FPL

P. O. Box 078768, West Palm Beach, FL 33407-0768
6001 Village Blvd.

July 14, 1989

Mr. Dale Twachtmann, Secretary
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32301-8241

Dear Mr. Twachtmann:

This correspondence is to certify that Dr. Martin A. Smith, Manager of Environmental Permitting and Programs in the Environmental Affairs Department of Florida Power & Light Company, is authorized to act as an agent and representative for Florida Power & Light Company in DER permit actions. Correspondence from DER to FPL, including inspection reports, notices of violation, requests for information, etc., can be addressed to Dr. Smith at the following address:

Dr. Martin A. Smith
Environmental Affairs Department
Florida Power & Light Company
P. O. Box 078768
West Palm Beach, Fl 33407-0768
(407) 640-2030

Sincerely,

J. S. Odom
Vice President

JSO:eh

cc: Ernest Frey - DER Northeast District
Alexander - DER Central District
Scott Benyon - DER Southeast District
Richard Garrity - DER Southwest District
Philip Edwards - DER South District

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

$5,200 pd. 5-3-90 Recpt. # 151115

AC 06-179808

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Electrical Generating Plant [ ] New[1] [X] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: Florida Power & Light Company COUNTY: Broward

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Lauderdale Plant Units 4 & 5, GTs 1-24, and 3 fuel tanks

SOURCE LOCATION: Street SW 42nd St., 2 miles west of Ravenswood Rd City N.A.

UTM: East 580,200 North 2,883,300

Latitude 26 ° 4 ' 5 "N Longitude 80 ° 11 ' 54 "W

APPLICANT NAME AND TITLE: Florida Power & Light Company

APPLICANT ADDRESS: P.O. Box 078768, West Palm Beach, FL 33407-0768

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Florida Power & Light Company

I certify that the statements made in this application for a construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: Martin A. Smith

Martin A. Smith, Ph.D., Manager Environmental
Name and Title (Please Type)
Permitting and Programs
Date: 5/3/90 Telephone No. (407) 640-2030

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been ~~designed~~/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

[1] See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed David A. Buff

David A. Buff
Name (Please Type)

KBN Engineering and Applied Sciences, Inc.
Company Name (Please Type)

1034 NW 57th Street, Gainesville, FL 32605
Mailing Address (Please Type)

Florida Registration No. 19011 Date: 5/2/90 Telephone No. (904) 331-9000

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

FDER is requested to issue a construction permit to allow changes in the type of fuel being stored in existing tanks and to limit maximum potential VOC emissions from the Lauderdale Plant to less than 100 TPY. One existing fuel storage tank will also be removed. These changes will increase potential VOC emissions from the tanks. Attachment A presents a discussion of these changes and the permit limitation requested for the plant.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction June 1990 Completion of Construction December 1991

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Not applicable.

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

AO-06-146594, AO-06-143213, AO-06-148760, and AO-06-148761. Copies of these permits are and corresponding permit applications are attached. (See attachment B).

E. Requested permitted equipment operating time: hrs/day_____; days/wk_____; wks/yr_____;

if power plant, hrs/yr_____; if seasonal, describe:_____

Refer to response to A above

F. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? Yes

   a. If yes, has "offset" been applied? No

   b. If yes, has "Lowest Achievable Emission Rate" been applied? No

   c. If yes, list non-attainment pollutants. Ozone-Applicable pollutant is Volatile Organic Compounds

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. No

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. No

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? No

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? No

   a. If yes, for what pollutants?_____

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable: Not Applicable

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): _____

2. Product Weight (lbs/hr): _____

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Refer to Attachment A

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

[3]Calculated from operating rate and applicable standard.

[4]Emission, if source operated without control (See Section V, Item 3).

D. Control Devices: (See Section V, Item 4) Not Applicable

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr*	
Unit 4 and 5 Natural Gas		3,286 MMcf/hr	3,450 total
" " No. 6 Fuel Oil		21,991 gal/hr	3,300 total
GTs 1-24 Natural Gas		16,046 MMcf/hr	16,848 total
GTs 1-24 No. 2 Fuel Oil		117,801 gal/hr	16,200 total

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

Percent Sulfur: 1.0 Percent Ash: <0.1

Density: No. 6=8.2; No. 2=7.2 lbs/gal Typical Percent Nitrogen: No.6-0.35; No.2-0.015

Heat Capacity: No.6=18,300; No.2=19,100 BTU/lb Natural Gas - 1,050 BTU/cf BTU/gal
150,060 Btu/gal; 137,520 Btu/gal

Other Fuel Contaminants (which may cause air pollution):

F. If applicable, indicate the percent of fuel used for space heating. Not Applicable

Annual Average Maximum

G. Indicate liquid or solid wastes generated and method of disposal.

Liquid wastes are authorized under FDER permit IO-06-158722

Solid wastes are disposed of offsite in an approved sanitary landfill.

See Table 6 attached

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: _____ ft. Stack Diameter: _____ ft.

Gas Flow Rate: _____ ACFM _____ DSCFM Gas Exit Temperature: _____ °F.

Water Vapor Content: _____ % Velocity: _____ FPS

SECTION IV: INCINERATOR INFORMATION

Not Applicable

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

Approximate Number of Hours of Operation per day _____ day/wk _____ wks/yr. _____

Manufacturer _____

Date Constructed _____ Model No. _____

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diamter: _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity: _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]
   Previous FDER Air Permits - Attached
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
   See Attached Tables 1 through 6.
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
   See Attached Tables 1 through 6.
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)
   Not Applicable
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).
   Not Applicable
6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained. Not Applicable
7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
   See Attached Figure 1.
8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.
   See Attached Figure 1.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

This section is not applicable

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

[ ] Yes [ ] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

[ ] Yes [ ] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any).

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height: ft.

b. Diameter: ft.

c. Flow Rate: ACFM

d. Temperature: °F.

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

10. Reason for selection and description of systems:

[1]Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

This section is not applicable

A. Company Monitored Data

1. _____no. sites _____ TSP _____( ) SO^{2}* _____ Wind spd/dir

Period of Monitoring _____/_____/_____ to _____/_____/_____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

*Specify bubbler (B) or continuous (C).

2. Instrumentation, Field and Laboratory

a. Was instrumentation EPA referenced or its equivalent? [ ] Yes [ ] No

b. Was instrumentation calibrated in accordance with Department procedures?

[ ] Yes [ ] No [ ] Unknown

B. Meteorological Data Used for Air Quality Modeling

1. _____ Year(s) of data from _____/_____/_____ to _____/_____/_____
month day year month day year

2. Surface data obtained from (location)_____

3. Upper air (mixing height) data obtained from (location)_____

4. Stability wind rose (STAR) data obtained from (location)_____

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
TSP	_____ grams/sec
SO^2	_____ grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

ATTACHMENT A

The existing FPL Lauderdale Plant site is located in eastern Broward County. The plant site lies about 1 mile east of the Florida Turnpike and 1 mile west of Interstate 95 (I-95). The Fort Lauderdale-Hollywood International Airport is immediately east of I-95. State Road 84 and I-595, which is under construction, are north of the plant site. Griffin Road is about one-half of a mile south of the site.

Electric generating units have been operating at this site since the 1920s. The two original generating units and a third unit placed in service in 1941 have been retired. Currently, the Lauderdale Plant consists of two fossil-fuel-fired steam units and 24 gas turbine (GT) units. A site plan of the facility is presented in Figure 1.

The fossil-fuel-fired steam units, Units 4 and 5, burn natural gas and/or No. 6 fuel oil. Units 4 and 5 have a maximum heat input of $1,725 \times 10^6$ Btu/hour/unit when burning natural gas, and $1,650 \times 10^6$ Btu/hour/unit when burning No. 6 fuel oil. These units are authorized to operate under Florida Department of Environmental Regulation (FDER) air pollution permit numbers AO-06-146594 and AO-06-143213, respectively.

GTs 1-24 burn natural gas or No. 2 fuel oil and have a maximum heat input of 702×10^6 Btu/hour/unit when burning natural gas, and 675×10^6 Btu/hour/unit when burning No. 2 fuel oil. GTs 1-12 and GTs 13-24 are authorized to operate by FDER air pollution permit numbers AO-06-148760 and AO-06-148761, respectively.

Currently, there are four fuel oil storage tanks at the Lauderdale Plant which store No. 2 and No. 6 fuel oil for use in GTs 1 through 24 and Units 4 and 5, respectively. The designation, size, and fuel currently stored in each tank are presented below.

Designation	Size (bbl)	Fuel Stored
Tank No. 2	80,000	No. 6 Fuel Oil
Tank No. 3	150,000	No. 6 Fuel Oil
Tank No. 4	55,000	No. 2 Fuel Oil
Tank No. 5	75,000	No. 2 Fuel Oil

