCF):		33.583	34.777	33.584
Vlc - Volume Water Collected:		58	63	55
%M - Percent Moisture:		7.5	7.9	7.2
Bws - Mole Fraction, Dry:		0.075	0.079	0.072
%CO2 - Carbon Dioxide, Dry:		11.0	11.0	11.0
%O2 - Oxygen, Dry:		6.2	6.2	6.2
%EA - Excess Air		39.6	39.6	39.6
MD - Dry Molecular Weight:		30.01	30.01	30.01
MS - Wet Molecular Weight:		29.10	29.06	29.15
A - Stack Area, SQ.FT:		81.18	81.18	81.18
PS - Static Press. (in. of Hg):		30.20	30.20	30.12
TS - Stack Temp. (F):		276	276	281
CP - Pitot Coefficient:		0.84	0.84	0.84
VS - Stack Gas Velocity (AFPS):		39.8	42.4	41.6
QS - Stack Gas Volume (DSCFM):		129,895	137,765	134,887
QA - Stack Gas Volume (ACFM):		193,880	206,623	202,464
%I - Isokinetic Ratio:		99.5	101.1	95.8
Mg - Catch weight:		107.4	103.7	107.4
Gr/DSCF - Emission Concentration:		0.049	0.046	0.049
LB/MMBtu - Emission Concentration:		0.092	0.086	0.092

Average Gr/DSCF	0.048
Average LB/Mmbtu	**0.090**

TABLE 4
ISOKINETIC SUMMARY
Soot Blowing

Client: **City of Lakeland**
Plant: **Charles Larsen Unit 7**
Location: **Stack**

Run Number:		**1 SB**	**2 SB**	**3 SB**
Date:		11/29/01	11/29/01	11/30/01
Run Time:	Start	8:10	9:31	12:02
	End	9:20	10:36	13:07
Unit Load (MW):		52	52	52
Unit Load (MMBTU/HR)):		541.2	540.9	540.3
DN - Nozzle Diameter:		0.249	0.256	0.253
Pbar - Barometric Pressure:		30.19	30.19	30.11
TT - Sampling Time:		60	60	60
VM - Meter Volume:		33.108	33.284	33.692
TM - Avg. Meter Temp (F):		70	75	96
PM - Avg. Delta H (in. of H2O):		1.028	1.117	1.105
Y - Meter Calibration Factor:		1.02	1.02	1.02
VMSTD - Std. Gas Volume (SCF):		34.006	33.892	32.927
Vlc - Volume Water Collected:		69	76	67
%M - Percent Moisture:		8.7	9.6	8.7
Bws - Mole Fraction, Dry:		0.087	0.096	0.087
%CO2 - Carbon Dioxide, Dry:		11.1	11.0	11.0
%O2 - Oxygen, Dry:		6.2	6.2	6.2
%EA - Excess Air		39.7	39.6	39.6
MD - Dry Molecular Weight:		30.02	30.01	30.01
MS - Wet Molecular Weight:		28.98	28.86	28.96
A - Stack Area, SQ.FT:		81.18	81.18	81.18
PS - Static Press. (in. of Hg):		30.20	30.19	30.12
TS - Stack Temp. (F):		266	270	270
CP - Pitot Coefficient:		0.84	0.84	0.84
VS - Stack Gas Velocity (AFPS):		40.3	41.4	41.2
QS - Stack Gas Volume (DSCFM):		131,377	133,051	133,453
QA - Stack Gas Volume (ACFM):		196,055	201,442	200,729
%I - Isokinetic Ratio:		103.6	96.5	95.7
Mg - Catch weight:		138.0	156.6	107.3
Gr/DSCF - Emission Concentration:		0.062	0.071	0.050
LB/MMBtu - Emission Concentration:		0.117	0.133	0.094

Average Gr/DSCF	0.061
Average LB/Mmbtu	**0.115**

4.0 Description Of Combustion Units

Charles Larsen Unit 7 boiler is a fossil fuel fired electric utility steam generator. The boiler provides steam to the turbine/generator with an output of approximately 50 MW. The unit burns natural gas and No. 6 fuel oil or a combination of the two fuels. The maximum heat input is 728.0 MMBtu/hr for No. 6 fuel oil and 763.0 MMBtu/hr for natural gas. The flue gas is exhausted into the Unit 7 stack.

The Unit 7 stack elevation is approximately 150 feet. The testing location is located on the stack approximately 30 ft above the inlet duct. Four test ports facilitate the sampling. A schematic of the process and stack sampling location is included.

5.0 Sampling Program Procedures

The following test methods were utilized during the test program:

EPA Method 1	Sample and Velocity Traverse for Stationary Sources
EPA Method 2	Determination of Stack Gas Velocity and Volumetric Flow Rate
EPA Method 3	Gas Analysis for CO_2, O_2, Excess Air and Dry Molecular Weight
EPA Method 4	Determination of Moisture Content in Stack Gas
EPA Method 17	Determination of Particulate Emissions from Stationary Sources In-stack Filter

Test runs were conducted in triplicate for all parameters with each being 60 minutes in duration.

5.1 Particulate Matter – EPA Method 17

The particulate emissions were determined in accordance with procedures outlined in EPA Method 17. The flue gas sample is extracted isokinetically from the gas stream and the particulate emissions are determined by gravimetrically determining the amount of particulate matter collected in the nozzle, filter holder and filter. The sampling train consists of the following equipment connected in series:

Stainless steel nozzle and filter holder
30 x 100 glass fiber thimble
A modified Greenburg-Smith impinger containing 100 ml of distilled water
A Greenburg-Smith impinger containing 100 ml of distilled water
A modified Greenburg-Smith impinger, empty
A modified Greenburg-Smith impinger containing approximately 250g of silica gel

The sample volume is measured by passing it through a calibrated dry gas meter. An S-type pitot tube is attached to the probe to measure stack gas velocity and to maintain isokinetic sampling. A K-type thermocouple is also attached to the probe to measure the gas temperature.

After the run, the nozzle and filter holder ahead of the filter are brushed and rinsed with acetone. The washings are retained in labeled, glass sample containers for analysis. The impinger contents are measured for increase in volume. The silica gel is returned to the original tared container and weighed to determine moisture gain.

Particulate matter is determined by using the analytical procedures outlined in EPA Method 17.

a. Dry each filter at 220° F, desiccate to a constant weight and record the results to 0.1 mg.
b. Measure the acetone rinse. Evaporate the acetone rinse in a tared beaker, desiccate to a constant weight and record results to 0.1 mg.

The sampling was conducted in a vertical section of the stack, which is 122 inches in diameter. There are four (4) test ports orientated 90 degrees apart. The test ports are located 30 feet downstream and 7 feet upstream from the nearest flow disturbance, 3 diameters and 0.70 diameters, respectively. The sampling was at six (6) traverse points for each port, 24 total points. Each test point was sampled for 2.5 minutes for a total sample time of 60 minutes.

6.0 Operating Conditions

City of Lakeland personnel monitored operating conditions throughout the duration of the sampling program. The testing was performed November 29 and 30, 2001 with the unit burning 100% No. 6 residual fuel oil. The unit was operating under normal conditions at approximately 52 MW (gross) with an average heat input of 539.7 mmBTU/hr. Plant operating data is contained in Appendix 2. The plant data was provided by John Guiseppi of Lakeland Electric.

7.0 Quality Assurance Procedures

The quality assurance procedures followed during the testing activities followed guidelines set forth by the previous mentioned methods and the EPA Quality Assurance Handbook for Source Sampling. The specific procedures for this test program are listed below.

7.1 Isokinetic Equipment

The sample nozzles were visually inspected and measured across three different diameters to determine the appropriate nozzle diameter.

The S-type pitot tubes were visually inspected and measured to meet the design specifications of EPA Method 2 for a 0.84 pitot coefficient.

Both legs of the pitot tube were leak checked before and after each sample run.

The stack thermocouples were calibrated prior to the testing and a post-test check was performed after the testing project.

The manometer was leveled and zeroed before each sample run.

The dry gas meter is fully calibrated annually using an EPA intermediate standard. Post -test dry gas meter checks were completed to verify the accuracy of the meter Yi.

Pre-test and post-test leak checks were completed and were less than 0.02 cfm at the highest sampling vacuum.

8.0 Discussion

8.1 Chain of Custody

All the field samples, were collected, sealed and transported to the Catalyst office in Knoxville, TN under the supervision of Josh Nicely. The samples were labeled to identify the following:

Client and source
Date
Type of Sample
Run number
Sample location
Sample fraction

8.2 Sampling Conditions and Concerns

Steady State run 1 was voided due to a burner failure. The test run was repeated as soon as the load was increased and stabilized.

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION (All Emissions Units)

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in This Section: (Check one)

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Regulated or Unregulated Emissions Unit? (Check one)

[X] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

[ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

3. Description of Emissions Unit Addressed in This Section (limit to 60 characters):

Combined Cycle Combustion Turbine

4. Emissions Unit Identification Number: [ ] No ID [ ] ID Unknown
ID: **008**

5. Emissions Unit Status Code:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A	**JULY 1992**	**49**	[X]

9. Emissions Unit Comment: (Limit to 500 Characters)

Initial startup date is Emission Unit's commercial in-service date.
Emission unit is a combined cycle unit.
Steam cycle is rated at 30 MW.
Unit is equipped with a direct water spray fogging system to reduce turbine inlet air temperature. See Attachment LR-EU3-A9.

Emissions Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method):

Water Injection

2. Control Device or Method Code(s): **28**

Emissions Unit Details

1. Package Unit:
   Manufacturer: **General Electric** Model Number: **Frame 7EA**
2. Generator Nameplate Rating: **88** MW
3. Incinerator Information:
   Dwell Temperature: °F
   Dwell Time: seconds
   Incinerator Afterburner Temperature: °F

B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:			**1,055**	mmBtu/hr
2. Maximum Incineration Rate:	lb/hr			tons/day
3. Maximum Process or Throughput Rate:				
4. Maximum Production Rate:				
5. Requested Maximum Operating Schedule:				
	24	hours/day	**7**	days/week
	52	weeks/year	**8,760**	hours/year

6. Operating Capacity/Schedule Comment (limit to 200 characters):

Maximum heat input natural gas firing (LHV).
Maximum heat input for residual oil firing is 1,040 mmBtu/hr (LHV).
Inlet temperature of 25 °F.

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

See Attachment LR-EU3-D	

D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? **See Attachment LR-EU3-J1**	2. Emission Point Type Code: **3**	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): **Emission unit can exhaust through either a by-pass stack or heat recovery steam generator (HRSG) stack.**		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: **V**	6. Stack Height: **155** feet	7. Exit Diameter: **16** feet
8. Exit Temperature: **481** °F	9. Actual Volumetric Flow Rate: **1,034,053** acfm	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates: Zone: **17** East (km): **409. 0** North (km): **3102.8**		
14. Emission Point Comment (limit to 200 characters): **Stack parameters shown for HRSG stack oil firing.** **By-pass stack parameters:** **Height: 100 ft** **Diameter: 17.6 ft (equivalent diameter-stack is rectangular 18.3' x 13.3')** **Temperature: 950 °F** **Flow: 1,549,432 acfm**		

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type) (limit to 500 characters): **Internal Combustion Engines – Electric Generation - Distillate Oil (Diesel) – Turbine**		
2. Source Classification Code (SCC): **2-01-001-01**	3. SCC Units: **1,000 gallons**	
4. Maximum Hourly Rate: **8.19**	5. Maximum Annual Rate: **23,915**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: **0.2**	8. Maximum % Ash:	9. Million Btu per SCC Unit: **127.3**
10. Segment Comment (limit to 200 characters): **Permit No. 1050003-009-AV Condition III.D.2**		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type) (limit to 500 characters): **Internal Combustion Engines – Electric Generation – Natural Gas – Turbine**		
2. Source Classification Code (SCC): **2-01-002-01**	3. SCC Units: **Million Cubic Feet**	
4. Maximum Hourly Rate: **1.11**	5. Maximum Annual Rate: **9,728**	6. Estimated Annual Activity Factor:
9. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: **950**
10. Segment Comment (limit to 200 characters): **Maximum percent sulfur: 0.003. Maximum hourly rate based on maximum heat input.**		

F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM			EL
SO_2			EL
NO_X	028		EL
CO			EL
VOC			EL
SAM			EL
PM_{10}			EL

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **26** lb/hour **37** tons/year	4. Synthetically Limited? [**X**]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **0.025 lb/MMBtu** Reference: **Permit No. 1050003-009-AV Condition III.D.9**	7. Emissions Method Code: **0**
8. Calculation of Emissions (limit to 600 characters): **1,040 MMBtu/hr x 0.025 lb/MMBtu = 26 lb/hr** **22 TPY x 2/3 (gas) + 22 TPY (oil) = 36.7 TPY**	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): **Hourly emissions based on oil firing. Annual emissions based on 2,920 hours (1/3 of year) of oil firing and 5,840 hours (2/3 of year) of natural gas firing. Permit No. 1050003-009-AV Conditions III.D.8 and III.D.9.**	

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **0.025 lb/MMBtu**	4. Equivalent Allowable Emissions: **26** lb/hour **22** tons/year
5. Method of Compliance (limit to 60 characters): **Annual compliance test, EPA Method 5/5B or 17 if > 10% and > 400 hr/yr oil-firing**	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): **Permit No. 1050003-009-AV Conditions III.D.9 and III.D.31. Test required if oil firing > 400 hr/yr. Established as BACT for oil firing. Does not include allowance for excess emissions for startup, shutdown, and malfunction [FDEP Rule 62-210.700(1)].**	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **26** lb/hour **37** tons/year	4. Synthetically Limited? [**X**]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **0.025 lb/MMBtu** Reference: **Permit No. 1050003-009-AV Condition III.D.9**	7. Emissions Method Code: **0**

8. Calculation of Emissions (limit to 600 characters):

1,040 MMBtu/hr x 0.025 lb/MMBtu = 26 lb/hr

22 TPY x 2/3 (gas) + 22 TPY (oil) = 36.7 TPY

9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):

Hourly emissions based on oil firing. Annual emissions based on 2,920 hours (1/3 of year) of oil firing and 5,840 hours (2/3 of year) of natural gas firing. Permit No. 1050003-009-AV Conditions III.D.8 and III.D.9.

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **0.006 lb/MMBtu**	4. Equivalent Allowable Emissions: **6.3** lb/hour **22** tons/year

5. Method of Compliance (limit to 60 characters):

None

6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):
Permit No. 1050003-009-AV Condition III.D.8.