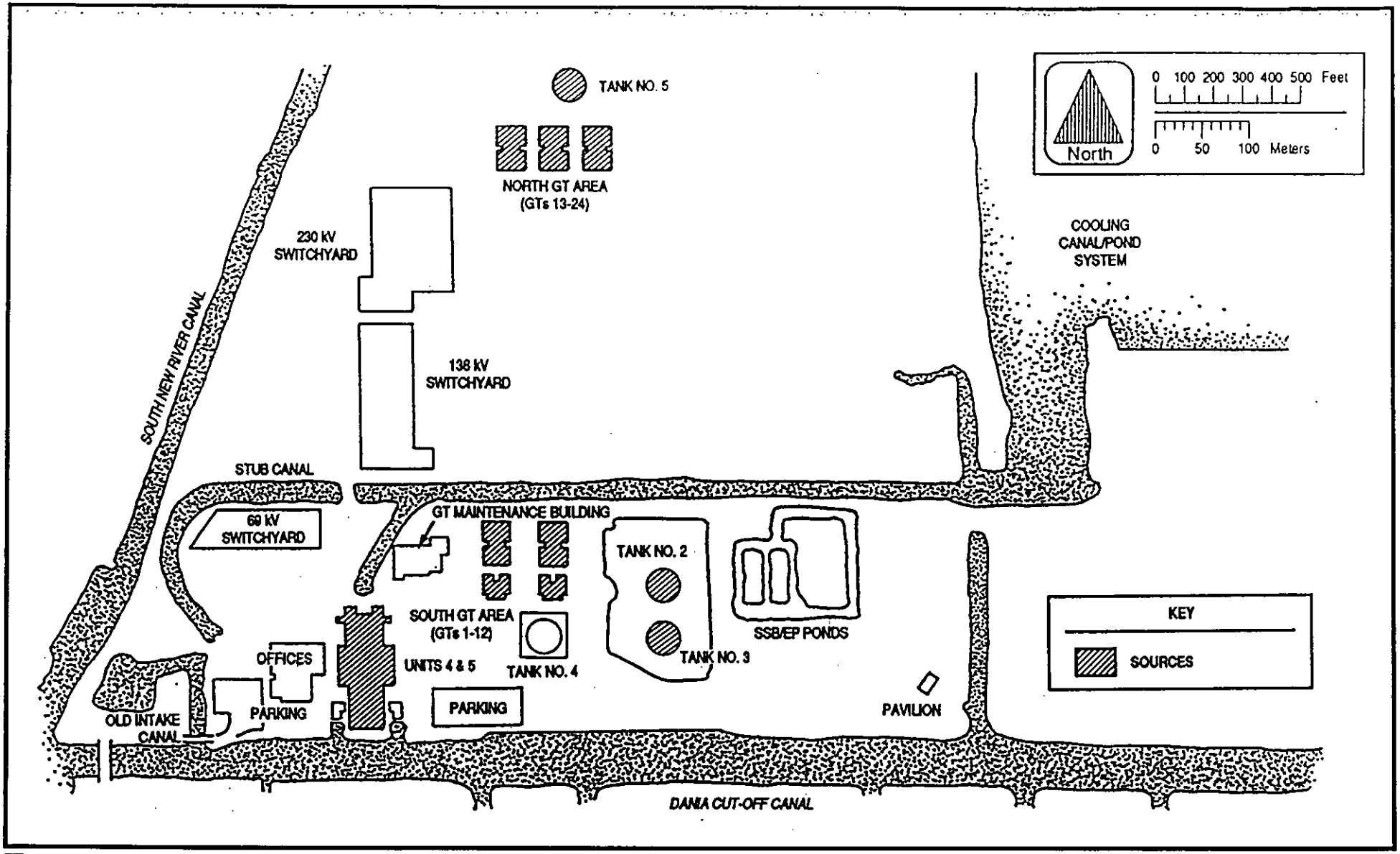

Figure 1 SOURCES OF AIRBORNE EMISSIONS

Lauderdale
Repowering
Project

FPL

The existing 150,000-barrel (bbl) tank (Tank No. 3), which is used for No. 6 fuel oil storage, will be converted for storage of No. 2 fuel oil. The 55,000-bbl tank (Tank No. 4) which currently is used to store No. 2 fuel oil for the GTs, will be removed. Two other existing tanks with capacities of 80,000 bbl (Tank No. 2) and 75,000 bbl (Tank No. 5) will continue to be used for No. 6 and No. 2 fuel oil storage, respectively.

There are also a number of small auxiliary storage tanks located at the Lauderdale plant, including metering tanks, lube oil tanks, and a diesel fuel and gasoline tank. All these are 6,000 gal capacity or less. Because of the small size and throughput associated with these tanks, they are considered insignificant sources of VOC emissions.

The changes in the tanks at Lauderdale are planned for early 1991. Table 1 presents the estimated emissions of volatile organic compounds (VOCs) from the storage tanks. VOCs are the only pollutant emitted from the tanks. These emissions result from working and breathing vapor losses. Maximum potential emissions are presented for the Nos. 2, 3, and 5 tanks operating in their future mode. Actual VOC emissions based on historic operating data are presented for the existing Tanks No. 3 and No. 4. The total potential VOC emissions from the tanks after the proposed changes are implemented are 9.81 tons per year (TPY) (0.05 + 6.38 + 3.38).

For VOC nonattainment applicability purposes, the net charge in VOC emissions due to the changes in the tanks must be based on those tanks which are being physically modified or are changing their method of operation. Therefore, in the case of the proposed changes, only Tanks No. 3 and 4 are considered. For Tank No. 3, the net change in VOC must be based upon future maximum potential emissions minus current actual emissions. Tank No. 4 is being removed, and therefore current actual emissions are credited as a decrease. As a result, for nonattainment applicability purposes, the net change in VOC emissions resulting from the tank changes is 5.41 TPY (6.38 - 0.10 - 0.87).

The Lauderdale Plant has historically been a minor source of VOCs. Fuel usage and corresponding VOC emission data for the period 1969 through 1989

are presented in Table 2 for Units 4 and 5 and in Table 3 for GTs 1-24. Table 4 presents a summary of total historic VOC emissions, exclusive of tank emissions, from the Lauderdale Plant.

During the previous 20 years, the maximum VOC emission rate for GTs 1-24 plus Units 4 and 5 was 54.6 TPY, which occurred in 1973. The maximum VOC emission rate, including breathing and working losses from tanks, was 56.9 TPY. For each of the last 15 years, the annual VOC emission rate from GTs 1-24 plus Units 4 and 5 has been less than 40 TPY (see Table 4). This emission level is considerably below the 100 TPY rate which classifies a source as "major" based on potential emissions.

The purpose of this permit application is to limit potential VOC emissions from the existing Lauderdale Plant to 99.9 tons per year, thereby making the existing facility a "minor" source of VOC emissions for regulatory purposes. Historic plant operating data show that the facility has in fact been a minor source of VOCs. Since future VOC emissions from the fuel storage tanks (Nos. 2, 3, and 5) have been calculated to be 9.8 TPY (see Table 1), the permit limitation requested by FPL for existing Units 4 and 5 and GTs 1-24 is 90.1 TPY (99.9 - 9.8). The permit limitation may be expressed as:

$$\text{VOC emissions Units 4\&5} + \text{VOC emissions GTs 1-24} \leq 90.1 \text{ TPY} \quad (1)$$

Since Units 4 and 5 use either natural gas or No. 6 fuel oil and GTs 1-24 use either natural gas or No. 2 fuel oil, Equation 1 can be written as:

$$\text{VOC emissions Units 4\&5 nat. gas} + \text{VOC emissions Units 4\&5 oil} + \text{VOC emissions GTs 1-24 nat. gas} + \text{VOC emissions GTs 1-24 oil} \leq 90.1 \quad (2)$$

Actual VOC emissions are calculated on an annual or monthly basis by using the actual heat input (HI), derived from the amount of fuel actually used and its actual heating value, and multiplying the HI by the VOC emission factor (EF) for each source and fuel fired.

The permit limitation thus becomes:

$$(HI_{U4\&5NG} \times EF_{U4\&5NG}) + (HI_{U4\&5OIL} \times EF_{U4\&5OIL}) + (HI_{GTNG} \times EF_{GTNG}) + (HI_{GTOIL} \times EF_{GTOIL}) \leq 90.1 \text{ TPY}$$

where:

$HI_{4\&5NG}$ = Heat Input to Units 4 and 5 due to natural gas firing,

$HI_{U4\&5OIL}$ = Heat Input to Units 4 and 5 due to No. 6 oil firing,

HI_{GTNG} = Heat Input to GT's 1-24 due to natural gas firing,

HI_{GTOIL} = Heat Input to GT's 1-24 due to No. 2 oil firing,

$EF_{U4\&5NG}$ = VOC emission factor for Units 4 & 5 for natural gas firing,

$EF_{U4\&5OIL}$ = VOC emission factor for Units 4 & 5 for No. 6 oil firing,

EF_{GTNG} = VOC emission factor for GT's 1-24 for natural gas firing,

EF_{GTOIL} = VOC emission factor for GT's 1-24 for No. 2 oil firing.

Emission factors for each source and fuel fired are presented in Table 5.

Tables 2, 3, and 4 demonstrate that the Lauderdale Plant has been a minor source for VOC in the past, and the requested permit limitation will assure that it will continue to be a minor source in the future. In addition to limiting VOCs, the requested permit limitation will also reduce potential emissions of sulfur dioxide, nitrogen oxides, carbon monoxide, and PM10 from the existing Lauderdale Plant.

Table 1. VOC Emissions from Storage Tanks At FPL Lauderdale Plant

Description	No. 2 Tank (Future potential)	No. 3 Tank (Future potential)	No. 5 Tank (Future potential)	No. 3 Tank (Current actual)	No. 4 Tank (Current actual)
Type of Liquid Stored	No. 6 Fuel Oil	No. 2 Fuel Oil	No. 2 Fuel Oil	No. 6 Fuel Oil	No. 2 Fuel Oil
Tank Volume (gallons)	3,360,000	6,300,000	3,150,000	6,300,000	2,310,000
Total Annual Throughput (gallons)	192,642,943[a]	688,302,094[b]	343,635,079[c]	19,751,871[d]	1,656,000[e]
Turnovers Per Year	57.3	109.3	109.1	3.1	0.72
Molecular Weight of Vapor	130.0	130.0	130.0	190.0	130.0
Storage Temperature (oF)	75.0	75.0	75.0	75.0	75.0
Vapor Press. @ Storage Temperature (psia)	0.0001	0.0105	0.0105	0.0001	0.0105
Tank Diameter (ft)	120.0	150.0	120.0	150.0	100.0
Average Vapor Space Height (ft)	20.0	24.0	19.0	24.0	20.0
Average Diurnal Temperature Change (oF)	20.0	20.0	20.0	20.0	20.0
Paint Factor	1.33	1.33	1.33	1.33	1.33
Product Factor	1.0	1.0	1.0	1.0	1.0
Turnover Factor	0.6	0.4	0.4	1.0	1.0
Breathing Losses (lb/yr)	80.2	3730.9	2251.2	189.3	1685.7
(tons/yr)	0.04	1.87	1.13	0.09	0.84
Working Losses (lb/yr)	27.0	9019.5	4503.0	6.8	54.3
(tons/yr)	0.01	4.51	2.25	0.003	0.03
Total Emissions (tons/yr)	0.05	6.38	3.38	0.10	0.87

[a]Assumes 100 percent of the potential No. 6 fuel oil usage of Units 4 and 5.
[b]Assumes 66.7 percent of the potential No. 2 fuel oil usage required for GTs 1-24.
[c]Assumes 33.3 percent of the potential No. 2 fuel oil usage required for GTs 1-24.
[d]Creditable emission decrease for ceasing No. 6 fuel oil use; assumes 66.7 percent of the 1969 through 1989 average fuel usage for Units 4 and 5 (see Table 2).
[e]Creditable emission decrease for removing Tank No. 4; annual throughput is the 1970 through 1989 average for GTs 1-12 which are located adjacent to the tank.

Table 2. Fuel Usage and VOC Emissions for Lauderdale Units 4 and 5

Year	Unit 4 Natural Gas (10^6 ft^3)	Unit 4 No. 6 Fuel Oil (10^3 gal.)	Unit 5 Natural Gas (10^6 ft^3)	Unit 5 No. 6 Fuel Oil (10^3 gal.)	VOC Emissions (TPY)
1989	2,451	6,272	868	3,283	5.95
1988	1,279	3,460	1,937	3,948	5.07
1987	2,110	993	2,089	1,785	3.99
1986	1,857	0	2,356	468	3.13
1985	2,103	983	1,309	1,343	3.27
1984	938	6,268	818	5,498	5.70
1983	1,049	7,208	792	6,871	6.64
1982	1,611	3,397	1,957	5,481	5.87
1981	402	16,884	259	20,803	14.78
1980	2,161	20,301	1,788	21,098	18.50
1979	2,796	22,605	1,870	25,203	21.43
1978	1,937	20,983	4,046	20,849	20.08
1977	2,220	15,103	3,990	11,147	14.32
1976	2,958	18,766	4,991	18,472	19.71
1975	3,160	23,507	3,609	19,736	21.17
1974	2,756	29,413	2,367	31,794	26.84
1973	2,281	43,285	1,799	48,808	37.85
1972	5,979	36,036	4,434	32,928	33.50
1971	4,525	403	5,610	22,384	15.75
1970	6,015	18,358	6,769	328	16.05
1969	3,753	13,440	3,811	11,970	14.95
Average	2,588	14,651	2,737	14,962	14.98

Note: VOC emissions based on actual fuel usage and emission factors given in Table 5.

10^6 ft^3 = million cubic feet.
10^3 gal = thousand gallons.
TPY = tons per year.

Table 3. Fuel Usage and VOC Emissions for Lauderdale GTs 1-24

Year	GTs 1-12 Natural Gas (10^6 ft^3)	GTs 1-12 No. 2 Fuel Oil (10^3 gal)	GTs 13-24 Natural Gas (10^6 ft^3)	GTs 13-24 No. 2 Fuel Oil (10^3 gal)	VOC Emissions (TPY)
1989	812	1795	1,097	3,144	3.85
1988	169	276	372	435	1.03
1987	265	82	1,256	702	2.78
1986	69	29	229	414	0.57
1985	296	283	555	534	1.59
1984	384	169	263	138	1.18
1983	281	375	188	265	0.89
1982	539	151	188	158	1.33
1981	488	1,323	1,080	1,418	3.04
1980	2,289	4,716	5,566	3,782	14.78
1979	2,760	3,354	3,273	7,953	11.77
1978	1,355	2,405	3,841	4,333	9.87
1977	861	1,817	2,534	4,176	6.59
1976	493	1,205	1,834	2,225	4.46
1975	1,156	7,296	421	3,727	3.80
1974	4,872	1,735	3,984	586	16.01
1973	2,763	5,032	6,064	6,338	16.77
1972	1,841	719	4,440	505	11.32
1971	4,910	360	0	0	8.80
1970	3,708	0	0	0	6.62
Average	1,516	1,656	2,066	2,269	6.34

Note: VOC emissions based on actual fuel usage and emission factors given in Table 5. Heat content of natural gas and No. 2 fuel oil assumed to be 1,050 Btu/ft^3 and 136,800 Btu/gal, respectively.

10^6 ft^3 = million cubic feet.
10^3 gal = thousand gallons.
TPY = tons per year.

Table 4. Actual VOC Emissions for Lauderdale Units 4 and 5 and GTs 1-24

Year	Units 4 and 5 VOC Emissions (TPY)	GTs 1-24 VOC Emissions (TPY)	Total VOC Emissions[a] (TPY)
1989	5.95	3.85	9.80
1988	5.07	1.03	6.10
1987	3.99	2.78	6.77
1986	3.13	0.57	3.70
1985	3.27	1.59	4.86
1984	5.70	1.18	6.88
1983	6.64	0.89	7.53
1982	5.87	1.33	7.20
1981	14.78	3.04	17.82
1980	18.50	14.78	33.28
1979	21.43	11.77	33.20
1978	20.08	9.87	29.95
1977	14.32	6.59	20.91
1976	19.71	4.46	24.17
1975	21.17	3.80	24.97
1974	26.84	16.01	42.85
1973	37.85	16.77	54.62
1972	33.50	11.32	44.82
1971	15.75	8.80	24.55
1970	16.05	6.62	22.67
1969	14.95	0	14.95
Average	14.98	6.04	21.03

[a]Maximum actual VOC emissions from storage tanks during this period were 2.3 TPY which occurred in 1973.

Table 5. Reference Information for VOC Emissions for Existing Lauderdale Plant

Parameter	Units	Source	Data
VOC Emission Factor			
Fossil Steam--Oil	$lb/10^3$ gal	AP-42	0.76
	$lb/10^6$ Btu	AP-42	0.0050
Fossil Steam--Gas	$lb/10^6$ cf	AP-42	1.4
	$lb/10^6$ Btu	AP-42	0.0013
Gas Turbine--Oil	$lb/10^6$ Btu	Testing	0.0013[a]
Gas Turbine--Gas	$lb/10^6$ Btu	Testing	0.0034[a]
Heat Input			
Units 4 & 5--per Unit--Oil	10^6 Btu/hr	FPL	1,650
Units 4 & 5--per Unit--Gas	10^6 Btu/hr	FDER Permit	1,725
GTs 1-24--per Unit--Oil	10^6 Btu/hr	FDER Permit	675
GTs 1-24--per Unit--Gas	10^6 Btu/hr	FPL	702
Maximum VOC Emissions			
Units 4 & 5--Oil Total--both units	lb/hr		16.5
Units 4 & 5--Gas Total--both units	lb/hr		4.5
GTs 1-24--Oil Total--24 units	lb/hr		21.1
GTs 1-24--Gas Total--24 units	lb/hr		57.3

[a]Developed from testing (see Attachment B).

Table 6. Summary of Existing Air Emission Sources at the FPL Lauderdale Plant

Source	Location (m)[a]		Stack Data (ft)		Operating Data		Maximum Emissions[b] (lb/hr)			
	X	Y	Height	Diameter	Temperature (°F)	Velocity (ft/sec)	SO_2	NO_x	PM	CO
Units 4 and 5	-50	0.0	151.0	14.0	300	58	3,630	1,892	330	138
Gas Turbines 1 - 12	0.0	110.0	43.5	18.0[c]	860	70	4,164	4,032	297	966
Gas Turbines 13 - 24	0.0	540.0	43.5	18.0[c]	860	70	4,164	4,032	297	966

[a]Relative to UTM: 580,200E and 2,883,300N; Zone 17.

[b]Total emissions from identified units. Calculation of maximum emissions based on the following:

SO_2 - Units 4 and 5: 0.964 percent sulfur
GTs 1-24: 0.5 percent sulfur

NO_x - Units 4 and 5: Based on AP-42 for natural gas
GTs 1-24: Based on AP-42 for fuel oil

PM - Units 4 and 5: Based on AP-42 for fuel oil
GTs 1-24: Based on AP-42 for fuel oil.

CO - Units 4 and 5: Based on AP-42 for natural gas
GTs 1-24: Based on AP-42 for natural gas

[c]Effective stack diameter based on actual stack area.

Note: All operational and emissions data based on FDER permitted rates. The following permits are relevant: Unit 4-AO-06-146594; Unit 5-AO-06-143213; GT Units 1-2 AO-06-148760 and GT Units 13-24 AO-06-148761.

ATTACHMENT B

VOC EMISSION ESTIMATES FOR GAS TURBINES 1-24

Emission estimates for VOCs from gas turbines contained in EPA Air Pollutant Emission Factors ,i.e., AP-42 are for unburned hydrocarbons. Investigations into the possible VOC emissions for the type of gas turbine unit at the Lauderdale Plant were unsuccessful in determining the amount of unreactive hydrocarbons, i.e., methane and ethane, that may be in the amount of unburned hydrocarbons. As a result, source testing which excluded these nonreactive hydrocarbons was performed as allowed by FDER Rule 17-2.100(223) F.A.C. The results of these tests are presented in the following report.

The emissions from the tests were evaluated statistically to determine an upper limit that would be applicable to all 24 gas turbines. The results of this evaluation indicated an upper bound for the emissions as follows:

Natural Gas - 0.0034 lb VOC per million Btu heat input
No. 2 Fuel Oil - 0.0013 lb VOC per million Btu heat input

The natural gas emission factor reflects an upper confidence limit of 95 percent. This confidence limit was chosen to account the generally higher VOC emissions on natural gas relative to fuel oil and the greater operating usage on natural gas. In addition, natural gas can contain minute quantities of ethylene, propane, butane and, hexane and higher molecular weight gases that are considered VOCs. The fuel oil emission factor was based on a 90 percent confidence limit. All statistics were based on the t distribution.

SOURCE TEST REPORT

VOLATILE ORGANIC COMPOUND EMISSIONS EXCLUDING METHANE AND ETHANE

FLORIDA POWER AND LIGHT COMPANY
LAUDERDALE POWER PLANT
GAS TURBINE PEAKING UNITS 8 AND 23

NOVEMBER 8 AND 10, 1989

Prepared for:

KBN ENGINEERING AND APPLIED SCIENCES, INC.
1034 N.W. 57th STREET
GAINESVILLE, FLORIDA 32605

Prepared by:

AIR CONSULTING AND ENGINEERING, INC.
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(904) 335-1889

163-89-05

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air Consulting and Engineering, Inc.

REPORT CERTIFICATION

To the best of my knowledge, all applicable field and analytical procedures comply with Florida Department of Environmental Regulation requirements and all test data and plant operating data are true and correct.

Stephen L. Neck

Stephen L. Neck, P.E.

State of Florida
Registration No. 20020

November 22, 1989

Date

SEAL

2106 N.W. 67th Place, Suite 4 • Gainesville, Florida 32606 • (904) 335-1889

1.0 INTRODUCTION

A study of non-methane/ethane emissions of Volatile Organic Compounds (VOC) was performed at the Florida Power and Light's Lauderdale Power Plant. Testing was performed on November 8 and 10, 1989. This study of gas turbine emissions supplements a previous test report of August-September 1989, in which emissions of total VOC's and non-methane organics were quantified.