Established as BACT for natural gas firing. Does not include allowance for excess emissions for startup, shutdown, and malfunction [FDEP Rule 62-210.700(1)].

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **SO_2**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **211.4** lb/hour **317.2** tons/year	4. Synthetically Limited? [**X**]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **0.2% Sulfur Fuel** Reference: **Permit No. 1050003-009-AV Condition III.D.7**	7. Emissions Method Code: **0**

8. Calculation of Emissions (limit to 600 characters):

52,846 lb/hr x 0.002 lb/lb fuel x 2 lb SO_2/lb S = 211.4 lb/hr (oil with 19,680 Btu/lb)

307 TPY (oil) + 8.6 TPY x 2/3 (gas) = 317.2 TPY

9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):

Hourly emissions based on oil firing. Annual emissions based on 2,920 hours (1/3 of year) of oil firing and 5,840 hours (2/3 of year) of natural gas firing. Permit No. 1050003-009-AV Conditions III.D.6 and III.D.7.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **0.2% Sulfur Fuel**	4. Equivalent Allowable Emissions: **211** lb/hour **307** tons/year
5. Method of Compliance (limit to 60 characters): **Fuel oil analysis**	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): **Permit No. 1050003-009-AV Conditions III.D.7 and III.D.29.** **Established as BACT for oil firing.**	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **SO_2**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **211.4** lb/hour **317.2** tons/year	4. Synthetically Limited? [**X**]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **0.2% Sulfur Fuel** Reference: **Permit No. 1050003-009-AV Condition III.D.7**	7. Emissions Method Code: **0**
8. Calculation of Emissions (limit to 600 characters): **52,846 lb/hr x 0.002 lb/lb fuel x 2 lb SO_2/lb S = 211.4 lb/hr (oil with 19,680 Btu/lb)** **307 TPY (oil) + 8.6 TPY x 2/3 (gas) = 317.2 TPY**	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): **Hourly emissions based on oil firing. Annual emissions based on 2,920 hours (1/3 of year) of oil firing and 5,840 hours (2/3 of year) of natural gas firing. Permit No. 1050003-009-AV Conditions III.D.6 and III.D.7.**	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **0.0019 lb/MMBtu**	4. Equivalent Allowable Emissions: **2** lb/hour **8.6** tons/year
5. Method of Compliance (limit to 60 characters): **Custom fuel monitoring schedule**	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): **0.0019 lb/MMBtu; Applicant Requested Limit** **Permit No. 1050003-009-AV Conditions III.D.6 and III.D.24.** **Established as BACT for gas firing.**	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **NOx**	2. Total Percent Efficiency of Control:

3. Potential Emissions: **176** lb/hour **563** tons/year	4. Synthetically Limited? [**X**]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **25 ppmvd/42 ppmvd @15% O_2** Reference: **Permit No. 1050003-009-AV Conditions III.D.4/5**	7. Emissions Method Code: **0**

8. Calculation of Emissions (limit to 600 characters):

Lb/hr = NOx (ppm) x {[20.9 x (1 – Moisture(%) / 100)] – O_2(%)} x 2,116.8 lb/ft^2 x Volume Flow (acfm) x 46 (mole wt NO_x) x 60 min/hr / [1545 x (CT Temp ($^\circ$F) + 460 $^\circ$F) x 5.9 x 1,000,000 (ppm)]

Basis, ppmvd @15% O_2: 42.0; Moisture (%); 7.25; Oxygen (%): 13.44; Volume Flow (acfm): 1,549,432; Temperature ($^\circ$F): 950; lb/hr: 175.9
425 TPY x 2/3 (gas) + 244 TPY (oil) = 563 TPY

9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):

Hourly emissions based on oil firing. Annual emissions based on 2,920 hours (1/3 of year) of oil firing and 5,840 hours (2/3 of year) of natural gas firing.
Permit No. 1050003-009-AV Conditions III.D.4 and III.D.5.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **42 ppmvd**	4. Equivalent Allowable Emissions: **176** lb/hour **244** tons/year

5. Method of Compliance (limit to 60 characters):

Annual Compliance Test; EPA Method 7E or 20

6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):
Requested Allowable Emissions and Units corrected to 15% O_2.

Permit No. 1050003-009-AV Conditions III.D.5 and III.D.28.

Established as BACT for oil firing.

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **NOx**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **176** lb/hour **563** tons/year	4. Synthetically Limited? [**X**]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **25 ppmvd/42 ppmvd @15% O_2** Reference: **Permit No. 1050003-009-AV Conditions III.D.4/5**	7. Emissions Method Code: **0**
8. Calculation of Emissions (limit to 600 characters): **Lb/hr = NOx (ppm) x {[20.9 x (1 – Moisture(%) / 100)] – O_2(%)} x 2,116.8 lb/ft^2 x Volume Flow (acfm) x 46 (mole wt NO_x) x 60 min/hr / [1545 x (CT Temp (°F) + 460 °F) x 5.9 x 1,000,000 (ppm)]** **Basis, ppmvd @15% O_2: 42.0; Moisture (%); 7.25; Oxygen (%): 13.44; Volume Flow (acfm): 1,549,432; Temperature (°F): 950; lb/hr: 175.9** **425 TPY x 2/3 (gas) + 244 TPY (oil) = 563 TPY**	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): **Hourly emissions based on oil firing. Annual emissions based on 2,920 hours (1/3 of year) of oil firing and 5,840 hours (2/3 of year) of natural gas firing. Permit No. 1050003-009-AV Conditions III.D.4 and III.D.5.**	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **25 ppmvd**	4. Equivalent Allowable Emissions: **105** lb/hour **425** tons/year
5. Method of Compliance (limit to 60 characters): **Annual Compliance Test; EPA Method 7E or 20**	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): **Requested Allowable Emissions and Units corrected to 15% O_2.** **Permit No. 1050003-009-AV Conditions III.D.4 and III.D.28.** **Established as BACT for gas firing.**	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **CO**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **59** lb/hour **254** tons/year	4. Synthetically Limited? [**X**]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **25 ppmvd @15% O_2** Reference: **Permit No. 1050003-009-AV Condition III.D.14**	7. Emissions Method Code: **0**

8. Calculation of Emissions (limit to 600 characters):

Lb/hr = CO (ppm) x [1 – Moisture(%) / 100)] – O_2(%)} x 2,116.8 lb/ft^2 x Volume Flow (acfm) x 28 (mole wt CO) x 60 min/hr / [1545 x (CT Temp (°F) + 460 °F) x 1,000,000 (ppm)]

Basis, ppmvd @15% O_2: 25.0; Moisture (%); 7.25; Oxygen (%): 13.44; Volume Flow (acfm): 1,549,432; Temperature (°F): 950; lb/hr: 58.6

232 TPY x 2/3 (gas) + 79 TPY (oil) = 254 TPY

9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):

Hourly emissions based on oil firing. Annual emissions based on 2,920 hours (1/3 of year) of oil firing and 5,840 hours (2/3 of year) of natural gas firing. Permit No. 1050003-009-AV Condition III.D.14

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **79 TPY**	4. Equivalent Allowable Emissions: **59** lb/hour **79** tons/year

5. Method of Compliance (limit to 60 characters):

None

6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):

Permit No. 1050003-009-AV Condition III.D.14.

Established as BACT for oil firing.

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **CO**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **59** lb/hour **254** tons/year	4. Synthetically Limited? [**X**]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **25 ppmvd @15% O_2** Reference: **Permit No. 1050003-009-AV Condition III.D.14**	7. Emissions Method Code: **0**

8. Calculation of Emissions (limit to 600 characters):

Lb/hr = CO (ppm) x [1 – Moisture(%) / 100)] – O_2(%)} x 2,116.8 lb/ft^2 x Volume Flow (acfm) x 28 (mole wt CO) x 60 min/hr / [1545 x (CT Temp (°F) + 460 °F) x 1,000,000 (ppm)]

Basis, ppmvd @15% O_2: 25.0; Moisture (%); 7.25; Oxygen (%): 13.44; Volume Flow (acfm): 1,549,432; Temperature (°F): 950; lb/hr: 58.6

232 TPY x 2/3 (gas) + 79 TPY (oil) = 254 TPY

9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):

Hourly emissions based on oil firing. Annual emissions based on 2,920 hours (1/3 of year) of oil firing and 5,840 hours (2/3 of year) of natural gas firing.
Permit No. 1050003-009-AV Condition III.D.14

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **232 TPY**	4. Equivalent Allowable Emissions: **58** lb/hour **232** tons/year

5. Method of Compliance (limit to 60 characters):

None

6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):

Permit No. 1050003-009-AV Condition III.D.14.

Established as BACT for gas firing.

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **VOC**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **4.7** lb/hour **28** tons/year	4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **3.5 ppmvd / 1.4 ppmvd** Reference: **Title V Permit Application, June 1996**	7. Emissions Method Code: **0**
8. Calculation of Emissions (limit to 600 characters): **Lb/hr = [VOC (ppm) x [1 – Moisture(%) / 100] x 2,116.8 lb/ft^2 x Volume Flow (acfm) x 16 (mole wt as methane) x 60 min/hr] / [1545 x (CT Temp (°F) + 460 °F) x 1,000,000 (ppm)]** **Basis, ppmvd @15% O_2: 3.5; Moisture (%); 7.25; Volume Flow (acfm): 1,549,432; Temperature (°F): 950; lb/hr: 4.7** **9 TPY x 2/3 (gas) + 22 TPY (oil) = 28 TPY**	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): **Hourly emissions based on oil firing. Annual emissions based on 2,920 hours (1/3 of year) of oil firing and 5,840 hours (2/3 of year) of natural gas firing.**	

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **0.0045 lb/MMBtu**	4. Equivalent Allowable Emissions: **4.7** lb/hour **22** tons/year
5. Method of Compliance (limit to 60 characters): **None**	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): **0.0045 lb/MMBtu; Applicant Requested Limit.** **Permit No. 1050003-009-AV Condition III.D.13.** **Oil Firing.**	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **VOC**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **4.7** lb/hour **28** tons/year	4. Synthetically Limited? [**X**]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **3.5 ppmvd / 1.4 ppmvd** Reference: **Title V Permit Application, June 1996**	7. Emissions Method Code: **0**

8. Calculation of Emissions (limit to 600 characters):

Lb/hr = [VOC (ppm) x [1 – Moisture(%) / 100] x 2,116.8 lb/ft^2 x Volume Flow (acfm) x 16 (mole wt as methane) x 60 min/hr] / [1545 x (CT Temp (°F) + 460 °F) x 1,000,000 (ppm)]

Basis, ppmvd @15% O_2: 3.5; Moisture (%); 7.25; Volume Flow (acfm): 1,549,432; Temperature (°F): 950; lb/hr: 4.7

9 TPY x 2/3 (gas) + 22 TPY (oil) = 28 TPY

9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):

Hourly emissions based on oil firing. Annual emissions based on 2,920 hours (1/3 of year) of oil firing and 5,840 hours (2/3 of year) of natural gas firing.

Allowable Emissions Allowable Emissions **2** of **2**

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **0.0018 lb/MMBtu**	4. Equivalent Allowable Emissions: **1.9** lb/hour **9** tons/year
5. Method of Compliance (limit to 60 characters): **None**	

6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):
0.0018 lb/MMBtu; Applicant Requested Limit.

Permit No. 1050003-009-AV Condition III.D.13.

Gas Firing.

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **SAM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **6.3** lb/hour **9.7** tons/year	4. Synthetically Limited? [**X**]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **0.2% Sulfur Oil** Reference: **Permit No. 1050003-009-AV Condition III.D.11**	7. Emissions Method Code: **0**
8. Calculation of Emissions (limit to 600 characters): **Lb/hr for oil firing.** **9.13 TPY (oil) + 0.8 TPY x 2/3 (gas) = 9.7 TPY**	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions **1** of **2**

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **0.2 % Sulfur Oil; 0.006 lb/MMBtu**	4. Equivalent Allowable Emissions: **6.3** lb/hour **9.13** tons/year
5. Method of Compliance (limit to 60 characters): **Fuel Oil Analysis**	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): **0.006 lb/MMBtu; Applicant Requested Limit.** **Oil Firing; See Permit Application Requested Conditions for SO_2.** **Permit No. 1050003-009-AV Conditions III.D.11 and III.D.32.**	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **SAM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **6.3** lb/hour **9.7** tons/year	4. Synthetically Limited? [**X**]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **0.2% Sulfur Oil** Reference: **Permit No. 1050003-009-AV Condition III.D.11**	7. Emissions Method Code: **0**
8. Calculation of Emissions (limit to 600 characters): **Lb/hr for oil firing.** **9.13 TPY (oil) + 0.8 TPY x 2/3 (gas) = 9.7 TPY**	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **1.73 x 10^{-4} lb/MMBtu**	4. Equivalent Allowable Emissions: **0.18** lb/hour **0.8** tons/year
5. Method of Compliance (limit to 60 characters): **Fuel Sampling**	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): **1.73 x 10^{-4} lb/MMBtu; Applicant Requested Limit.** **Natural Gas Firing; See Permit Application Requested Conditions for SO_2.** **Permit No. 1050003-009-AV Conditions III.D.10 and III.D.32.**	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **PM_{10}**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **26** lb/hour **37** tons/year	4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **0.025 lb/MMBtu** Reference: **Permit No. 1050003-009-AV Condition III.D.9**	7. Emissions Method Code: **0**
8. Calculation of Emissions (limit to 600 characters): **1,040 MMBtu/hr x 0.025 lb/MMBtu = 26 lb/hr** **22 TPY x 2/3 (gas) + 22 TPY (oil) = 36.7 TPY**	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): **Hourly emissions based on oil firing. Annual emissions based on 2,920 hours (1/3 of year) of oil firing and 5,840 hours (2/3 of year) of natural gas firing. Permit No. 1050003-009-AV Conditions III.D.8 and III.D.9.**	

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **0.025 lb/MMBtu**	4. Equivalent Allowable Emissions: **26** lb/hour **22** tons/year
5. Method of Compliance (limit to 60 characters): **Annual compliance test, EPA Method 5/5B or 17 if > 10% and > 400 hr/yr oil-firing**	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): **Permit No. 1050003-009-AV Conditions III.D.9 and III.D.31. Test required if oil firing > 400 hr/yr. Established as BACT for oil firing. Does not include allowance for excess emissions for startup, shutdown, and malfunction [FDEP Rule 62-210.700(1)].**	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **PM_{10}**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **26** lb/hour **37** tons/year	4. Synthetically Limited? [**X**]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **0.025 lb/MMBtu** Reference: **Permit No. 1050003-009-AV Condition III.D.9**	7. Emissions Method Code: **0**
8. Calculation of Emissions (limit to 600 characters): **1,040 MMBtu/hr x 0.025 lb/MMBtu = 26 lb/hr** **22 TPY x 2/3 (gas) + 22 TPY (oil) = 36.7 TPY**	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): **Hourly emissions based on oil firing. Annual emissions based on 2,920 hours (1/3 of year) of oil firing and 5,840 hours (2/3 of year) of natural gas firing. Permit No. 1050003-009-AV Conditions III.D.8 and III.D.9.**	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **0.006 lb/MMBtu**	4. Equivalent Allowable Emissions: **6.3** lb/hour **22** tons/year
5. Method of Compliance (limit to 60 characters): **None**	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): **Permit No. 1050003-009-AV Condition III.D.8.** **Established as BACT for natural gas firing. Does not include allowance for excess emissions for startup, shutdown, and malfunction [FDEP Rule 62-210.700(1)].**	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation 1 of 2

1. Visible Emissions Subtype: **VE10**	2. Basis for Allowable Opacity: [ ] Rule [X] Other
3. Requested Allowable Opacity: Normal Conditions: **10** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: **Annual VE Test EPA Method 9**	
5. Visible Emissions Comment (limit to 200 characters): **Established as BACT limit.** **Permit No. 1050003-009-AV Condition III.D.12.**	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor 1 of 4

1. Parameter Code: **EM**	2. Pollutant(s): **NOX**
3. CMS Requirement:	[X] Rule [ ] Other
4. Monitor Information: Manufacturer: **Advanced Pollution Inst.** Model Number: **252** Serial Number: **132**	
5. Installation Date: **28 NOVEMBER 1994**	6. Performance Specification Test Date: **12 DECEMBER 1995**
7. Continuous Monitor Comment (limit to 200 characters): **CEM required pursuant to 40 CFR Part 75.**	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation 2 of 2

1. Visible Emissions Subtype: **VE99**	2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: **100** % Maximum Period of Excess Opacity Allowed: **60** min/hour	
4. Method of Compliance: **None**	
5. Visible Emissions Comment (limit to 200 characters): **Not to exceed 2 hr / 24 hr during malfunction. Permit No. 1050003-009-AV Condition III.D.18** **Excess emissions for startup, shutdown with good operating practices. Permit No. 1050003-009-AV Condition III.D.19**	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor 2 of 4

1. Parameter Code: **EM**	2. Pollutant(s): **NOX**
3. CMS Requirement: [ ] Rule [X] Other	
4. Monitor Information: Manufacturer: **Advanced Pollution Inst.** Model Number: **252** Serial Number: **120**	
5. Installation Date: **28 NOVEMBER 1994**	6. Performance Specification Test Date: **12 DECEMBER 1995**
7. Continuous Monitor Comment (limit to 200 characters): **Redundant Backup**	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment (limit to 200 characters):	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor 3 of 4

1. Parameter Code: O_2	2. Pollutant(s):
3. CMS Requirement:	[X] Rule [ ] Other
4. Monitor Information: Manufacturer: **Graseby STI** Model Number: **DP0802** Serial Number: **1511-1-8**	
5. Installation Date: **28 NOVEMBER 1994**	6. Performance Specification Test Date: **12 DECEMBER 1995**
7. Continuous Monitor Comment (limit to 200 characters): **Required pursuant to 40 CFR Part 75 for dilution with NOx monitors.**	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment (limit to 200 characters):	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor 4 of 4

1. Parameter Code: **WTF**	2. Pollutant(s):
3. CMS Requirement:	[X] Rule [ ] Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
5. Installation Date: **07 JULY 1992**	6. Performance Specification Test Date:
7. Continuous Monitor Comment (limit to 200 characters): **Required by 40 CFR 60.334, WTF ratio monitored by CT control system as part of DCS. Pollutant emitted; NOx.**	

J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements

1. Process Flow Diagram
   [X] Attached, Document ID: LR-EU3-J1 [ ] Not Applicable [ ] Waiver Requested

2. Fuel Analysis or Specification
   [X] Attached, Document ID: LR-EU3-J2 [ ] Not Applicable [ ] Waiver Requested

3. Detailed Description of Control Equipment
   [X] Attached, Document ID: LR-EU3-J3 [ ] Not Applicable [ ] Waiver Requested

4. Description of Stack Sampling Facilities
   [X] Attached, Document ID: LR-EU3-J4 [ ] Not Applicable [ ] Waiver Requested

5. Compliance Test Report
   [X] Attached, Document ID: LR-EU3-J5
   [ ] Previously submitted, Date: _____
   [ ] Not Applicable

6. Procedures for Startup and Shutdown
   [X] Attached, Document ID: LR-EU3-J6[ ] Not Applicable [ ] Waiver Requested

7. Operation and Maintenance Plan
   [ ] Attached, Document ID: _____ [X] Not Applicable [ ] Waiver Requested

8. Supplemental Information for Construction Permit Application
   [ ] Attached, Document ID: _____ [X] Not Applicable

9. Other Information Required by Rule or Statute
   [ ] Attached, Document ID: _____ [X] Not Applicable

10. Supplemental Requirements Comment:

Additional Supplemental Requirements for Title V Air Operation Permit Applications

11. Alternative Methods of Operation
[X] Attached, Document ID: **LR-EU3-J11** [ ] Not Applicable

12. Alternative Modes of Operation (Emissions Trading)
[ ] Attached, Document ID:_____ [X] Not Applicable

13. Identification of Additional Applicable Requirements
[X] Attached, Document ID: **LR-FI-C12** [ ] Not Applicable

14. Compliance Assurance Monitoring Plan
[ ] Attached, Document ID:_____ [X] Not Applicable **See Attachment LR-EU3-J14**

15. Acid Rain Part Application (Hard-copy Required)

[X] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
Attached, Document ID: **LR-FI-C12 – Page 40**

[ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
Attached, Document ID:_____

[ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
Attached, Document ID:_____

[ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
Attached, Document ID:_____

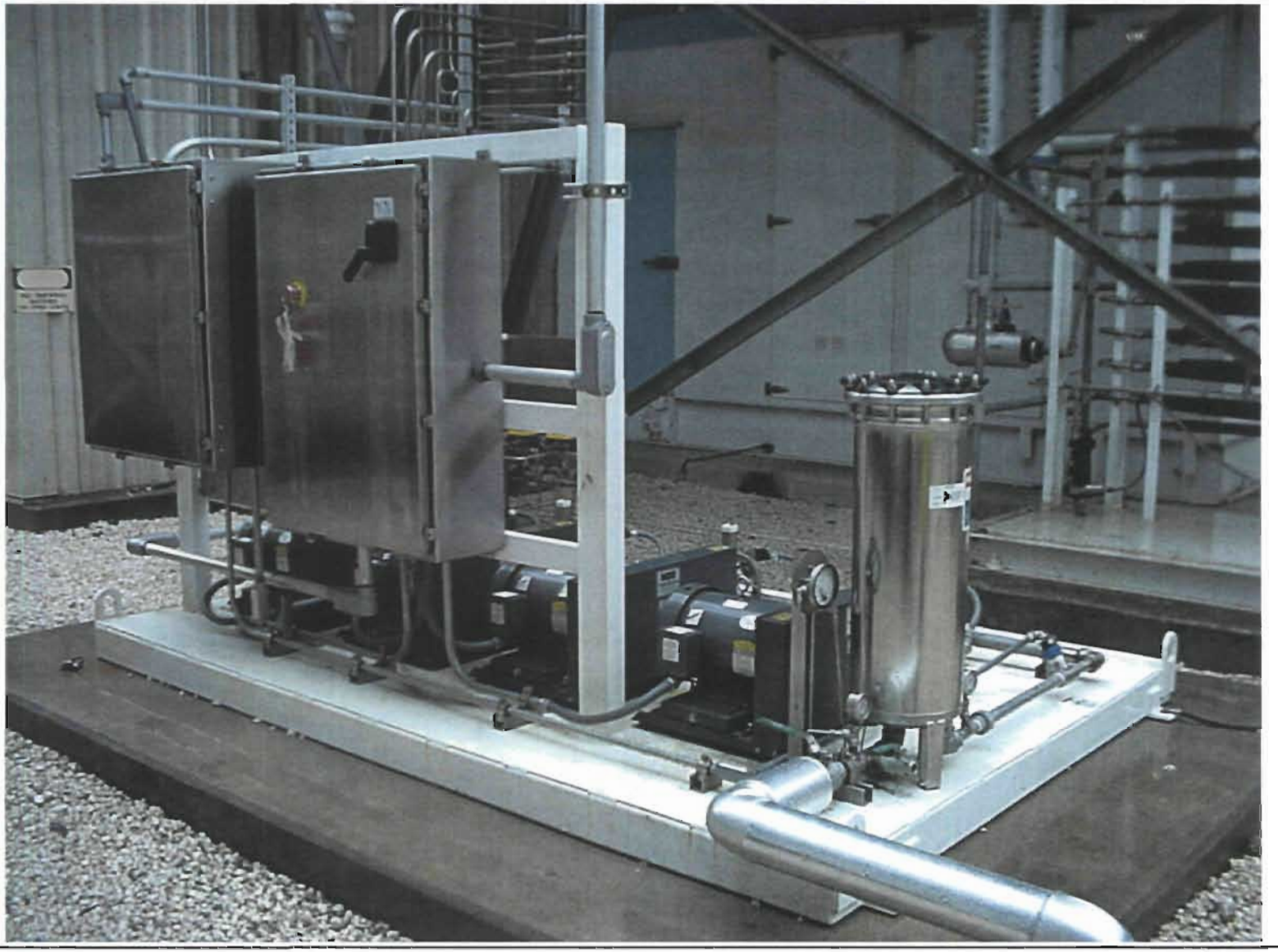
[ ] Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
Attached, Document ID:_____

[ ] Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
Attached, Document ID:_____

[ ] Not Applicable

ATTACHMENT LR-EU3-A9

EMISSIONS UNIT COMMENT



Attachment LR-EU3-A9
Direct Water Spray Fogging System - Combined Cycle Unit 8
Charles Larsen Memorial Power Plant Photos

Source: Golder, 2002.

Golder Associates

ATTACHMENT LR-EU3-D

APPLICABLE REQUIREMENTS

ATTACHMENT LR-EU3-D

Applicable Requirements Listing

EMISSION UNIT ID: EU3 – Larsen Plant – Combined Cycle Unit 8

FDEP Rules:

Air Pollution Control-General Provisions:

62-204.800(7)(b)37. (State Only)	NSPS Subpart GG
62-204.800(7)(c) (State Only)	NSPS authority
62-204.800(7)(d)(State Only)	NSPS General Provisions
62-204.800(12) (State Only)	Acid Rain Program
62-204.800(13) (State Only)	Allowances
62-204.800(14) (State Only)	Acid Rain Program Monitoring
62-204.800(16) (State Only)	Excess Emissions (Potentially applicable over term of permit)

Stationary Sources-General:

62-210.650	Circumvention; EUs with control device
62-210.700(1)	Excess Emissions;
62-210.700(4)	Excess Emissions; poor maintenance
62-210.700(6)	Excess Emissions; notification

Acid Rain:

62-214.300	All Acid Rain Units (Applicability)
62-214.320	All Acid Rain Units (Application Shield)
62-214.330(1)(a)	Compliance Options (if 214.430)
62-214.340	Exemptions (retired units)
62-214.350(2);(3);(5);(6)	All Acid Rain Units (Certification)
62-214.370	All Acid Rain Units (Revisions; correction; potentially applicable if a need arises)
62-214.430	All Acid Rain Units (Compliance Options-if required)

Stationary Sources-Emission Standards:

62-296.320(4)(b)(State Only)	CTs/Diesel Units

Stationary Sources-Emission Monitoring (where stack test is required):

62-297.310(1)	All Units (Test Runs-Mass Emission)
62-297.310(2)	All Units (Operating Rate)
62-297.310(3)	All Units (Calculation of Emission)
62-297.310(4)	All Units (Applicable Test Procedures)
62-297.310(5)	All Units (Determination of Process Variables)
62-297.310(6)(a)	All Units (Permanent Test Facilities-general)
62-297.310(6)(c)	All Units (Sampling Ports)
62-297.310(6)(d)	All Units (Work Platforms)
62-297.310(6)(e)	All Units (Access)
62-297.310(6)(f)	All Units (Electrical Power)
62-297.310(6)(g)	All Units (Equipment Support)
62-297.310(7)(a)1.	Applies mainly to CTs/Diesels

62-297.310(7)(a)3.	Permit Renewal Test Required
62-297.310(7)(a)4.	Annual Test
62-297.310(7)(a)5.	PM exemption if <400 hrs/yr
62-297.310(7)(a)8.	VE Compliance Test if > 400 hrs/yr
62-297.310(7)(a)9.	FDEP Notification - 15 days
62-297.310(7)(c)	Waiver of Compliance Tests (Fuel Sampling)
62-297.310(8)	Test Reports

Federal Rules:

NSPS Subpart GG:	
40 CFR 60.332(a)(1)	NO_x for Electric Utility CTs
40 CFR 60.332(a)(3)	NO_x for Electric Utility CTs
40 CFR 60.333	SO_2 limits
40 CFR 60.334	Monitoring of Operations (Custom Monitoring for Gas)
40 CFR 60.335	Test Methods
NSPS General Requirements:	
40 CFR 60.7(a)(1)	Notification of Construction
40 CFR 60.7(a)(3)	Notification of Actual Start-Up
40 CFR 60.7(a)(4)	Notification and Recordkeeping (Physical/Operational Cycle)
40 CFR 60.7(a)(5)	Notification of CEM Demonstration
40 CFR 60.7(b)	Recordkeeping (startup/shutdown/malfunction)
40 CFR 60.7(c)	Notification and Recordkeeping (startup/shutdown/malfunction)
40 CFR 60.7(d)	Notification and Recordkeeping (startup/shutdown/malfunction)
40 CFR 60.7(f)	Recordkeeping (maintain records-2 yrs)
40 CFR 60.8(a)	Performance Test Requirements
40 CFR 60.8(b)	Performance Test Requirements
40 CFR 60.8(c)	Performance Tests (representative conditions)
40 CFR 60.8(d)	Performance Test Notification
40 CFR 60.8(e)	Provide Stack Sampling Facilities
40 CFR 60.8(f)	Test Runs
40 CFR 60.11(a)	Compliance (ref. S. 60.8 or Subpart; other than opacity)
40 CFR 60.11(b)	Compliance (opacity determined EPA Method 9)
40 CFR 60.11(c)	Compliance (opacity; excludes startup/shutdown/malfunction)
40 CFR 60.11(d)	Compliance (maintain air pollution control equip.)
40 CFR 60.11(e)(2)	Compliance (opacity; ref. S. 60.8)
40 CFR 60.12	Circumvention
40 CFR 60.13(a)	Monitoring (Appendix B; Appendix F)
40 CFR 60.13(d)(1)	Monitoring (CEMS; span, drift, etc.)
40 CFR 60.13(e)	Monitoring (frequency of operation)
40 CFR 60.13(f)	Monitoring (frequency of operation)
Acid Rain-Permits:	
40 CFR 72.9(a)	Permit Requirements
40 CFR 72.9(b)	Monitoring Requirements
40 CFR 72.9(c)(1)	SO_2 Allowances-hold allowances
40 CFR 72.9(c)(2)	SO_2 Allowances-violation
40 CFR 72.9(c)(3)(iv)	SO_2 Allowances-Phase II Units
40 CFR 72.9(c)(4)	SO_2 Allowances-allowances held in ATS