A Byron 301 mon-methane VOC analyzer with a flame ionization detector (FID) was utilized for testing. The gas chromatograph column temperature and carrier flow were raised above the normal settings to enable seperation of both methane and ethane from the remainder of the volatile organics. A more detailed description of the technique is provided in Section 5.0.

Emissions from the two units were monitored during both natural gas and distillate fuel firing.

2.0 SUMMARY AND DISCUSSION OF RESULTS

Results of the testing are summarized in Table 1. Complete emission results and strip chart records are provided in Appendix B.

Table 1 Emission Summary
Florida Power and Light Company
Ft. Lauderdale Power Plant
November 8 and 10, 1989

Date	Fuel	Load MW	C_aH_a ppm	O_2 %	Fuel Factor	Emission Rate* lb/MMBTU Carbon
Unit 8						
11/8/89	Natural gas	32.5	0.41	16.82	8710	0.0017
11/8/89	Distillate	32.5	0.20	16.51	9190	0.0008
Unit 23						
11/10/89	Distillate	33.0	0.46	16.90	8710	0.0020
11/10/89	Oil	32.5	0.11	16.75	9190	0.0005

* $E = (\text{ppm } C_aH_a)\ (2.595 \times 10^{-9})\ (\text{Fuel Factor}) \left(\frac{20.9}{20.9 - \%O_2}\right)\ (36)$

Where 36 = molecular weight of carbon in C_aH_a

3.0 PROCESS DESCRIPTION AND OPERATION

Each of the 24 gas turbine generators is fired with two Rolls-Royce engines. The exhaust from each engine is expanded through a common turbine generator.

4.0 SAMPLING POINT LOCATION

Because the exhaust stack is filled with baffling material for noise control, there is no place to measure volumetric flows.

All samples were taken from a tee to the "combustibles analyzer" sample line provided for each unit.

5.0 FIELD AND ANALYTICAL PROCEDURES

The Byron 301 utilizes a Chromosorb 106 column to seperate methane from the remainder of VOC compounds. Since the constituents of natural gas are mainly methane and ethane, it is desireable to modify the analyzer to allow for the additional seperation of ethane, which, along with methane, is excluded from the VOC list by statute. During normal operation, the 301 column temperature is maintained at 50°C at a flame air pressure of 16 psi and a carrier pressure of 13 psi. To enable the column to seperate ethane as well as methane from the total, it was necessary to raise the column temperature to 71°C and to raise the flame air and carrier pressures to 31 and 29 psi, respectively.

The 301 analyzer operates on three minute cycles. A sample is continuously withdrawn from the stack and passes through a sample loop. Every three minutes the contents of the sample loop are injected into the G/C column. After a few seconds the methane, and in this case ethane, are passed through the column and into the FID. After approximately one minute, the analysis "window" is closed and the column is back flushed to pass the remainder of the VOC contents into the FID. Approximately two minutes is allowed for this analysis. To demonstrate performance of the analyzer, calibration gases of ≈25 ppm CH_4, ≈25 ppm C_2H_6, and three protocol 1 gases of C_3H_8 (3, 5, and 8.3 ppm C_3H_8/air) were utilized. It was demonstrated that the C_2H_6 was totally evolved during the normal methane analysis "window" after changing column operating parameters as previously mentioned.

The only complication to the testing arose from the fact that the new column operating parameters allowed the evolution of some very heavy organics that had previously been trapped in the column over its lifetime. This "background" was very constant, however, and was demonstrated by use of zero air response. Calibrations were made over this 0.5 ppm C_3H_8 response and almost perfect linearity was demonstrated.

APPENDIX A

COMPLETE EMISSION DATA

FPL-LAUDERDALE
UNIT 8
FT. LAUDERDALE, FLORIDA

NOVEMBER 8, 1989

LOAD	TIME	PPM C3H8	% O2	lb C/mmBTU	"F" FACTOR
32.5 MW	1203	0.30	16.425	0.0011	8710
NATURAL GAS	1206	0.50	16.425	0.0019	
	1209	0.45	16.425	0.0017	
	1212	0.45	16.350	0.0017	
	*	--	--	--	
	1223	0.35	16.350	0.0013	
	1226	0.40	16.350	0.0015	
	1229	0.40	16.350	0.0015	
	1232	0.40	16.325	0.0015	
	1235	0.40	16.325	0.0015	
	1238	0.45	16.325	0.0017	
	1241	0.45	16.275	0.0017	
	1244	0.40	16.275	0.0015	
	1247	0.40	16.275	0.0015	
	1250	0.45	16.275	0.0017	
	1253	0.40	16.275	0.0015	
	1256	0.45	16.275	0.0017	
	1259	0.40	16.275	0.0015	
	1302	0.40	16.275	0.0015	
	1305	0.40	16.250	0.0015	
AVERAGES:		0.41	16.321	0.0015	
			16.821**	0.0017**	

* Wait for zero air pressure

** Add 0.5 for drift

SOURCE: ACE, Inc., 1989

FPL-LAUDERDALE
UNIT 8
FT. LAUDERDALE, FLORIDA

NOVEMBER 8, 1989

LOAD	TIME	PPM C3H8	% O2	lb C/mmBTU	"F" FACTOR
32.5 MW	1340	0.30	16.575	0.0012	9190
OIL FIRING	1343	0.30	16.525	0.0012	
	1346	0.30	16.525	0.0012	
	1349	0.25	16.525	0.0010	
	1352	0.25	16.525	0.0010	
	1355	0.20	16.525	0.0008	
	1358	0.20	16.525	0.0008	
	1401	0.15	16.500	0.0006	
	1404	0.20	16.500	0.0008	
	1407	0.20	16.500	0.0008	
	1410	0.20	16.500	0.0008	
	1413	0.20	16.500	0.0008	
	*	--	--	--	
	1422	0.30	16.500	0.0012	
	1425	0.10	16.500	0.0004	
	1428	0.20	16.500	0.0008	
	1431	0.15	16.500	0.0006	
	1434	0.15	16.500	0.0006	
	1437	0.15	16.500	0.0006	
	1440	0.15	16.500	0.0006	
	1443	0.15	16.500	0.0006	
AVERAGES:		0.20	16.508	0.0008	

* Wait for air supply

SOURCE: ACE, Inc., 1989

FPL-LAUDERDALE
UNIT 23
FT. LAUDERDALE, FLORIDA

NOVEMBER 10, 1989

LOAD	TIME	PPM C3H8	% O2	lb C/mmBTU	"F" FACTOR
33.0 MW	1220	.55	16.900	0.0023	8710
NATURAL GAS	1223	.50	16.900	0.0021	
	1226	.55	16.900	0.0023	
	1229	.45	16.900	0.0019	
	1232	.45	16.900	0.0019	
	1235	.45	16.900	0.0019	
	1238	.45	16.900	0.0019	
	1241	.45	16.900	0.0019	
	1244	.45	16.900	0.0019	
	1247	.55	16.900	0.0023	
	1250	.45	16.900	0.0019	
	1253	.45	16.900	0.0019	
	1256	.45	16.900	0.0019	
	1259	.45	16.900	0.0019	
	1302	.45	16.900	0.0019	
	1305	.45	16.900	0.0019	
	1308	.45	16.900	0.0019	
	1311	.45	16.900	0.0019	
	1314	.45	16.900	0.0019	
	1317	.45	16.900	0.0019	
	1320	.45	16.900	0.0019	
AVERAGES:		0.46	16.900	0.0020	

SOURCE: ACE, Inc., 1989

FPL-LAUDERDALE
UNIT 23
FT. LAUDERDALE, FLORIDA

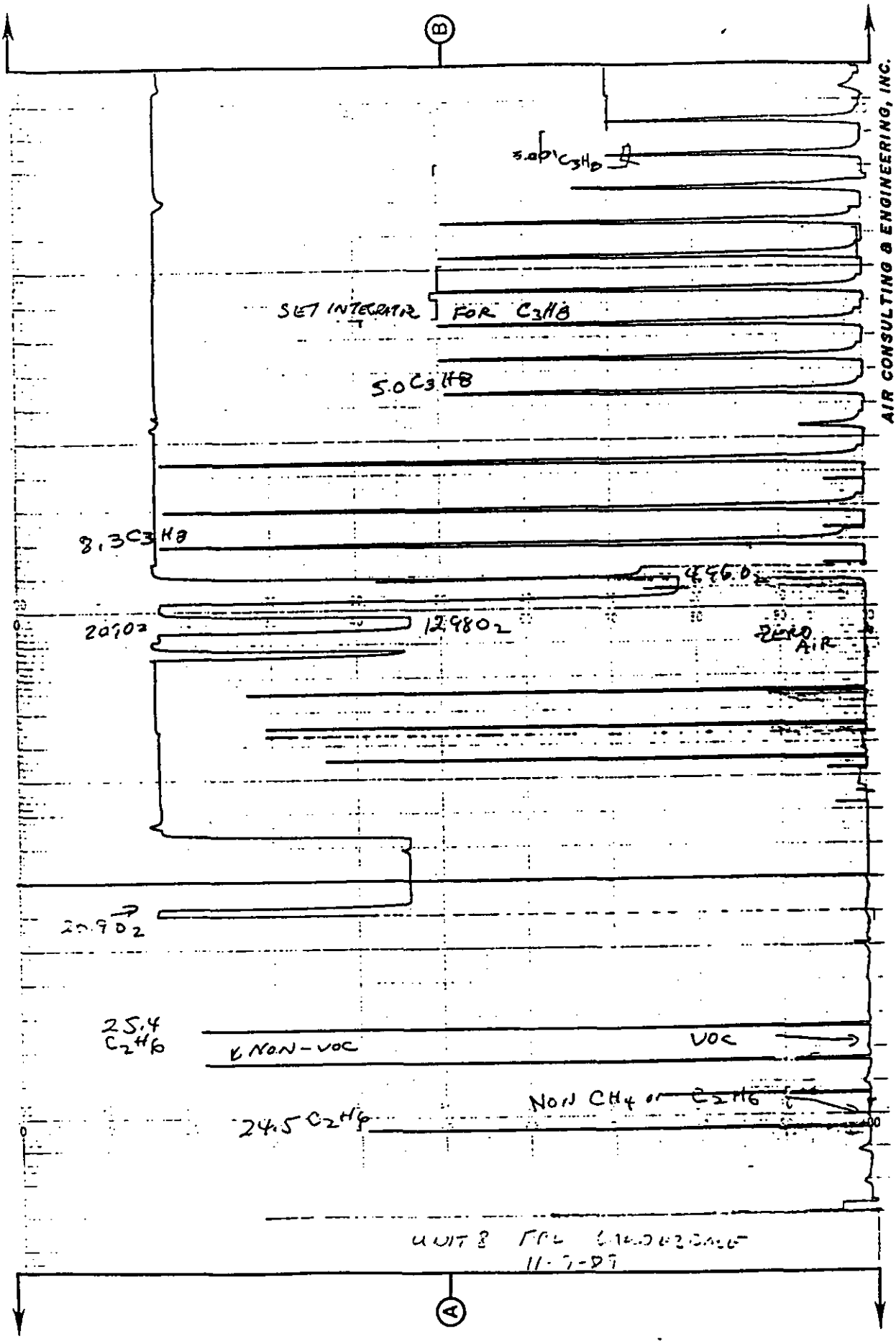
NOVEMBER 10, 1989

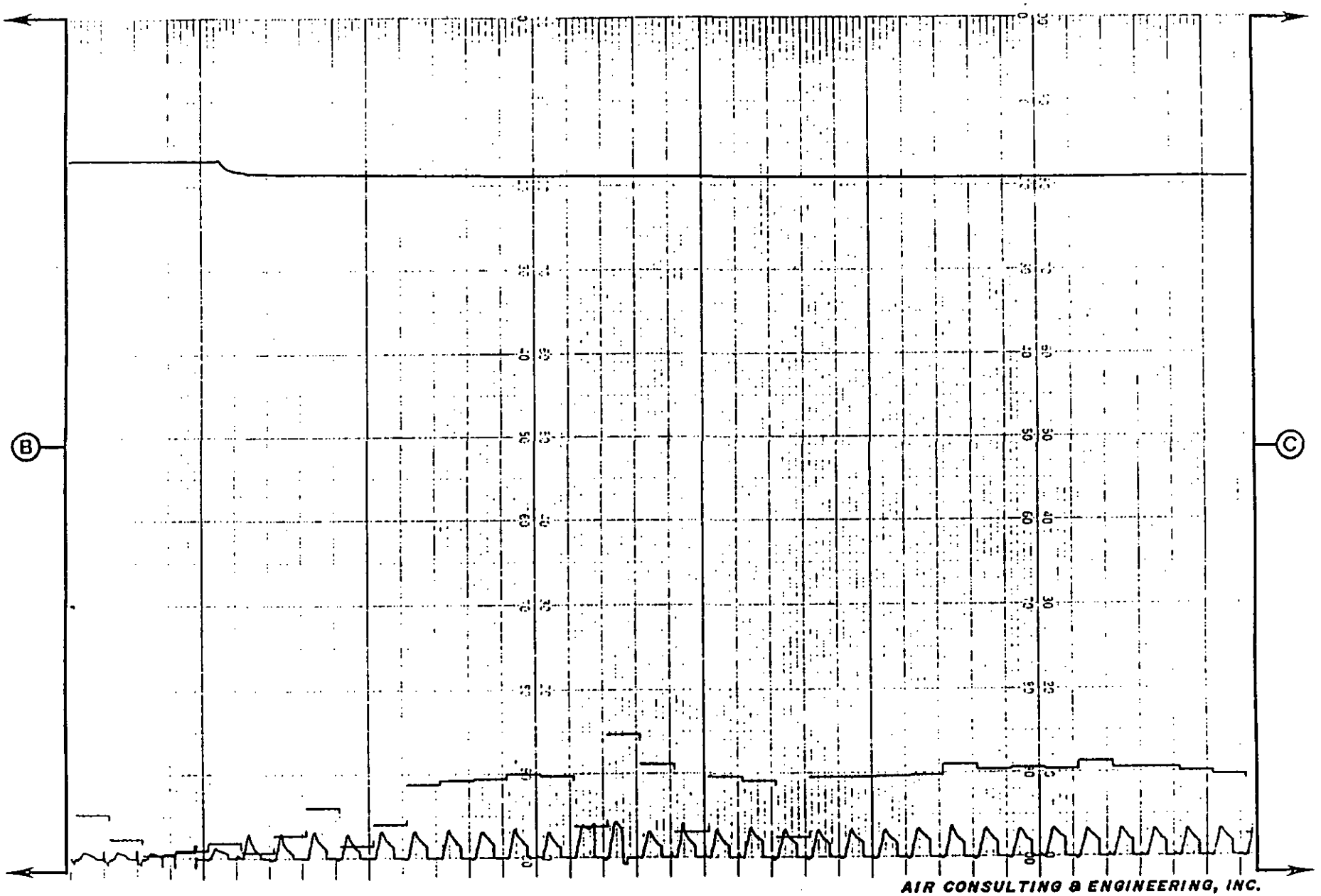
LOAD	TIME	PPM C3H8	% O2	lb C/mmBTU	"F" FACTOR
32.5 MW	1346	0.10	16.750	0.0004	9190
OIL FIRING	1349	0.10	16.750	0.0004	
	1352	0.15	16.750	0.0006	
	1355	0.10	16.750	0.0004	
	1358	0.15	16.750	0.0006	
	1401	0.10	16.750	0.0004	
	1404	0.15	16.750	0.0006	
	1407	0.10	16.750	0.0004	
	1410	0.10	16.750	0.0004	
	1413	0.10	16.750	0.0004	
	1417	0.10	16.750	0.0004	
	1420	0.10	16.750	0.0004	
	1423	0.15	16.750	0.0006	
	1426	0.10	16.750	0.0004	
	1429	0.10	16.750	0.0004	
	1432	0.10	16.750	0.0004	
	1435	0.10	16.750	0.0004	
	1438	0.15	16.750	0.0006	
	1441	0.10	16.750	0.0004	
	1443	0.10	16.750	0.0004	
	1446	0.10	16.750	0.0004	
AVERAGES:		0.11	16.750	0.0005	

SOURCE: ACE, Inc., 1989

APPENDIX B

STRIP CHART RECORDS
CALIBRATION GAS CERTIFICATIONS

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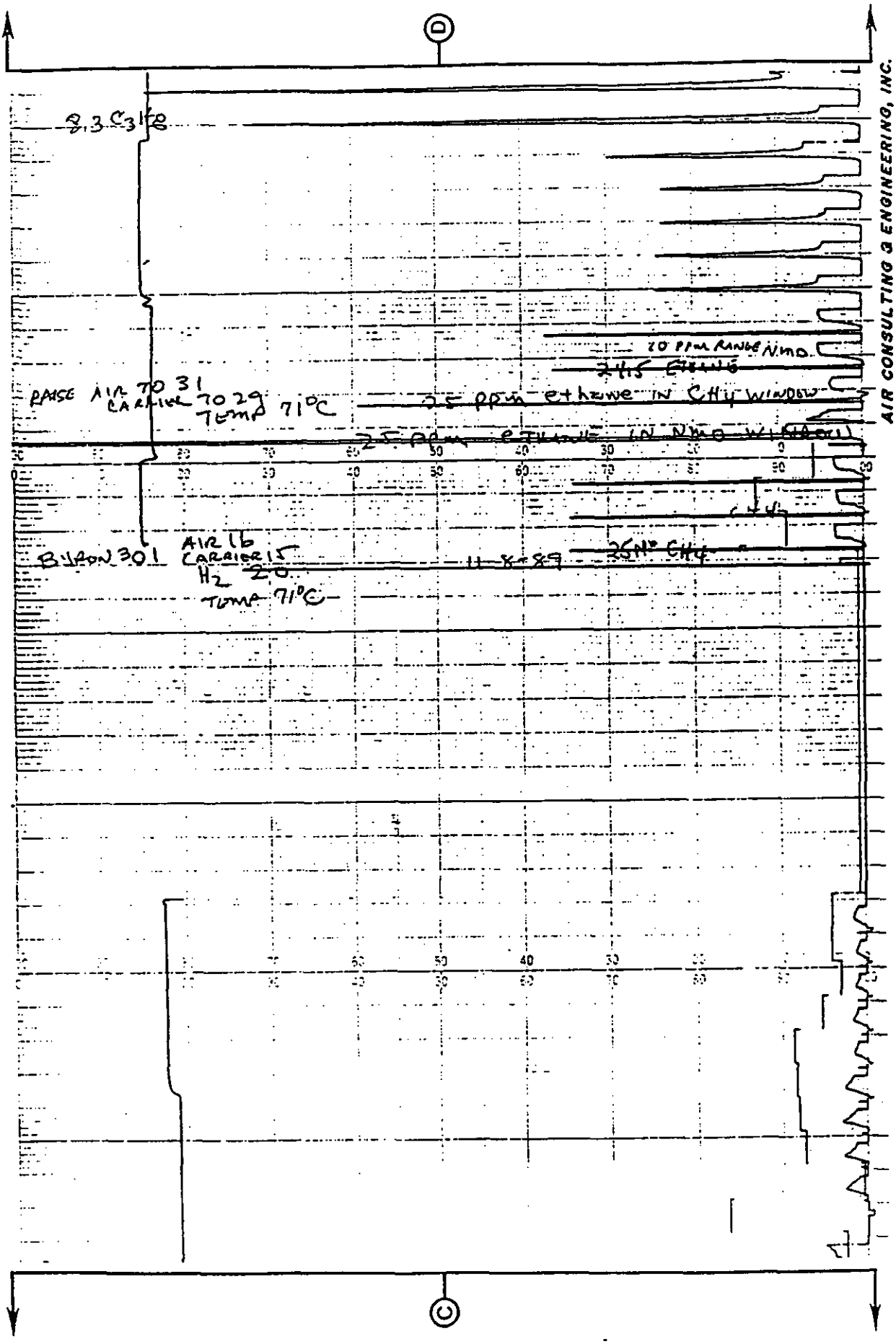
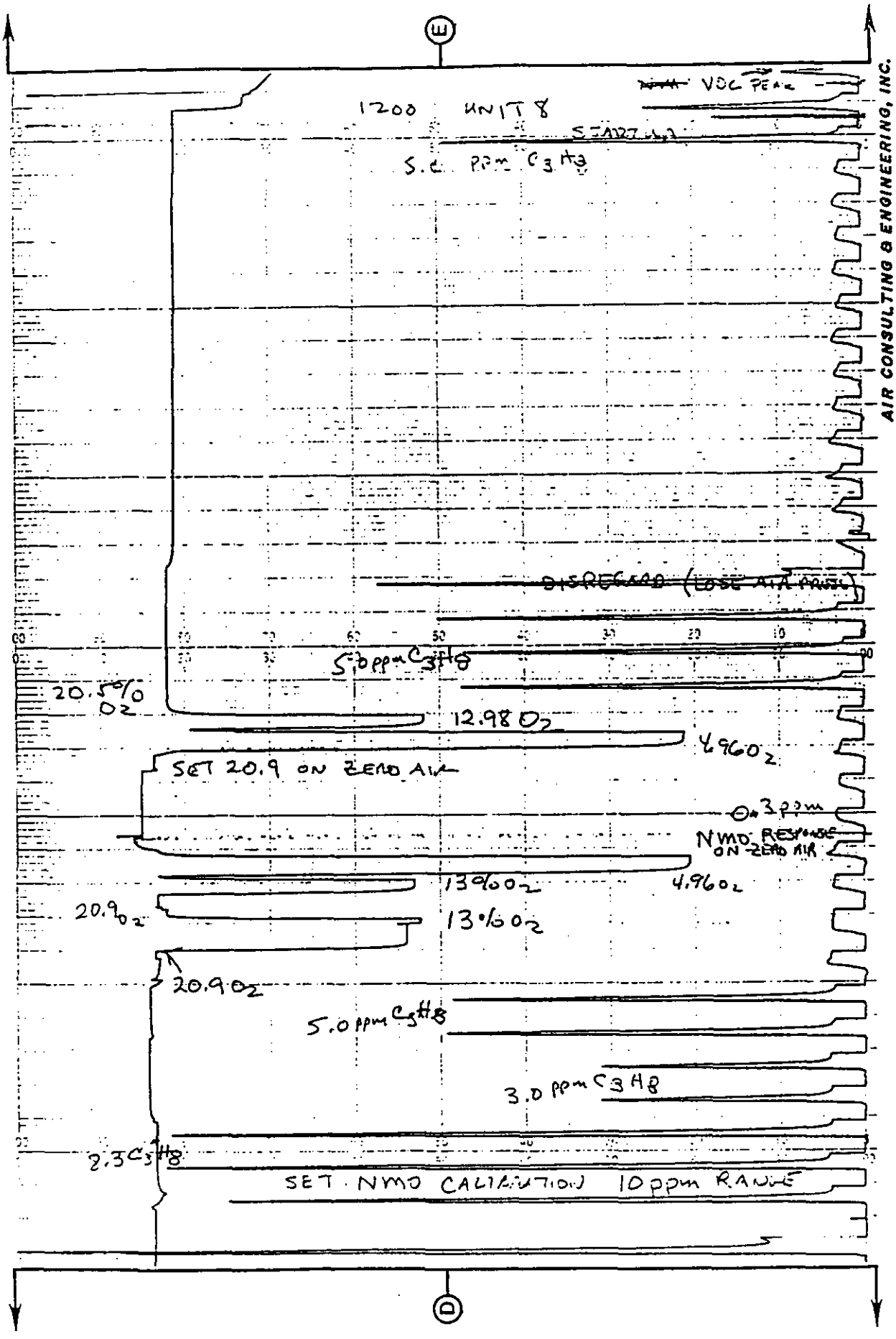