40 CFR 72.9(c)(5)	SO_2 Allowances-no deduction for 72.9(c)(1)(i)
40 CFR 72.9(e)	Excess Emission Requirements
40 CFR 72.9(f)	Recordkeeping and Reporting
40 CFR 72.9(g)	Liability
40 CFR 72.20(a)	Designated Representative; required
40 CFR 72.20(b)	Designated Representative; legally binding
40 CFR 72.20(c)	Designated Representative; certification requirements
40 CFR 72.21	Submissions
40 CFR 72.22	Alternate Designated Representative
40 CFR 72.23	Changing representatives; owners
40 CFR 72.24	Certificate of representation
40 CFR 72.30(a)	Requirements to Apply
40 CFR 72.30(b)(2)	Requirements to Apply (Phase II-Complete)
40 CFR 72.30(c)	Requirements to Apply (reapply before expiration)
40 CFR 72.30(d)	Requirements to Apply (submittal requirements)
40 CFR 72.31	Information Requirements; Acid Rain Applications
40 CFR 72.32	Permit Application Shield
40 CFR 72.33(b)	Dispatch System ID;unit/system ID
40 CFR 72.33(c)	Dispatch System ID;ID requirements
40 CFR 72.33(d)	Dispatch System ID;ID change
40 CFR 72.40(a)	General; compliance plan
40 CFR 72.40(b)	General; multi-unit compliance options
40 CFR 72.40(d)	General; termination of compliance options
40 CFR 72.51	Permit Shield
40 CFR 72.90	Annual Compliance Certification
Allowances:	
40 CFR 73.33(a),(c)	Authorized account representative
40 CFR 73.35(c)(1)	Compliance: ID of allowances by serial number
Monitoring Part 75:	
40 CFR 75.4	Compliance Dates;
40 CFR 75.5	Prohibitions
40 CFR 75.10(a)(1)	Primary Measurement; SO_2;
40 CFR 75.10(a)(2)	Primary Measurement; NO_x;
40 CFR 75.10(a)(3)(iii)	Primary Measurement; CO_2; O_2 monitor
40 CFR 75.10(b)	Primary Measurement; Performance Requirements
40 CFR 75.10(c)	Primary Measurement; Heat Input; Appendix F
40 CFR 75.10(f)	Primary Measurement; Minimum Measurement
40 CFR 75.10(g)	Primary Measurement; Minimum Recording
40 CFR 75.11(d)	SO_2 Monitoring; Gas- and Oil-fired units
40 CFR 75.11(e)	SO_2 Monitoring; Gaseous firing
40 CFR 75.12(a)	NO_x Monitoring; Coal; Non-peaking oil/gas units
40 CFR 75.12(c)	NO_x Monitoring; Determination of NO_x emission rate; Appendix F
40 CFR 75.13(b)	CO_2 Monitoring; Appendix G
40 CFR 75.13(c)	CO_2 Monitoring; Appendix F
40 CFR 75.14(c)	Opacity Monitoring; Gas units; exemption
40 CFR 75.20(a)	Initial Certification Approval Process; Loss of Certification
40 CFR 75.20(b)	Recertification Procedures (if recertification necessary)
40 CFR 75.20(c)	Certification Procedures (if recertification necessary)

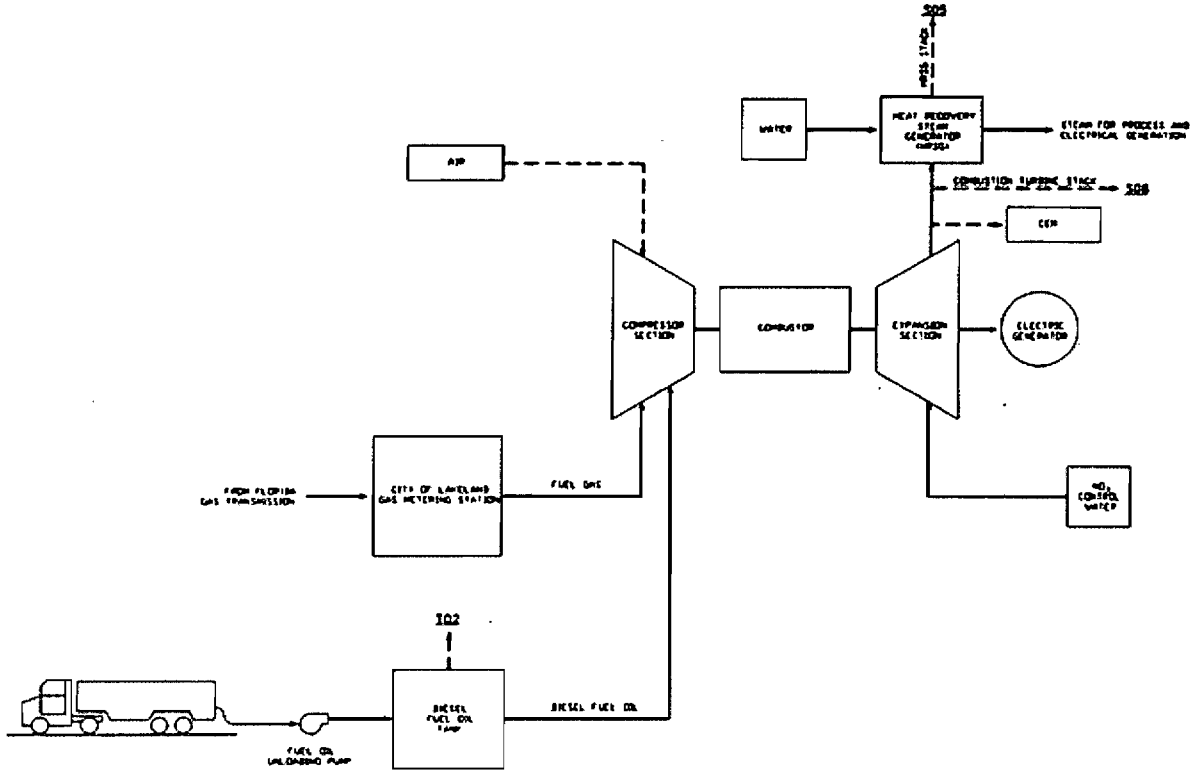
40 CFR 75.21(a)	QA/QC; CEMS; Appendix B (Suspended 7/17/95-12/31/96)
40 CFR 75.21(c)	QA/QC; Calibration Gases
40 CFR 75.21(d)	QA/QC; Notification of RATA
40 CFR 75.21(e)	QA/QC; Audits
40 CFR 75.22	Reference Methods
40 CFR 75.24	Out-of-Control Periods; CEMS
40 CFR 75.30(a)(3)	General Missing Data Procedures; NO_x
40 CFR 75.30(a)(4)	General Missing Data Procedures; CO_2
40 CFR 75.30(d)	General Missing Data Procedures; SO_2
40 CFR 75.31	Initial Missing Data Procedures (new/re-certified CMS)
40 CFR 75.32	Monitoring Data Availability for Missing Data
40 CFR 75.33	Standard Missing Data Procedures
40 CFR 75.36	Missing Data for Heat Input
40 CFR 75.53	Monitoring Plan; revisions
40 CFR 75.57(a)	Recordkeeping Requirements for Affected Sources
40 CFR 75.57(b)	Operating Parameter Record Provisions
40 CFR 75.57(d)	NO_x Emission Record Provisions
40 CFR 75.57(e)	CO_2 Emission Record Provisions
40 CFR 75.57(h)	Missing Data Records
40 CFR 75.58(c)	Specific SO_2 Emission Record Provisions
40 CFR 75.58(e)	Specific SO_2 Emission Record Provisions
40 CFR 75.59	Certification; QA/QC Provisions
40 CFR 75.60	Reporting Requirements-General
40 CFR 75.61	Reporting Requirements-Notification cert/recertification
40 CFR 75.62	Reporting Requirements-Monitoring Plan
40 CFR 75.63	Reporting Requirements-Certification/Recertification
40 CFR 75.64(a)	Reporting Requirements-Quarterly reports; submission
40 CFR 75.64(b)	Reporting Requirements-Quarterly reports; DR statement
40 CFR 75.64(c)	Rep. Req.; Quarterly reports; Compliance Certification
40 CFR 75.64(d)	Rep. Req.; Quarterly reports; Electronic format
40 CFR 75.64(f)	Method of Submission
40 CFR 75.64(g)	Submission Requirements
40 CFR 75.66	Petitions to the Administrator (if required)
Appendix A	Specifications and Test Procedures
Appendix B	QA/QC Procedures
Appendix C.	Missing Data Estimation Procedures
Appendix D	Optional SO_2; Oil-/gas-fired units
Appendix F	Conversion Procedures

Acid Rain Program-Excess Emissions:

40 CFR 77.3	Offset Plans
40 CFR 77.5(b)	Deductions of Allowances
40 CFR 77.6	Excess Emissions Penalties (SO_2)

ATTACHMENT LR-EU3-J1

PROCESS FLOW DIAGRAM



Attachment LR-EU3-J1.

Source: Golder Associates Inc., 2002.

Process Flow Legend
Solid/Liquid
Gas
Steam

Golder Associates

ATTACHMENT LR-EU3-J2

FUEL ANALYSIS
FUEL OIL

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 630-953-8900 FAX: 630-953-8907

SINCE 1909

BGS Member of the SGS Group (Société Générale de Surveillance)
Committed To Excellence

ADDRESS ALL CORRESPONDENCE TO:
18130 VAN DRUNEN RD.
SOUTH HOLLAND, IL 60473
TEL: (708) 331-2900
FAX: (708) 339-3060
www.comtesco.com

May 3, 2002

CITY OF LAKELAND
3030 E. Lake Parker Dr.
Lakeland, FL 33805
Attn: Steven Parrish

Sample identification by
City of Lakeland

Kind of sample reported to us: Fuel Oil
Sample taken at: City of Lakeland
Sample taken by: City of Lakeland
Date sampled: ------
Date received: April 24, 2002

Sample ID: 183-02
Unit 8 Compliance Test

P.O. No. MR-16727
REVISED SULFUR AND BTU, 5/03/02

Analysis Report No. 71-178003

	As Received
GRAVITY	
Specific at 60/60°F	0.8659
Lb/gallon at 60°F	7.211
°API	31.9
HEATING VALUE	
Btu/lb	19,408
Btu/gal at 60°F	139,951
Sulfur, % Wt.	0.17

METHODS
Gravity: ASTM D 4052; Heating Value: ASTM D 240; Sulfur: ASTM D 4294

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.
Joseph B. Neuser V.P.
South Holland Laboratory

MEMBER ACIL

ATTACHMENT LR-EU3-J3

DETAILED DESCRIPTION OF CONTROL EQUIPMENT

ATTACHMENT LR-EU3-J3

DETAILED DESCRIPTION OF CONTROL EQUIPMENT

The GE Mark IV NO_x control algorithm utilizes data from digital temperature and humidity monitors located at each combustion turbine. The algorithm receives and processes the ambient temperature and humidity on a continuous basis. A temperature/humidity correction is used in determining the amount of water to inject for NO_x control. The correction accounts for the ambient water entering the combustion chamber, and then it adds the correct amount of injection water in order to ensure compliance with the unit's required water-to-fuel ratio as determined from the water/fuel curve. This algorithm ensures compliance on a continuous basis regardless of the unit load and ambient weather conditions.

ATTACHMENT LR-EU3-J4

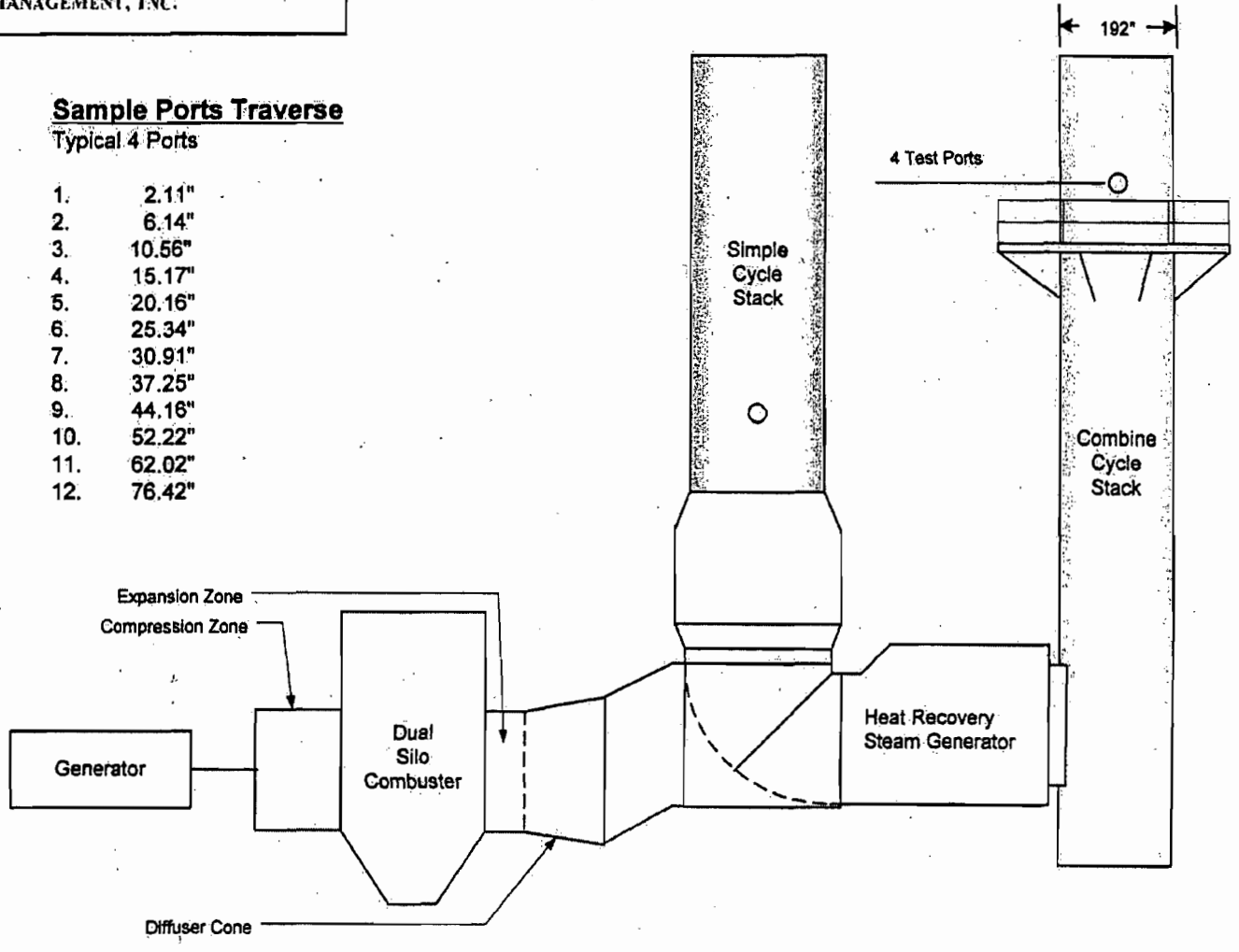
DESCRIPTION OF STACK SAMPLING FACILITIES

CATALYST
AIR MANAGEMENT, INC.

Sample Ports Traverse

Typical 4 Ports

1.	2.11"
2.	6.14"
3.	10.56"
4.	15.17"
5.	20.16"
6.	25.34"
7.	30.91"
8.	37.25"
9.	44.16"
10.	52.22"
11.	62.02"
12.	76.42"



TITLE: CITY of LAKELAND - CHARLES LARSEN POWER PLANT UNIT 8		
DESCRIPTION: UNIT 8 LAYOUT AND STACK DIAGRAM		DATE: 01-11-99
SCALE: NONE-	DRAWN BY: MJ Taylor	REVISED:

ATTACHMENT LR-EU3-J5

COMPLIANCE TEST REPORT

CATALYST
AIR MANAGEMENT, INC.

AIR QUALITY TESTING SERVICES

CITY OF LAKELAND
CHARLES LARSEN POWER PLANT
UNIT 8

NOx EMISSIONS TEST REPORT

Catalyst Air Management, Inc.
Report Number 138-045

JANUARY 4, 2002

2505 Byington-Solway Road
Knoxville, Tennessee 37931
(865) 531-0075 • Fax (865) 531-0750

1531 Wyngate Drive
DeLand, Florida 32724
(904) 943-9241 • Fax (904) 943-9212

6 Unionville Road
Douglassville, Pennsylvania 19518
(610) 326-7888 • Fax (610) 326-3323

1.0 Introduction

Catalyst Air management, Inc. (Catalyst) was contracted by the City of Lakeland to perform the annual NOx compliance and visual emissions testing for the Charles Larsen Power Plant Unit 8 in Lakeland, FL.

The sampling program was conducted December 13, 2001. The testing was performed by Messers. Mike Taylor, Michael Diamond and Scott Willard of Catalyst, with the assistance of personnel assigned by the City of Lakeland. Mr. John Guiseppi coordinated plant operation during the testing.

2.0 Summary of Test Results

A summary of test results developed by this source-sampling program is presented in Tables 1 through 3. The summary tables are presented as follows:

TABLE 1
Summary of NOx Emissions
Charles Larsen Power Plant
Unit 8

FUEL	NOx ppm @ 15% O_2	Permit ppm @ 15% O_2	NOx lb/mmBtu	NOx lb/hr	Opacity %	Permit %
Gas	16.3	25.0	0.06	52.5	0.0	20

3.0 Results of Testing

The individual test run results are shown in Table 2 and tabulated in Appendix 1 and 2. The results indicate that the emissions are within the emission limits of the referenced operating permits.

4.0 Description of Combustion Units

Larsen Unit 8 is a General Electric Model PG7111 Frame 7 combustion turbine (CT) with a heat recovery steam generator (HRSG). The CT can be fired with natural gas and No.2 distillate fuel oil. The maximum heat input of the unit is 1055 MMBtu/hr based on the lower heating value (MMBtu/hr, LHV) while firing natural gas and 1040 MMBtu/hr, LHV while firing fuel oil. The rated combined capacity of the CT/HRSG is approximately 120 MW gross.

SUMMARY OF TEST RESULTS
Individual Test Runs

CLIENT: City of Lakeland
PLANT: Larsen
UNIT: 8
TEST: NOx - Method 3A/7E/20

	Run 1	Run 2	Run 3	Run 4	Run 5	Run 6
Date	12/13/01	12/13/01	12/13/01	12/13/01	12/13/01	12/13/01
Start Time	10:43	11:20	11:57	12:34	13:11	13:47
End Time	11:13	11:50	12:27	13:04	13:41	14:17
Measured CO2 (%)	3.7	3.6	3.3	3.5	3.5	3.5
Measured O2 (%)	14.8	14.7	14.5	14.6	14.5	14.6
Measured NOx Concentration (ppm)	17.19	17.31	17.47	17.60	17.53	17.57
Avg Zero Bias Check (ppm)	0.165	0.180	0.135	0.170	0.165	0.135
Upscale Calibration Gas (ppm)	12.40	12.40	12.40	12.40	12.40	12.40
Avg Upscale Bias Check (ppm)	12.425	12.500	12.540	12.490	12.435	12.450
Corrected NOx Concentration (ppm)	17.2	17.2	17.3	17.5	17.6	17.6
NOx @ 15% O2	16.4	16.4	15.9	16.4	16.5	16.5
		16.4		16.2		16.5
F factor	8710	8710	8710	8710	8710	8710
Heat Input (mmBtu/hr)	880.2	880.2	872.1	872.1	866.3	866.3
NOx Emissions (lb/hr)	52.81	52.81	51.45	52.33	52.84	52.84
		52.81		51.89		52.84
NOx Emissions (lb/mmBtu)	0.060	0.060	0.059	0.060	0.061	0.061
		0.060		0.060		0.061
Average NOx (ppm @ 15% O2)				**16.3**		
Average NOx (lbhr)				**52.5**		
Average NOx (lb/MMBtu)				**0.06**		

TABLE 3
VISIBLE EMISSIONS SUMMARY

Client:	**City of Lakeland**
Plant:	**Larsen**
Location:	**8**

Run Number:	1
Date:	12/13/01
Run Times:	1043-1143
Opacity 1 hr average:	**0**
Opacity highest 6 minute average:	**0**

5.0 Description of CEMS

The Unit 8 CEMS is an extraction system that measures NOx and O_2 concentrations at the sampling location. The CEMS includes an Advanced Pollution Industries Model 252 NOx analyzer and a Graseby STI Model DP0802 O_2 analyzer. The recording and reporting requirements are performed by a computerized data acquisition and handing system (DAHS).

Unit 8 CEMS

(1) Advanced Pollution Industries NOx – 252 - Serial No. 132/112
(1) Graseby STI O_2 – DP0802 - Serial No. 1511-1-8

The data acquisition and handling system utilizes a Fc factor of 8710 scf/mmBtu to calculate NOx emissions in lbs/mmBtu. The SO_2 and CO_2 emissions are calculated and reported in accordance with procedures in 40 CFR Part 75, Appendices D and G.

6.0 Sampling Program Procedures

The following test methods were utilized during the test program:

EPA Method 3A	Gas Analysis for CO_2, O_2, Excess Air and Dry Molecular Weight
EPA Method 7E/20	Determination of Nitrogen Oxides, Sulfur Dioxide and Diluent Emissions from Stationary Gas Turbines
EPA Method 19	Determination of Sulfur Dioxide Removal Efficiency and Particulate Matter, Sulfur Dioxide, and Nitrogen Oxides Emission Rates

6.1 NOx and O_2

Catalyst conducted three (3) compliance test runs and nine (9) NOx and O_2 relative accuracy runs using EPA Methods 3A, 7E and 20. These runs were thiry (30) minutes in duration. The compliance runs were performed in conjunction with the RATA runs. A 48-point traverse was performed during the first test run to establish the absence of stratification. There was no stratification found in the stack, therefore, eight points were chosen from a single test port.

A sample was continuously extracted and introduced into a Thermo Environmental Model 10, Chemiluminescent NOx analyzer and Servomex 1400 O_2/CO_2 analyzer for determination of gas concentrations. The sample was extracted through a heated stainless steel probe, heated sample line and sample conditioner to dry the sample before it enters the analyzers. A sample flow control system was used to control the flow into the analyzers. The analyzers were calibrated prior to starting the testing with EPA Protocol 1, calibration gases. A system bias check was performed before each run by introducing the zero and upscale gas at the back end of the sample probe. The system bias check was repeated at the end of each test run to determine the analyzer zero and calibration drift.

The NOx analyzer span was 0-25 ppm. The calibration gases that were utilized were zero, 40-60% (12.40 ppm) and 80-100% (21.41 ppm) of span. The O_2/CO_2 analyzer spans were 0-25% and 0-20%, respectively. The O_2 calibration gases utilized were 10.01% and 22.40%. The CO_2 calibration gases were 10.09% and 17.84%.

Reference Method Analyzers:

Manufacturer	Model	Pollutant	Span
TECO	10A	NOx	0-25 ppm
Servomex	1400B	CO_2/O_2	0-20%/0-25%

A one hour, EPA Method 9, visible emission evaluation was performed during the testing.

All the procedures used for the test program were performed in accordance with the Code of Federal Regulations, Title 40, Part 60, Appendix A, and Appendix B, Performance Specifications 2, 3 and 6, and Part 75.

7.0 Operating Conditions

City of Lakeland personnel monitored operating conditions throughout the duration of the sampling program. The plant data was provided by John Guiseppi of Lakeland Electric. The testing was performed while the plant was operating at the following conditions:

Run	Fuel Flow scfm x 100	Heat Value Btu	Heat Input mmBtu/hr	Maximum Heat Input mmBtu/hr @ Temp (°F)	% @ Temp (°F)
1	950.4	1031.9	880.2	903.9	97.4
2	950.4	1031.9	880.2	903.9	97.4
3	941.8	1031.9	872.1	898.6	97.1
4	941.8	1031.9	872.1	898.6	97.1
5	935.7	1031.9	866.3	893.3	97.0
6	935.7	1031.9	866.3	893.3	97.0

Run	Load (MW)	Inlet Temp (°F)
1	77.5	79.0
2	77.5	79.0
3	76.5	81.0
4	76.5	81.0
5	76	83.0
6	76	83.0

8.0 Quality Assurance Procedures

The quality assurance procedures followed during the testing activities followed guidelines set forth by the previous mentioned methods and the EPA Quality Assurance Handbook for Source Sampling. The specific procedures for this test program are listed below.

8.1 Instrumental Methods

Analyzer calibrations, system bias check and drift checks were completed before and after each sample run utilizing EPA Protocol 1 calibration gases.

The analyzer interference responses were determined in accordance with Section 5.4 of Method 20 and Section 7.2 through 7.6 of Method 6C.

The NOx analyzer NO_2 to NO converter efficiency is determined in accordance with Section 5.6 of Method 20.

9.0 Discussion

During the execution of the testing no interruptions or delays occurred.

ATTACHMENT LR-EU3-J6

PROCEDURES FOR STARTUP/SHUTDOWN

ATTACHMENT LR-EU3-J6
PROCEDURES FOR STARTUP/SHUTDOWN

Startup for the gas turbine begins with an electric control system using a switch to initiate the unit startup cycle. The unit generator is synchronized with the grid and can be "on line" (electrical power production) within 5 minutes from startup.

The gas turbine utilizes water injection for controlling NO_x emissions. Initiation of water injection occurs when the turbine reaches stabilized load. The amount of water is a function of load based on preset algorithms in the CT digital control system. If excess emissions are encountered during startup or shutdown, the nature and cause of any malfunction is identified, along with the corrective action taken or preventative measures adopted. Corrective actions may include switching the unit from automatic (remote) to local control. Best operating practices are adhered to and all efforts to minimize both the level and duration of excess emissions are undertaken.

Shutdown is performed by reducing the unit load (electrical production) to a minimum level, opening the breaker (which disconnects the unit generator from the system electrical grid), shutting off the fuel, and coasting to a stop.

ATTACHMENT LR-EU3-J11

ALTERNATIVE METHODS OF OPERATION

ATTACHMENT LR-EU3-J11
ALTERNATIVE METHODS OF OPERATION
COMBINED CYCLE UNIT

The gas turbine can operate on both natural gas and No. 2 fuel oil. The maximum sulfur content in the fuel oil shall not exceed 0.2 percent. This unit can operate for the entire year (i.e., 8,760 hours) with natural gas or using up to 23,914,800 gallons/year of oil. The unit may operate at various loads. Routine maintenance includes injection of a turbine wash chemical to clean the inlet turbine (compressor). These chemicals consist of detergents and surfactants that are decomposed during the combustion stages of the turbine. This unit has a stack that can bypass the HRSG and can be operated in simple cycle. The inlet fogger system may be operated any time Unit 8 is in operation.

ATTACHMENT LR-EU3-J14

COMPLIANCE ASSURANCE MONITORING PLAN

ATTACHMENT LR-EU3-J14

COMPLIANCE ASSURANCE MONITORING PLAN

The control device for the CT is water injection for NO_x control. Continuous Emission Monitors (CEMS) monitor NO_x, therefore the Compliance Assurance Monitoring Plan is need not be submitted.

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION (All Emissions Units)

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in This Section: (Check one)

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Regulated or Unregulated Emissions Unit? (Check one)

[X] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

[ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

3. Description of Emissions Unit Addressed in This Section (limit to 60 characters):

Gas Turbine Peaking Units 2 and 3 (Unit 1 has been removed from the plant)

4. Emissions Unit Identification Number: [ ] No ID [ ] ID Unknown
ID: **005, 006**

5. Emissions Unit Status Code:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A	**JANUARY 1973**	**49**	[ ]

9. Emissions Unit Comment: (Limit to 500 Characters)

Generator nameplate for 2 units combined and are regulated collectively.