8.3 C3 H8
BASE AIR TO 31
CARRIER 29
TEMP 71°C
.5 ppm ethylene IN CHIP WINDOW
20 PPM RANGE N.M.O.
2.5 ppm ETHYLENE IN N2 + WINDOW
BYRON 301
AIR 16
CARRIER 15
H2 2.0
TEMP 71°C
11-8-89
26 N° CH4
AIR CONSULTING & ENGINEERING, INC.


VOC PEAK
1200 UNIT 8
START
5.0 ppm C3H8
DISREGARD (LOSE AIR PRESS)
5.0 ppm C3H8
20.5% O2
12.98 O2
4.96 O2
SET 20.9 ON ZERO AIR
0.3 ppm
NMO RESPONSE ON ZERO AIR
13.96 O2
4.96 O2
20.9 O2
13.96 O2
20.9 O2
5.0 ppm C3H8
3.0 ppm C3H8
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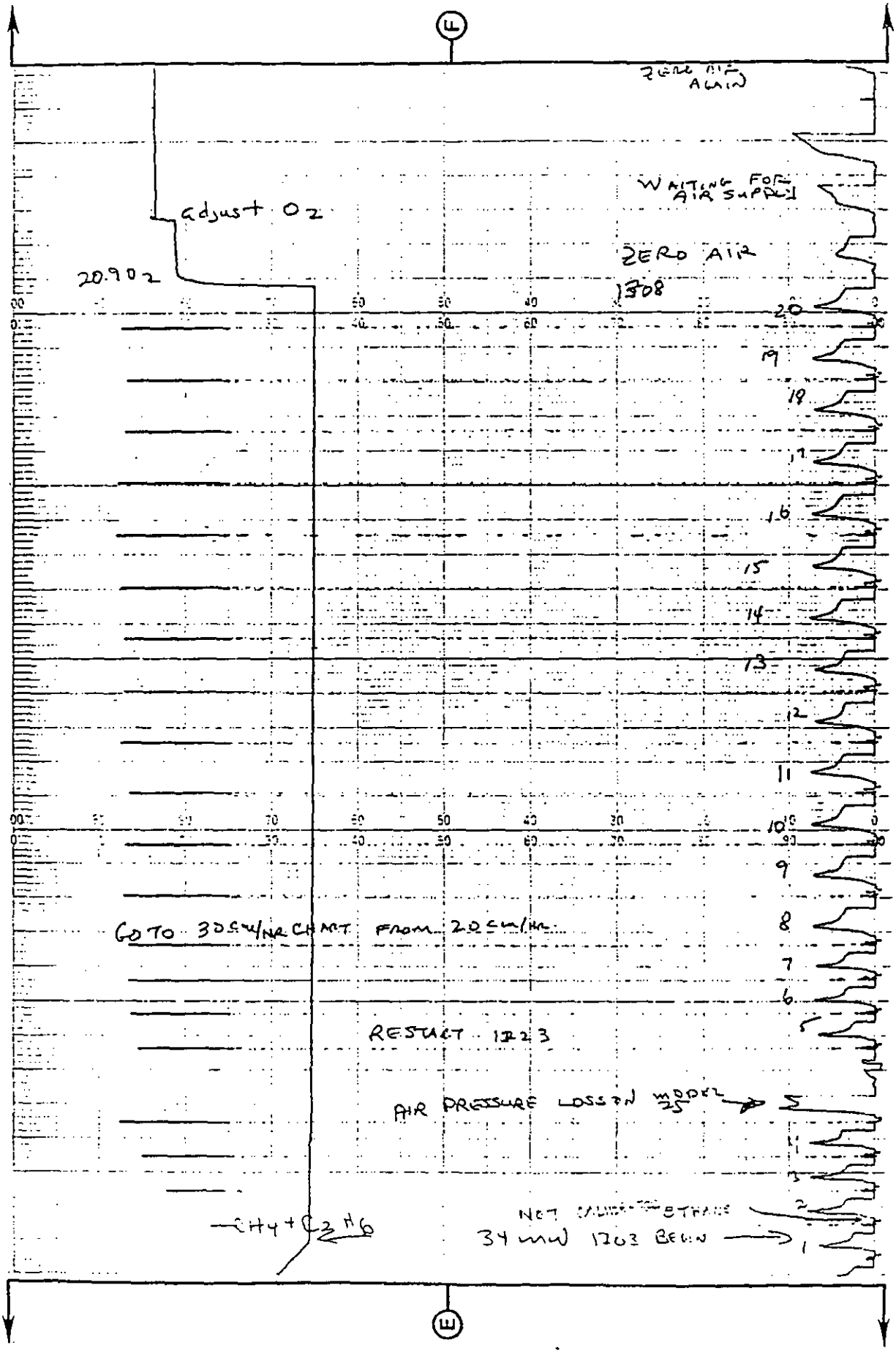

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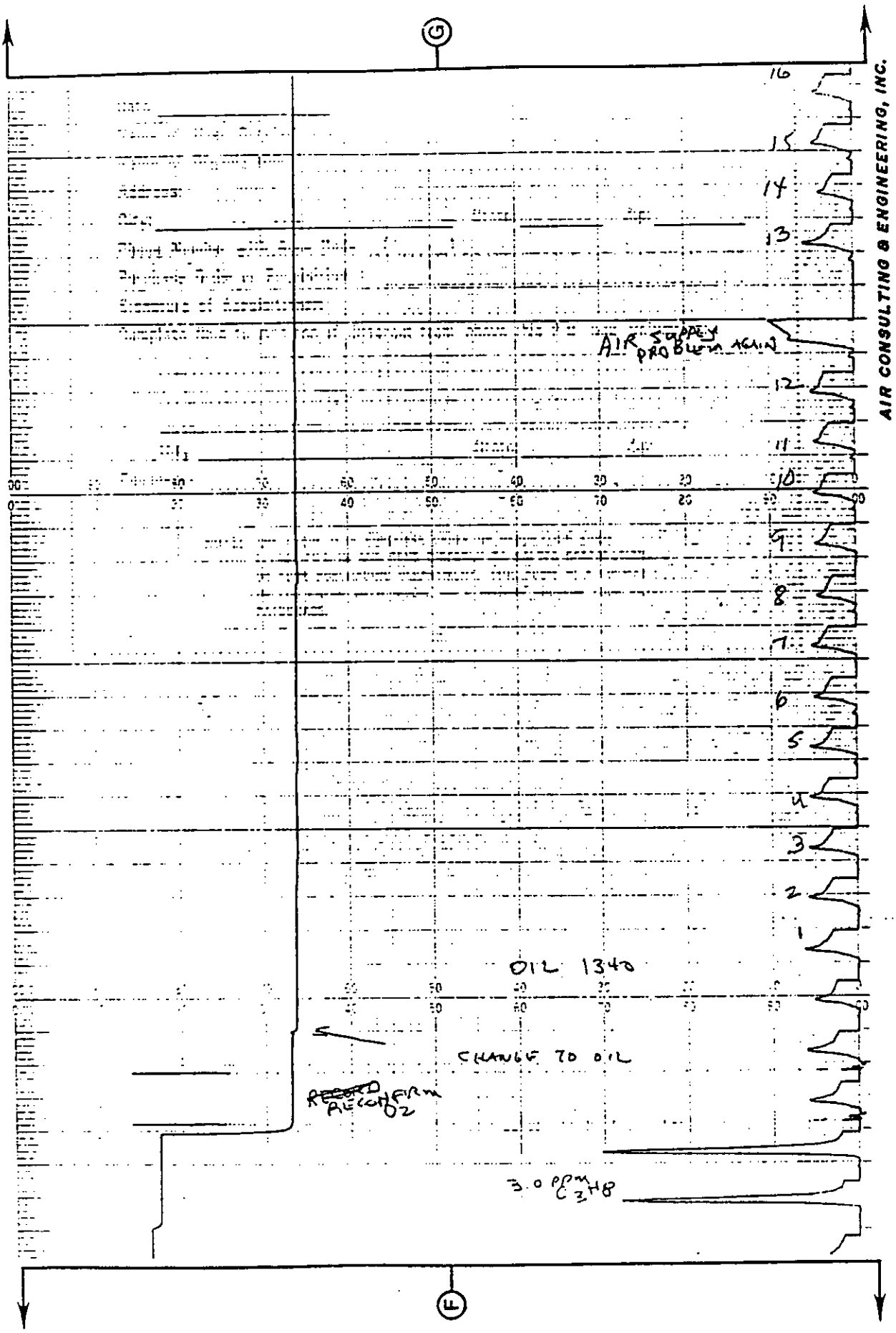

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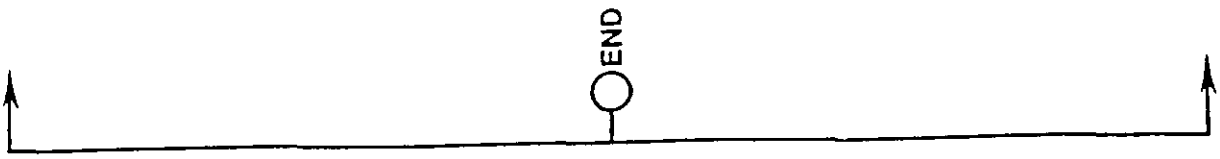
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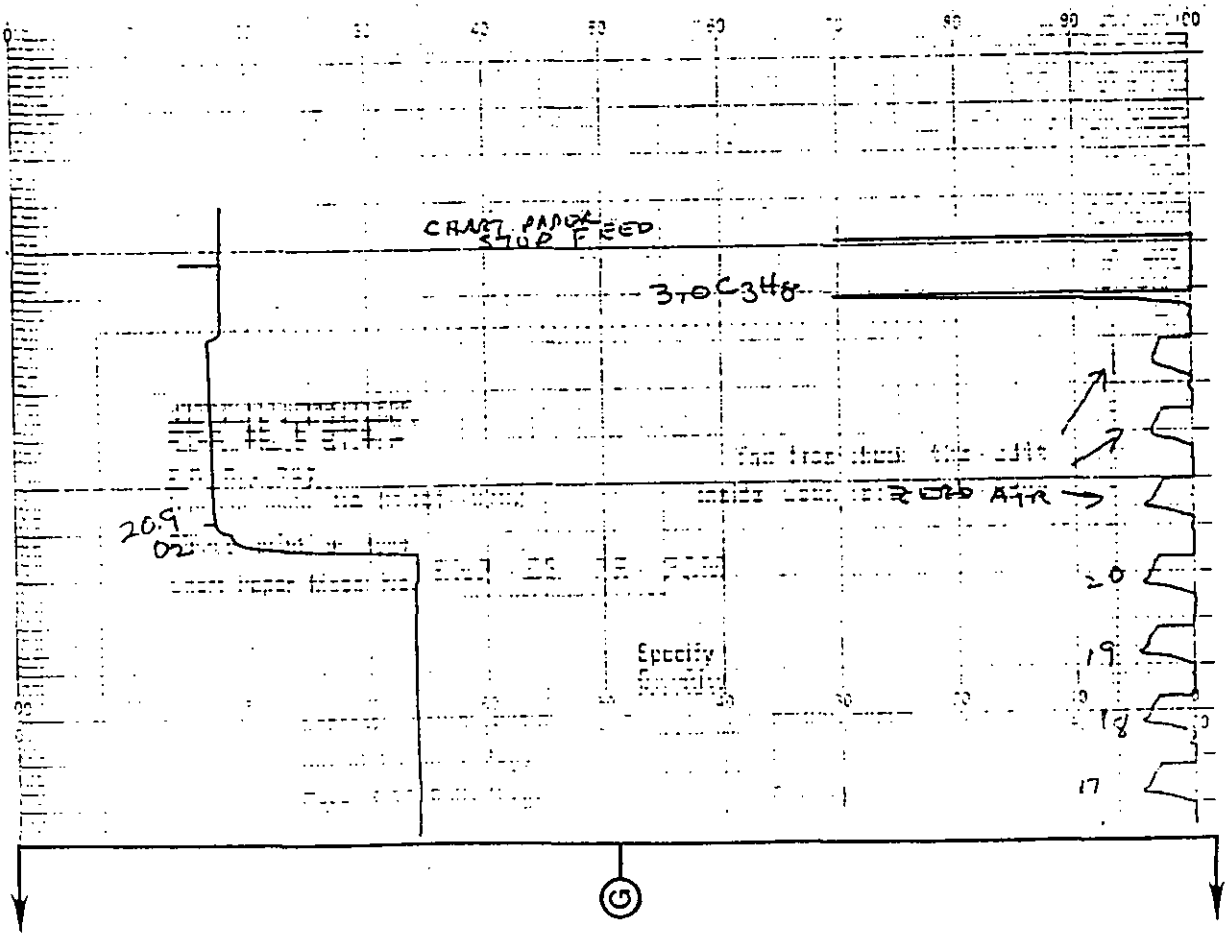
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17
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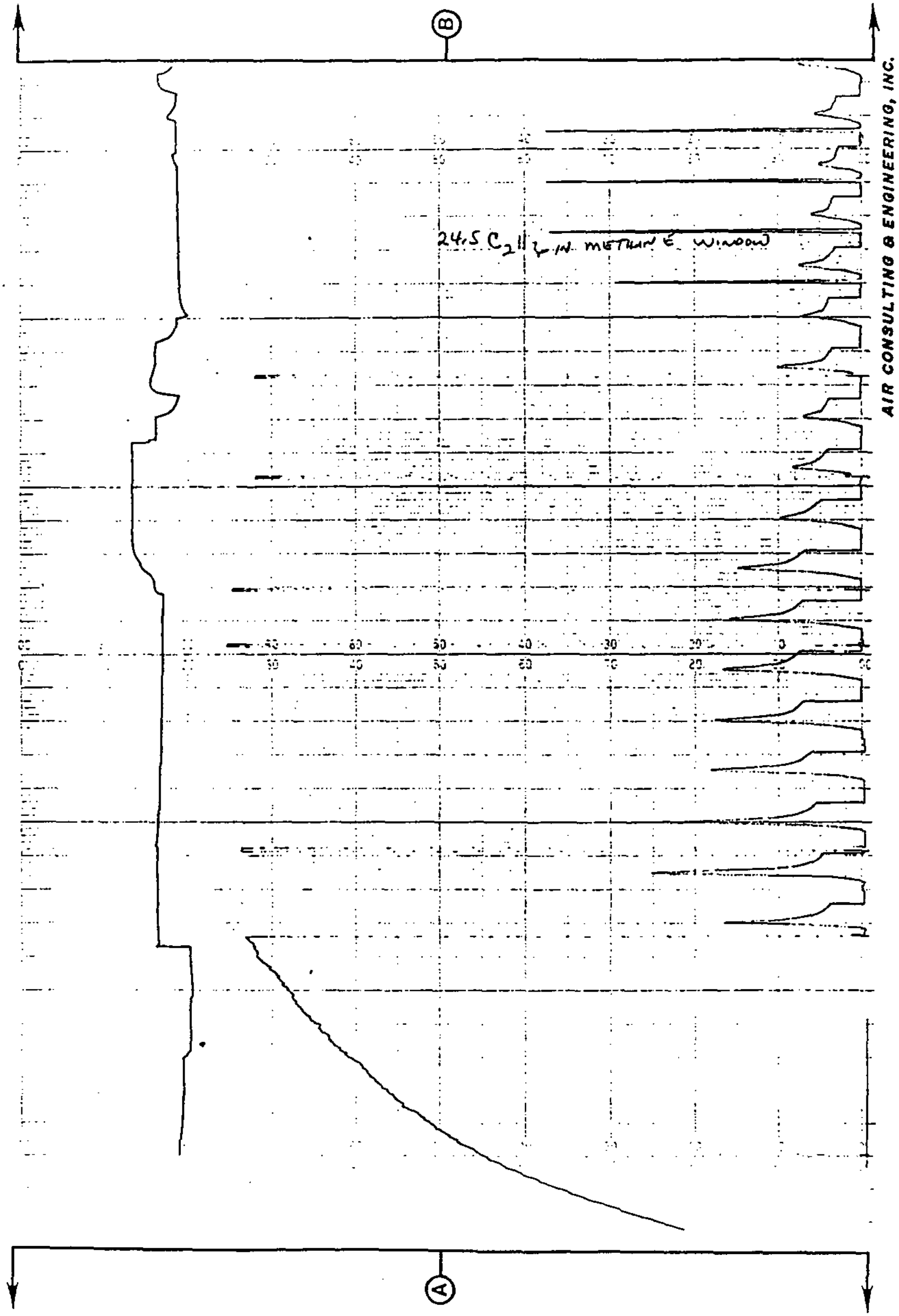