Gas Turbine Peaking Unit 1 has been removed from the plant and should be removed from all further permitting.

See Attachment LR-EU4-A9.

Emissions Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method):

2. Control Device or Method Code(s):

Emissions Unit Details

1. Package Unit:
   Manufacturer: Model Number:
2. Generator Nameplate Rating: **23** MW
3. Incinerator Information:
   Dwell Temperature: °F
   Dwell Time: seconds
   Incinerator Afterburner Temperature: °F

B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:			**209**	mmBtu/hr
2. Maximum Incineration Rate:		lb/hr		tons/day
3. Maximum Process or Throughput Rate:				
4. Maximum Production Rate:				
5. Requested Maximum Operating Schedule:				
	24	hours/day	**7**	days/week
	52	weeks/year	**8,760**	hours/year

6. Operating Capacity/Schedule Comment (limit to 200 characters):

Maximum heat input shown for both distillate oil and natural gas firing for each turbine.

MW rating is 23 MW for 2 turbines (11.5 MW each).

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

See Attachment LR-EU4-D	

D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? **See Attachment LR-EU4-J1**	2. Emission Point Type Code: **3**
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): **Each gas turbine has a single emission point.**	
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:	

5. Discharge Type Code: **V**	6. Stack Height: **31** feet	7. Exit Diameter: **11.8** feet
8. Exit Temperature: **800** °F	9. Actual Volumetric Flow Rate: **662,400** acfm	10. Water Vapor: %

11. Maximum Dry Standard Flow Rate: dscfm	12. Nonstack Emission Point Height: feet
13. Emission Point UTM Coordinates: Zone: **17** East (km): **409. 1** North (km): **3102.8**	
14. Emission Point Comment (limit to 200 characters):	

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type) (limit to 500 characters): **Distillate (No. 2) Fuel Oil**		
2. Source Classification Code (SCC): **2-01-001-01**	3. SCC Units: **1,000 gallons**	
4. Maximum Hourly Rate: **1.393**	5. Maximum Annual Rate: **12,206**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: **0.5**	8. Maximum % Ash:	9. Million Btu per SCC Unit: **150**
10. Segment Comment (limit to 200 characters): **Based on 25 °F inlet temperature.** **The CTs have typically been fired with 0.2% sulfur fuel oil** **Fuel usage for each gas turbine.**		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type) (limit to 500 characters): **Natural Gas**		
2. Source Classification Code (SCC): **2-01-002-01**	3. SCC Units: **Million Cubic Feet**	
4. Maximum Hourly Rate: **0.22**	5. Maximum Annual Rate: **1,927**	6. Estimated Annual Activity Factor:
10. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: **950**
10. Segment Comment (limit to 200 characters): **Based on 20 °F inlet temperature.** **Fuel usage based on 950 BTU/CF natural gas which is a typical average.**		

F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM			NS
SO_2			EL
NO_X			NS
CO			NS
VOC			NS
PM_{10}			NS

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **SO_2**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **106.2** lb/hour **465.2** tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **0.5% Sulfur Fuel** Reference: **Permit No. 1050003-009-AV Condition III.C.6**	7. Emissions Method Code: **0**
8. Calculation of Emissions (limit to 600 characters): **1,475 gal / hr x 7.2 lb / gal x 0.005 lb S / lb fuel x 2 lb SO_2 / lb S = 106.2 lb/hr** **106.2 lb / hr x 8,760 hr / yr x ton / 2,000 lb = 465.2 TPY**	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): **Emissions for distillate oil firing for each gas turbine.**	

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **0.5 % Sulfur**	4. Equivalent Allowable Emissions: **106.2** lb/hour **465.2** tons/year
5. Method of Compliance (limit to 60 characters): **Fuel oil analysis**	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): **Permit No. 1050003-009-AV Conditions III.C.9 and III.C.12.**	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation 1 of 2

1. Visible Emissions Subtype: **VE20**	2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: **20** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: **Annual VE Test EPA Method 9 if > 400 hr/yr oil operation**	
5. Visible Emissions Comment (limit to 200 characters): **Permit No. 1050003-009-AV Condition III.C.5.**	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	[ ] Rule [ ] Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment (limit to 200 characters):	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation 2 of 2

1. Visible Emissions Subtype: **VE99**	2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: **100** % Maximum Period of Excess Opacity Allowed: **60** min/hour	
4. Method of Compliance: **None**	
5. Visible Emissions Comment (limit to 200 characters): **Not to exceed 2 hr / 24 hr during malfunction. Permit No. 1050003-009-AV Condition III.C.7** **Excess emissions for startup, shutdown with good operating practices. Permit No. 1050003-009-AV Condition III.C.8**	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	[ ] Rule [ ] Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment (limit to 200 characters):	

J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements

1. Process Flow Diagram
   [X] Attached, Document ID: LR-EU4-J1 [ ] Not Applicable [ ] Waiver Requested

2. Fuel Analysis or Specification
   [X] Attached, Document ID: LR-EU4-J2 [ ] Not Applicable [ ] Waiver Requested

3. Detailed Description of Control Equipment
   [ ] Attached, Document ID: _____ [X] Not Applicable [ ] Waiver Requested

4. Description of Stack Sampling Facilities
   [ ] Attached, Document ID: _____ [X] Not Applicable [ ] Waiver Requested

5. Compliance Test Report
   [ ] Attached, Document ID: _____
   [ ] Previously submitted, Date: _____
   [X] Not Applicable **Permit No. 1050003-009-AV Conditions III.C.15 and III.C.16**

6. Procedures for Startup and Shutdown
   [X] Attached, Document ID: LR-EU4-J6[ ] Not Applicable [ ] Waiver Requested

7. Operation and Maintenance Plan
   [ ] Attached, Document ID: _____ [X] Not Applicable [ ] Waiver Requested

8. Supplemental Information for Construction Permit Application
   [ ] Attached, Document ID: _____ [X] Not Applicable

9. Other Information Required by Rule or Statute
   [ ] Attached, Document ID: _____ [X] Not Applicable

10. Supplemental Requirements Comment:

Additional Supplemental Requirements for Title V Air Operation Permit Applications

11. Alternative Methods of Operation
[ ] Attached, Document ID: _____ [X] Not Applicable

12. Alternative Modes of Operation (Emissions Trading)
[ ] Attached, Document ID: _____ [X] Not Applicable

13. Identification of Additional Applicable Requirements
[X] Attached, Document ID: LR-FI-C12 [ ] Not Applicable

14. Compliance Assurance Monitoring Plan
[ ] Attached, Document ID: _____ [X] Not Applicable

15. Acid Rain Part Application (Hard-copy Required)

[ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
Attached, Document ID: _____

[ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
Attached, Document ID: _____

[ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
Attached, Document ID: _____

[ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
Attached, Document ID: _____

[ ] Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
Attached, Document ID: _____

[ ] Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
Attached, Document ID: _____

[X] Not Applicable

ATTACHMENT LR-EU4-A9

EMISSIONS UNIT COMMENT

Attachment LR-EU4-A9
Former Location of Unit 1 Gas Turbine; Units 2 and 3 Shown
Charles Larsen Memorial Power Plant Photos

Source: Golder, 2002.

Golder Associates

ATTACHMENT LR-EU4-D

APPLICABLE REQUIREMENTS

ATTACHMENT LR-EU4-D

Applicable Requirements Listing

EMISSION UNIT ID: EU4 - Larsen Plant - Gas Turbine Peaking Units 2+3

FDEP Rules:

Stationary Sources-General:

62-210.700(1)	- Excess Emissions (startup/shutdown/malfunction)
62-210.700(4)	- Poor Maintenance
62-210.700(6)	- Notification

Stationary Sources-Emission Standards/RACT:

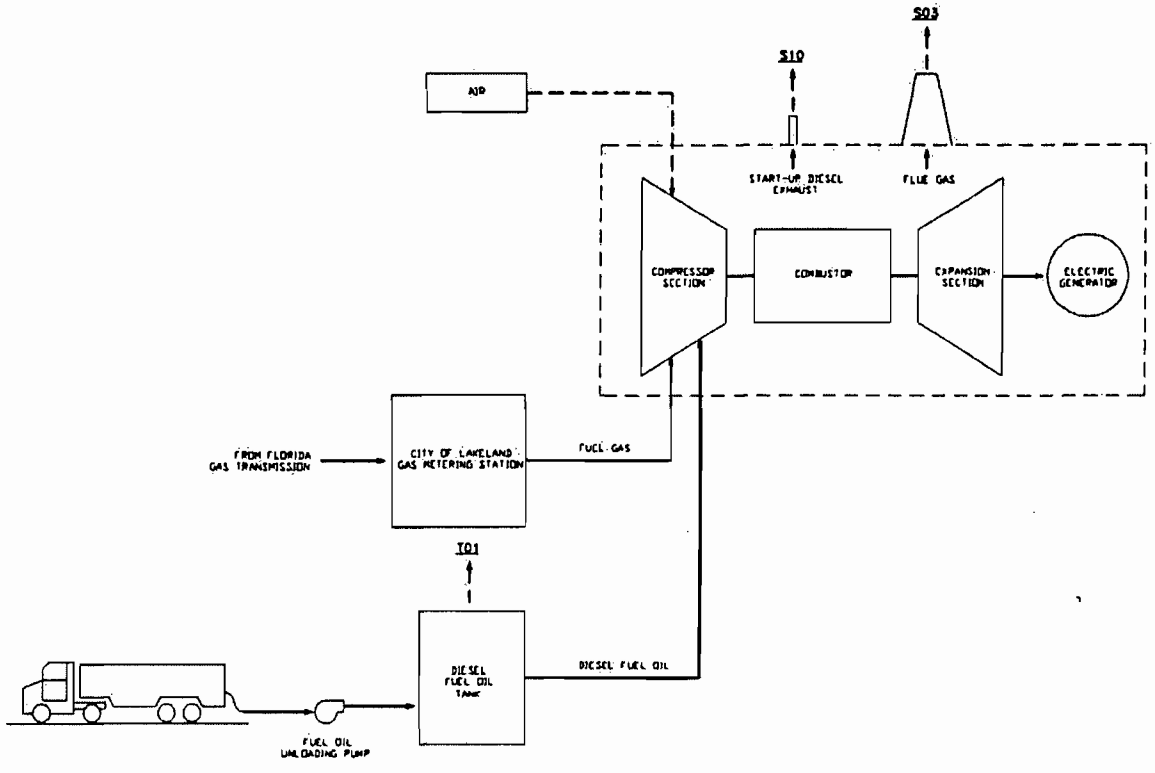
62-296.320(4)(b)	- General VE

Stationary Sources-Emission Monitoring:

62-297.310(2)(a)	- Operating Rate; reserved for CTs
62-297.310(4)(a)2.	- Applicable Test Procedures;Sampling time
62-297.310(5)	- Determination of Process Variables
62-297.310(7)(a)3.	- Permit Renewal Test Required
62-297.310(7)(a)4.a.	- Annual Test
62-297.310(7)(a)8	- CTs; Exempts Test <400hrs/yr; 1 per 5 yr
62-297.310(7)(a)9.	- FDEP Notification - 15 days
62-297.310(8)(a)(b)	- Test Reports

ATTACHMENT LR-EU4-J1

PROCESS FLOW DIAGRAM



REV. NO.	BY	DATE	APPR.	REVISION
0	MG	11-2-94		ISSUED FOR TITLE V PERMIT APPLICATION
1	MG	5-15-96	MP	CHANGE TITLE
2	MG	5-29-96	MP	ISSUED FOR TITLE V

LAKELAND ELECTRIC & WATER

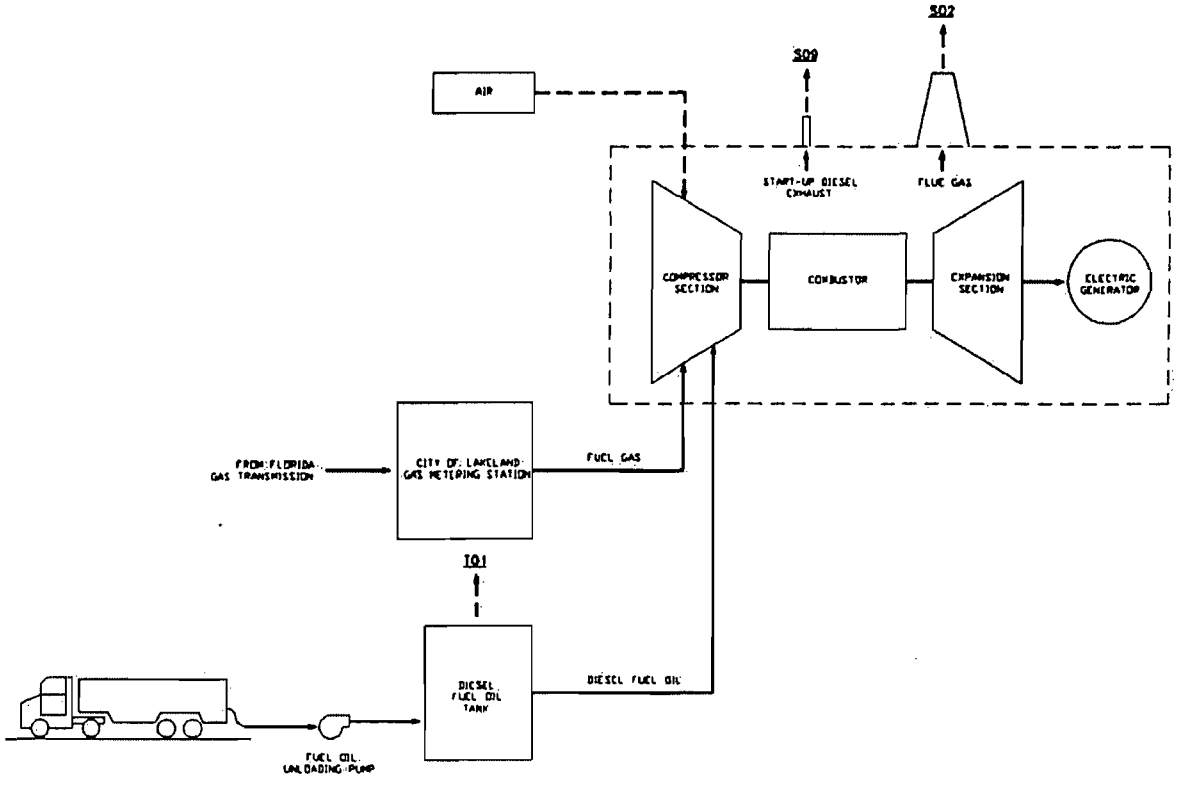
DESCRIPTION

LAKELAND ELECTRIC & WATER UTILITIES
LARSEN POWER PLANT
GAS TURBINE GENERATOR NO. 3
TITLE V PROCESS FLOW DIAGRAM

DIVISION PRODUCTION ENGINEERING
ENGINEER PATTERSON
DRN. BY: MGIEGER DATE 9-19-94
APPR. BY:

CAD SCALE NONE
PROJ. NO AIR PERMIT
DWG. NO. LR-EU4-L1/SKL-8 REV. 2

SIZE B



REV. NO.	BY	DATE	APPR.	REVISION
0	MG	11-2-94		ISSUED FOR TITLE V PERMIT APPLICATION
1	MG	5-13-96	MP	CHANGE TITLE
2	MG	5-29-96	MP	ISSUED FOR TITLE V

LAKELAND ELECTRIC & WATER

DESCRIPTION

LAKELAND ELECTRIC & WATER UTILITIES
LARSEN POWER PLANT
GAS TURBINE GENERATOR NO. 2
TITLE V PROCESS FLOW DIAGRAM

DIVISION PRODUCTION ENGINEERING
ENGINEER PATTERSON
DRN. BY: MGIEGER DATE 9-19-94
APPR. BY:

CAD SCALE NONE
PROJ. NO. AIR PERMIT
DWG. NO. LR-EU4-L1/SKL-7 REV. 2

SIZE B

ATTACHMENT LR-EU4-J2

FUEL ANALYSIS
FUEL OIL

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 630-953-2800 FAX: 630-953-2808

SINCE 1909

SGS Member of the SGS Group (Société Générale de Surveillance)

Committed To Excellence

ADDRESS ALL CORRESPONDENCE TO:
18130 VAN DRUNEN RD.
SOUTH HOLLAND, IL 60473
TEL: (708) 331-2900
FAX: (708) 333-3060
www.comteco.com

May 3, 2002

CITY OF LAKELAND
3030 E. Lake Parker Dr.
Lakeland, FL 33805
Attn: Steven Parrish

Sample identification by
City of Lakeland

Kind of sample reported to us: Fuel Oil

Sample taken at: City of Lakeland

Sample taken by: City of Lakeland

Date sampled: ------

Date received: April 24, 2002

Sample ID: 183-02
Unit 8 Compliance Test

P.O. No. MR-16727
REVISED SULFUR AND BTU, 5/03/02

Analysis Report No. 71-178003 Page 1 of 1

	As Received
GRAVITY	
Specific at 60/60°F	0.8659
Lb/gallon at 60°F	7.211
°API	31.9
HEATING VALUE	
Btu/lb	19,408
Btu/gal at 60°F	139,951
Sulfur, % Wt.	0.17

METHODS
Gravity: ASTM D 4052; Heating Value: ASTM D 240; Sulfur: ASTM D 4294

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Joseph B. Neuser V.P.
South Holland Laboratory

MEMBER ACIL

ATTACHMENT LR-EU4-J6

PROCEDURES FOR STARTUP/SHUTDOWN

ATTACHMENT LR-EU4-J6
PROCEDURES FOR STARTUP/SHUTDOWN

Startup and shutdown for these units are fully automatic.

Startup for the combustion turbine begins with "lighting off" of the machines on either natural gas or light distillate oil.

Corrective actions may include switching the unit from automatic (remote) to local control, or changing fuel combination(s). Best operating practices are adhered to and all efforts to minimize both the level and duration of excess emissions are undertaken.

Shutdown is performed by reducing the unit load (electrical production) to a minimum level, opening the breaker (which disconnects the unit from the system electrical grid), shutting off the fuel and coasting down to stop. The CT is then put "on turning gear" to prevent possible disfiguration of the turbine components.

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION (All Emissions Units)

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in This Section: (Check one)

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Regulated or Unregulated Emissions Unit? (Check one)

[ ] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

[X] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

3. Description of Emissions Unit Addressed in This Section (limit to 60 characters):

Facility-Wide Unregulated Units

4. Emissions Unit Identification Number: [X] No ID
ID: [ ] ID Unknown

5. Emissions Unit Status Code:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A		**49**	[ ]

9. Emissions Unit Comment: (Limit to 500 Characters)

This emission unit information section pertains to all unregulated emission activities at the facility. All tanks with greater than 10,000 gallon capacity were installed prior to July 23, 1984.

See Attachment LR-EU5-A9.

Emissions Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method):
2. Control Device or Method Code(s):

Emissions Unit Details

1. Package Unit: Manufacturer:	Model Number:	
2. Generator Nameplate Rating:	MW	
3. Incinerator Information:		
Dwell Temperature:		°F
Dwell Time:		seconds
Incinerator Afterburner Temperature:		°F

B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:				mmBtu/hr
2. Maximum Incineration Rate:		lb/hr		tons/day
3. Maximum Process or Throughput Rate:				
4. Maximum Production Rate:				
5. Requested Maximum Operating Schedule:				
	24	hours/day	**7**	days/week
	52	weeks/year	**8,760**	hours/year
6. Operating Capacity/Schedule Comment (limit to 200 characters):				

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

Not Applicable	

D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram?	2. Emission Point Type Code:	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): **The emission unit section refers to various unregulated emissions.**		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: F	6. Stack Height: feet	7. Exit Diameter: feet
8. Exit Temperature: °F	9. Actual Volumetric Flow Rate: acfm	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates: Zone: East (km): North (km):		
14. Emission Point Comment (limit to 200 characters):		

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type) (limit to 500 characters): **Residual Oil**		
2. Source Classification Code (SCC): **A2505030060**	3. SCC Units: **1,000 gallons**	
4. Maximum Hourly Rate:	5. Maximum Annual Rate: **52,767**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters): **Annual rate based on inputs to FFFSG #6 and #7 (EU1 and EU2).**		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type) (limit to 500 characters): **Distillate (No. 2) Fuel Oil**		
2. Source Classification Code (SCC): **A2505030090**	3. SCC Units: **1,000 gallons**	
4. Maximum Hourly Rate:	5. Maximum Annual Rate: **49,757**	6. Estimated Annual Activity Factor:
11. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters): **Annual rate based on inputs to Combined Cycle Unit 8 (EU3) and GTs 2 and 3 (EU4).**		

F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
VOC			NS
PM			NS

ATTACHMENT LR-EU5-A9

EMISSIONS UNIT COMMENT

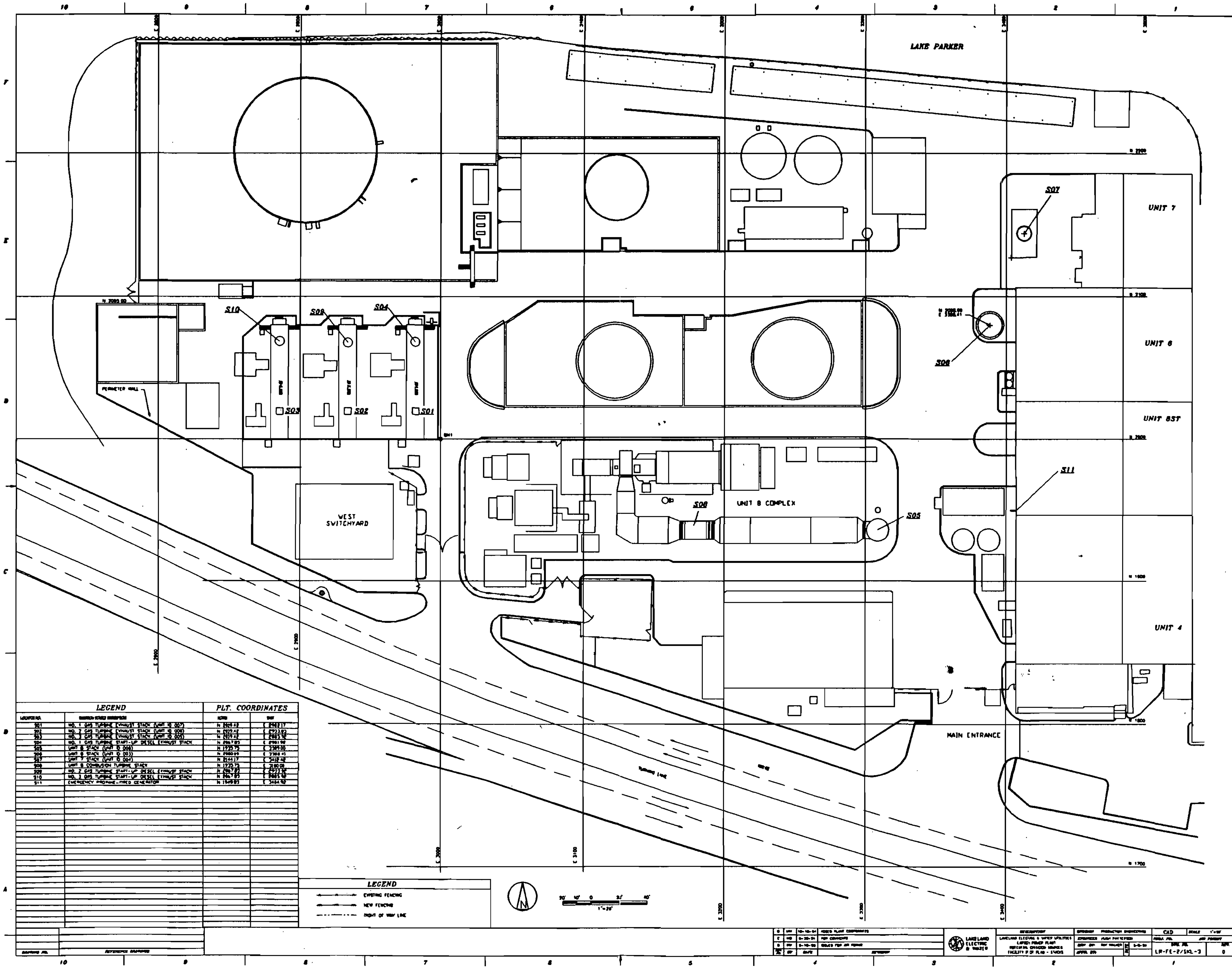
ATTACHMENT LR-EU5-A9
EMISSIONS UNIT COMMENT

The emission unit contains identification of unregulated activities. Since some of the activities may have been or may be subject to permitting requirements, a notification of temporary exemption is provided.

NOTIFICATION OF TEMPORARY EXEMPTIONS

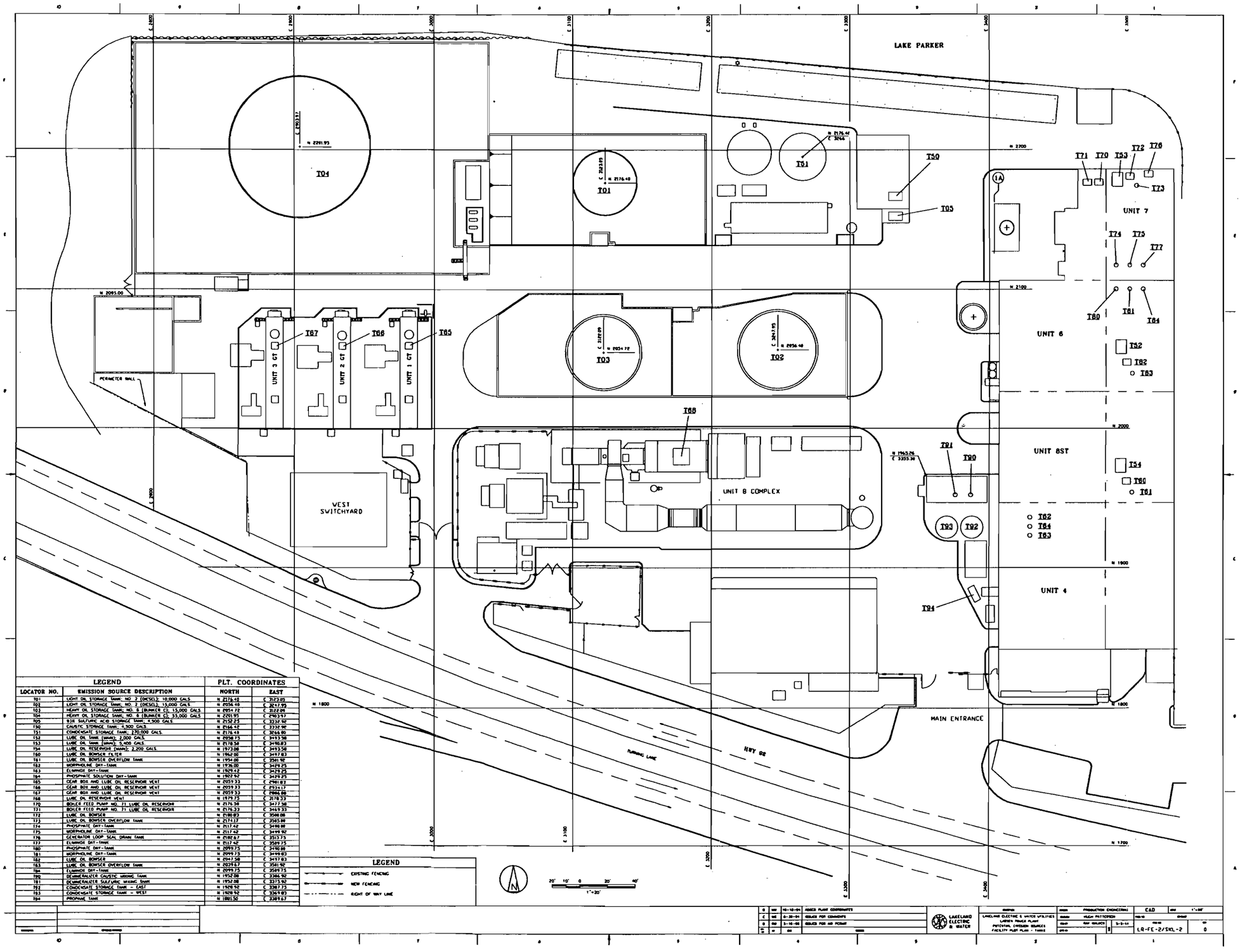
Pursuant to Rule 62-210.300(3)(b)1., notice is herein provide that the emissions units listed below are not subject to a permit issued by the Department of Environmental Protection and are exempt from permitting until a final determination is made under the Title V permitting requirements (Rule 62-213 F.A.C.). These units would not have triggered review under Rules 62-212.400 or 62-212.500 or any new source performance standard listed in Rule 62-204.800 F.A.C. The type of emission units for which this notification is made includes the following:

1. GT-2 Start-up Diesel,
2. GT-3 Start-up Diesel,
3. Emergency Generators (Propane/Diesel; <32,000 gal/yr),
4. General Purpose Diesel Engines (<32,000 gal/yr),
5. Surface Coating (painting; <6 gal/month average),
6. Sand Blasting (maintenance only) , and
7. Parts washing.



LEGEND / PLT. COORDINATES

LOCATION NO.	EMISSION SOURCE DESCRIPTION	NORTH	EAST
S01	NO. 1 GAS TURBINE EXHAUST STACK (UNIT ID 007)	N 2019.42	E 2842.17
S02	NO. 2 GAS TURBINE EXHAUST STACK (UNIT ID 008)	N 2019.42	E 2923.83
S03	NO. 3 GAS TURBINE EXHAUST STACK (UNIT ID 005)	N 2019.42	E 2883.52
S04	NO. 1 GAS TURBINE START-UP DIESEL EXHAUST STACK	N 2067.83	E 2901.98
S05	UNIT 8 STACK (UNIT ID 006)	N 1973.75	E 3389.00
S06	UNIT 6 STACK (UNIT ID 003)	N 2080.99	E 3388.41
S07	UNIT 7 STACK (UNIT ID 004)	N 2144.17	E 3412.42
S08	UNIT 8 COMBUSTION TURBINE STACK	N 1973.75	E 3180.00
S09	NO. 2 GAS TURBINE START-UP DIESEL EXHAUST STACK	N 2067.83	E 2923.50
S10	NO. 3 GAS TURBINE START-UP DIESEL EXHAUST STACK	N 2067.83	E 2883.52
S11	EMERGENCY PROPANE-FIRED GENERATOR	N 1949.83	E 3464.92



LEGEND		PLT. COORDINATES	
LOCATOR NO.	EMISSION SOURCE DESCRIPTION	NORTH	EAST
T01	LIGHT OIL STORAGE TANK: NO. 2 (DIESEL); 10,000 GALS.	N 2176.48	E 3123.05
T02	LIGHT OIL STORAGE TANK: NO. 2 (DIESEL); 15,000 GALS.	N 2056.48	E 3247.95
T03	HEAVY OIL STORAGE TANK: NO. 5 (BUNKER C); 15,000 GALS	N 2051.72	E 3329.09
T04	HEAVY OIL STORAGE TANK: NO. 6 (BUNKER C); 55,000 GALS	N 2291.93	E 2903.97
T05	93% SULFURIC ACID STORAGE TANK: 4,900 GALS	N 2152.25	E 3232.92
T50	CAUSTIC STORAGE TANK, 4,900 GALS.	N 2166.42	E 3232.92
T51	CONDENSATE STORAGE TANK, 270,000 GALS.	N 2176.48	E 3246.80
T52	LUBE OIL TANK (MAIN); 2,000 GALS.	N 2058.73	E 3413.58
T53	LUBE OIL TANK (MAIN); 5,400 GALS.	N 2178.58	E 3490.83
T54	LUBE OIL RESERVOIR (MAIN); 2,200 GALS.	N 1973.08	E 3493.58
T60	LUBE OIL BOWSER (5,115 #)	N 1962.00	E 3497.83
T61	LUBE OIL BOWSER OVERFLOW TANK	N 1954.08	E 3581.92
T62	MORPHOLINE DAY-TANK	N 1936.00	E 3429.25
T63	ELIMINOX DAY-TANK	N 1929.42	E 3429.25
T64	PHOSPHATE SOLUTION DAY-TANK	N 1922.92	E 3429.25
T65	GEAR BOX AND LUBE OIL RESERVOIR VENT	N 2059.33	E 2981.67
T66	GEAR BOX AND LUBE OIL RESERVOIR VENT	N 2059.33	E 2934.17
T67	GEAR BOX AND LUBE OIL RESERVOIR VENT	N 2059.33	E 2886.66
T68	LUBE OIL RESERVOIR VENT	N 1979.75	E 3178.33
T70	BOILER FEED PUMP NO. 71 LUBE OIL RESERVOIR	N 2176.58	E 3477.58
T71	BOILER FEED PUMP NO. 71 LUBE OIL RESERVOIR	N 2176.33	E 3469.33
T72	LUBE OIL BOWSER	N 2180.83	E 3560.08
T73	LUBE OIL BOWSER OVERFLOW TANK	N 2174.17	E 3565.99
T74	PHOSPHATE DAY-TANK	N 2117.42	E 3490.99
T75	MORPHOLINE DAY-TANK	N 2117.42	E 3499.92
T76	GENERATOR LOOP SEAL DRAIN TANK	N 2182.67	E 3513.75
T77	ELIMINOX DAY-TANK	N 2117.42	E 3509.75
T80	PHOSPHATE DAY-TANK	N 2099.75	E 3490.99
T81	MORPHOLINE DAY-TANK	N 2099.75	E 3499.83
T82	LUBE OIL BOWSER	N 2047.58	E 3497.83
T83	LUBE OIL BOWSER OVERFLOW TANK	N 2029.67	E 3581.92
T84	ELIMINOX DAY-TANK	N 2099.75	E 3589.75
T90	DEMINERALIZER CAUSTIC MIXING TANK	N 1952.08	E 3386.92
T91	DEMINERALIZER SULFURIC MIXING TANK	N 1952.08	E 3375.92
T92	CONDENSATE STORAGE TANK - EAST	N 1928.92	E 3387.73
T93	CONDENSATE STORAGE TANK - WEST	N 1928.92	E 3369.83
T94	PROPANE TANK	N 1801.50	E 3389.67

LEGEND

EXISTING FENCING

NEW FENCING

RIGHT OF WAY LINE

1"=20'

REV	BY	DATE	DESCRIPTION
D	MM	10-12-04	ADDED PLANT COORDINATES
C	MS	5-20-04	ISSUED FOR COMMENTS
B	MS	3-16-04	ISSUED FOR AIR PERMIT
A	MS		

LAKELAND ELECTRIC & WATER

LAKELAND ELECTRIC & WATER UTILITIES — PRODUCTION ENGINEERING

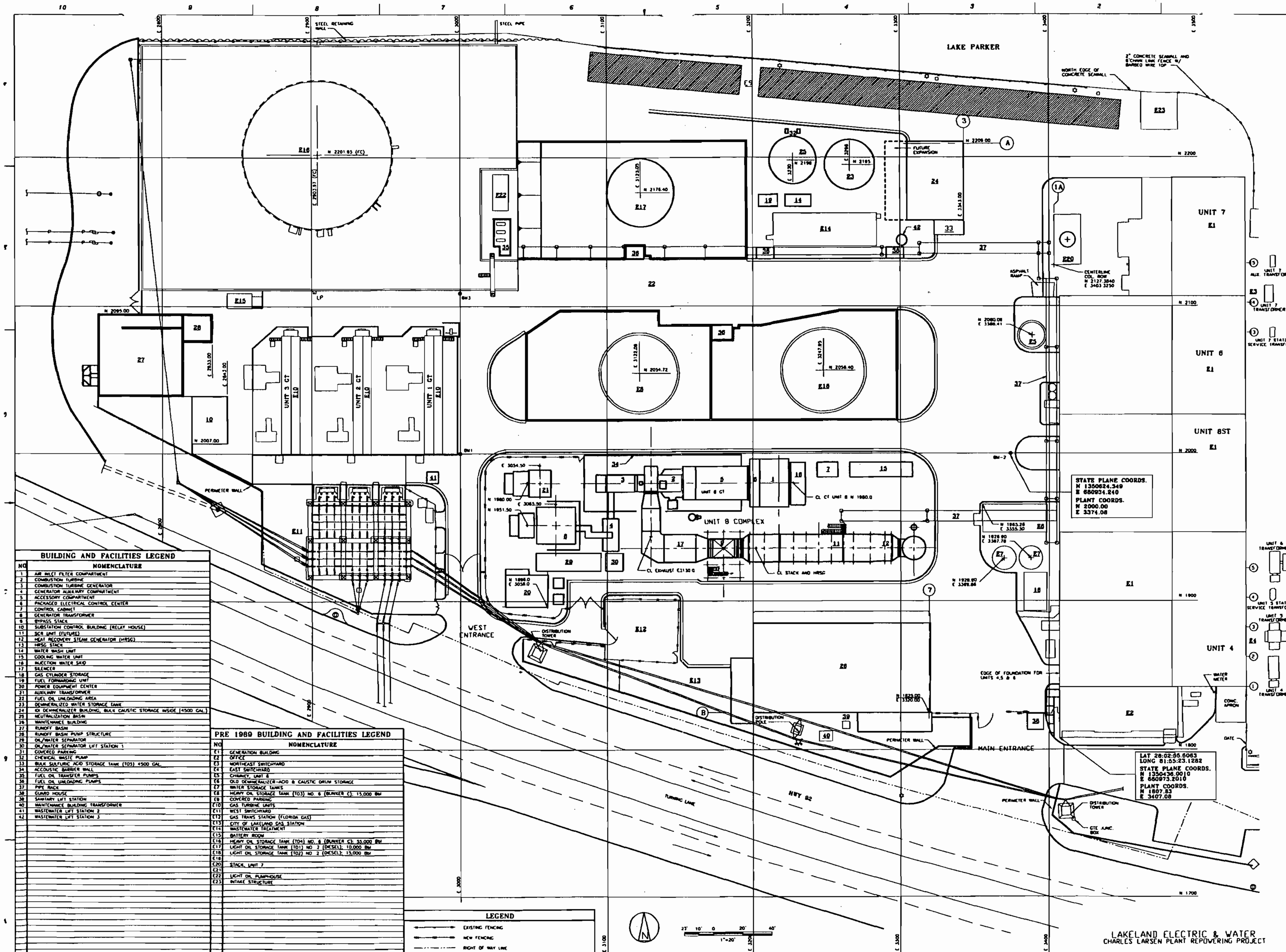
LARSEN PEAKER PLANT — HIGH PATTERSON

POTENTIAL EMISSION SOURCES — RAY WALKER — 3-3-04

FACILITY PLOT PLAN - TURBINES

CAD — 1"=80'

LR-FE-2/SKL-2 — 0



BUILDING AND FACILITIES LEGEND

NO	NOMENCLATURE
1	AIR INLET FILTER COMPARTMENT
2	COMBUSTION TURBINE
3	COMBUSTION TURBINE GENERATOR
4	GENERATOR AUXILIARY COMPARTMENT
5	ACCESSORY COMPARTMENT
6	PACKAGED ELECTRICAL CONTROL CENTER
7	CONTROL CABINET
8	GENERATOR TRANSFORMER
9	BYPASS STACK
10	SUBSTATION CONTROL BUILDING (RELAY HOUSE)
11	SCR UNIT (FUTURE)
12	HEAT RECOVERY STEAM GENERATOR (HRSG)
13	HRSG STACK
14	WATER WASH UNIT
15	COOLING WATER UNIT
16	INJECTION WATER SKID
17	SILENCER
18	GAS CYLINDER STORAGE
19	FUEL FORWARDING UNIT
20	POWER EQUIPMENT CENTER
21	AUXILIARY TRANSFORMER
22	FUEL OIL UNLOADING AREA
23	DEMINERALIZED WATER STORAGE TANK
24	IOI DEMINERALIZER BUILDING, BULK CAUSTIC STORAGE INSIDE (4500 GAL.)
25	NEUTRALIZATION BASIN
26	MAINTENANCE BUILDING
27	RUNOFF BASIN
28	RUNOFF BASIN PUMP STRUCTURE
29	OIL/WATER SEPARATOR
30	OIL/WATER SEPARATOR LIFT STATION 1
31	COVERED PARKING
32	CHEMICAL WASTE PUMP
33	BULK SULFURIC ACID STORAGE TANK (T05) 4500 GAL.
34	ACCOUSTIC BARRIER WALL
35	FUEL OIL TRANSFER PUMPS
36	FUEL OIL UNLOADING PUMPS
37	PIPE RACK
38	GUARD HOUSE
39	SANITARY LIFT STATION
40	MAINTENANCE BUILDING TRANSFORMER
41	WASTEWATER LIFT STATION 2
42	WASTEWATER LIFT STATION 3

PRE 1989 BUILDING AND FACILITIES LEGEND

NO	NOMENCLATURE
E1	GENERATION BUILDING
E2	OFFICE
E3	NORTHEAST SWITCHYARD
E4	EAST SWITCHYARD
E5	CHIMNEY, UNIT 6
E6	OLD DEMINERALIZER-ACID & CAUSTIC DRUM STORAGE
E7	WATER STORAGE TANKS
E8	HEAVY OIL STORAGE TANK (T03) NO. 6 (BUNKER C); 15,000 Bbl
E9	COVERED PARKING
E10	GAS TURBINE UNITS
E11	WEST SWITCHYARD
E12	GAS TRANS STATION (FLORIDA GAS)
E13	CITY OF LAKELAND GAS STATION
E14	WASTEWATER TREATMENT
E15	BATTERY ROOM
E16	HEAVY OIL STORAGE TANK (T04) NO. 6 (BUNKER C); 55,000 Bbl
E17	LIGHT OIL STORAGE TANK (T01) NO 2 (DIESEL); 10,000 Bbl
E18	LIGHT OIL STORAGE TANK (T02) NO 2 (DIESEL); 15,000 Bbl
E19	
E20	STACK, UNIT 7
E21	
E22	LIGHT OIL PUMPHOUSE
E23	INTAKE STRUCTURE

DRAWING NO. | REFERENCE DRAWINGS

LAKELAND ELECTRIC & WATER
CHARLES LARSEN PLANT REPOWERING PROJECT

REV. NO.	BY	DATE	REVISION
8	RW	5-16-96	ISSUED FOR AIR PERMIT
6	WB	10-16-94	ADDED PLANT COORDINATES
4	RW	5-5-94	FOR COMMENTS

LAKELAND ELECTRIC & WATER

DESCRIPTION: LAKELAND ELECTRIC & WATER UTILITIES, LARSEN POWER PLANT, FACILITY PLOT PLAN

APPROVED: PRODUCTION ENGINEERING
ENGINEER: HUGH PATTERSON
DRN. BY: RAY WALKER — DATE 3-3-94
APPR. BY:

CAD — SCALE 1"=50'
PROJ. NO. — AIR PERMIT
DWG. NO. LR-FE-2/SKL-1 — REV. 0