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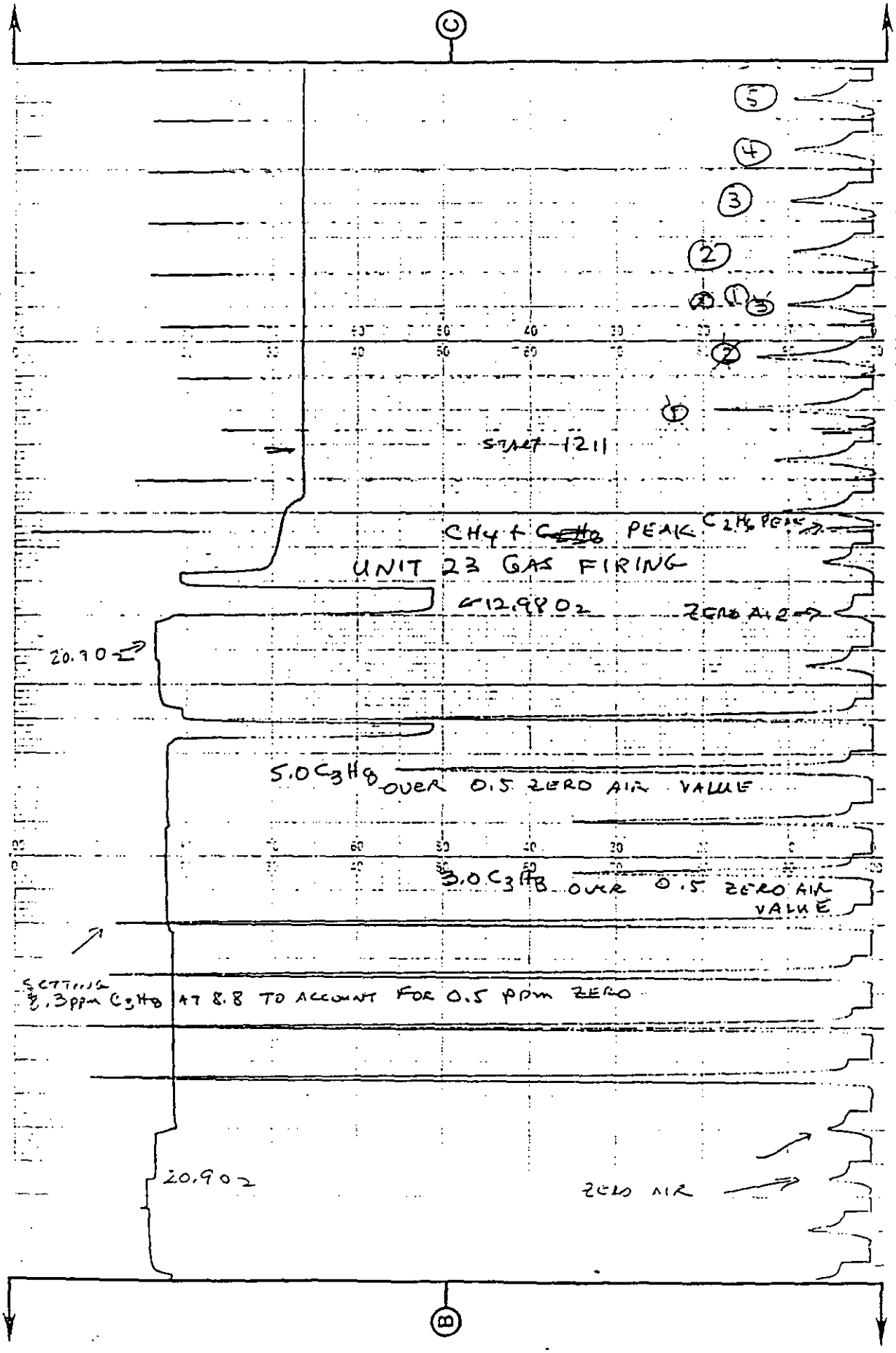
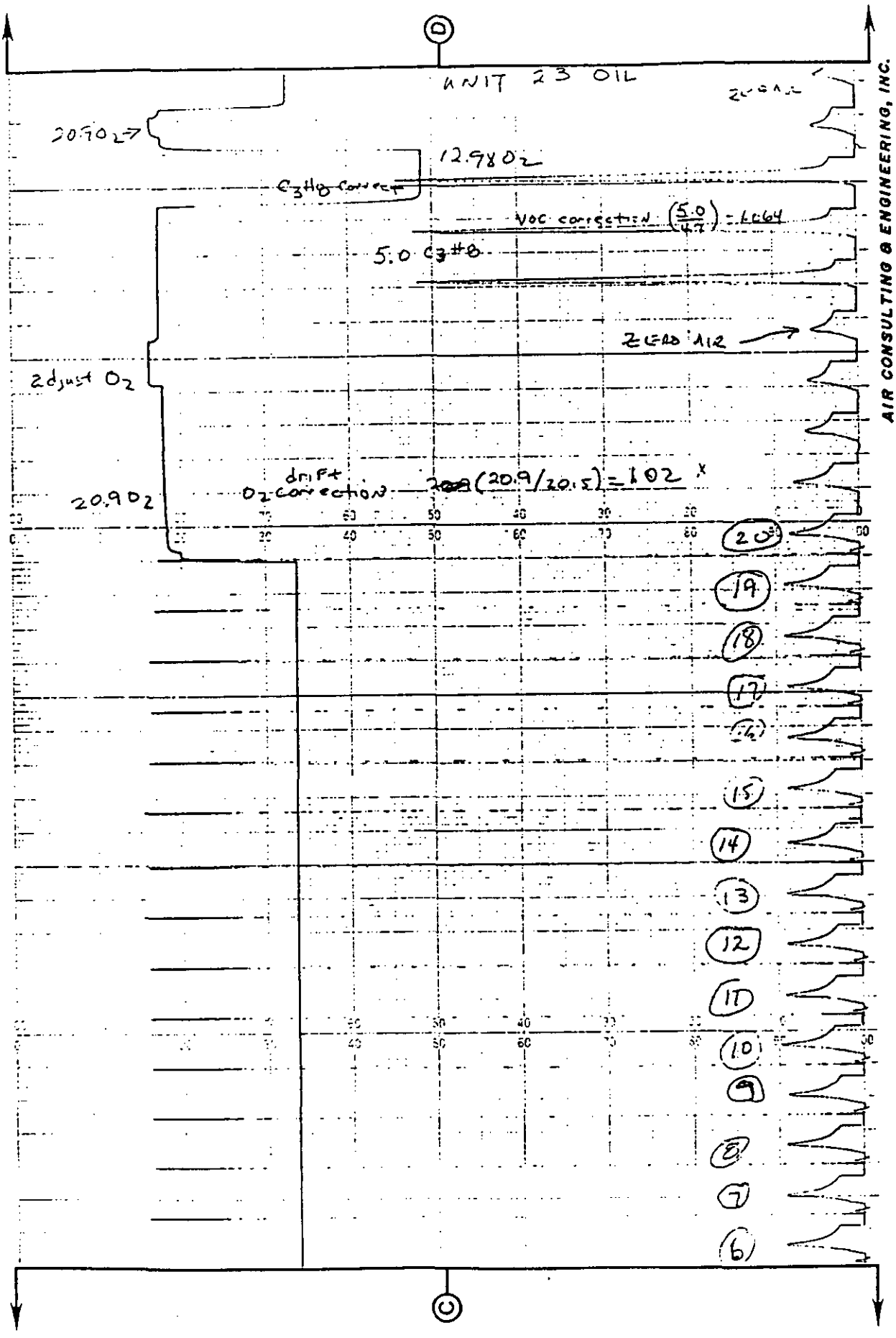
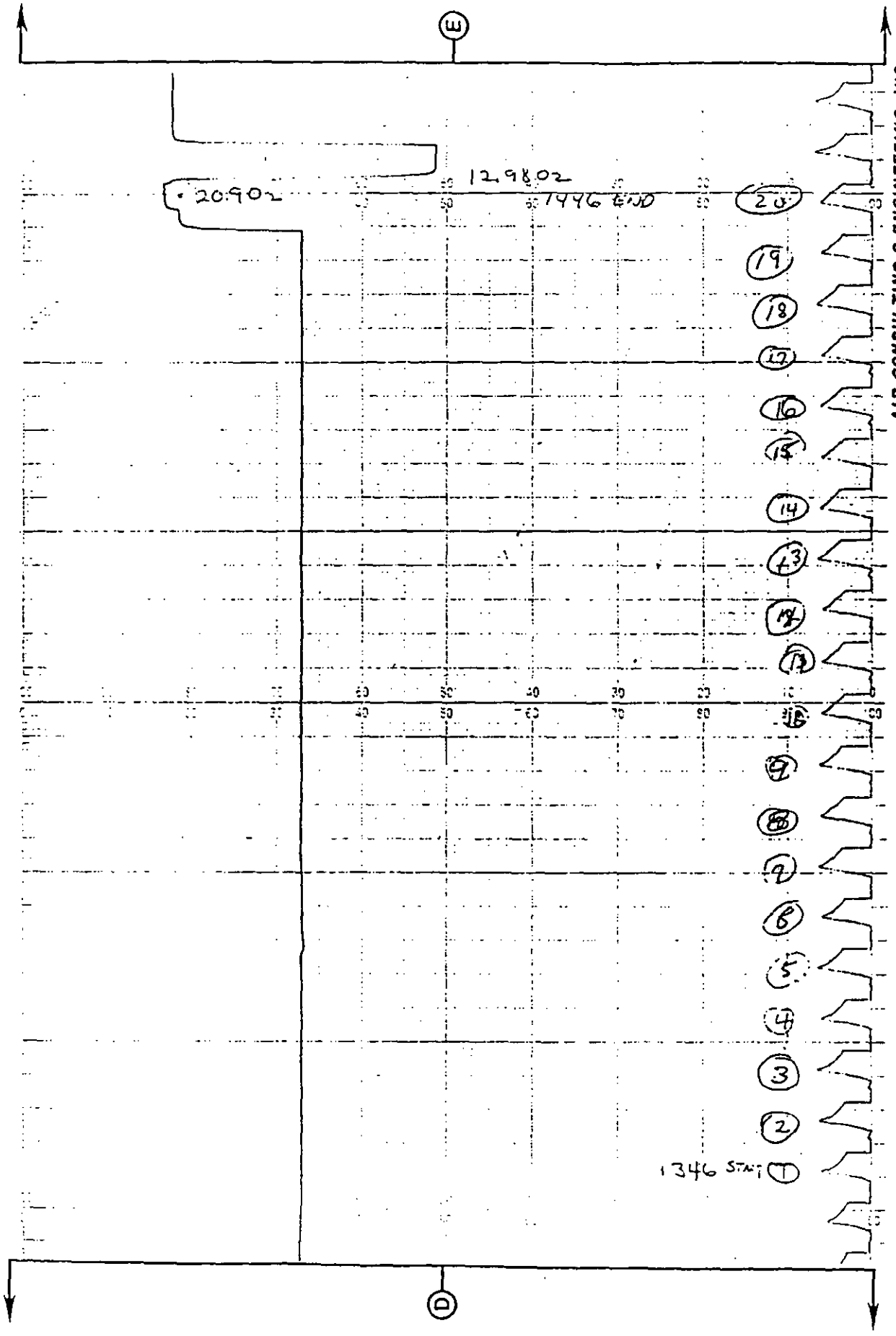
24.5 C2H6 in methane window



AIR CONSULTING & ENGINEERING, INC.



AIR CONSULTING & ENGINEERING, INC.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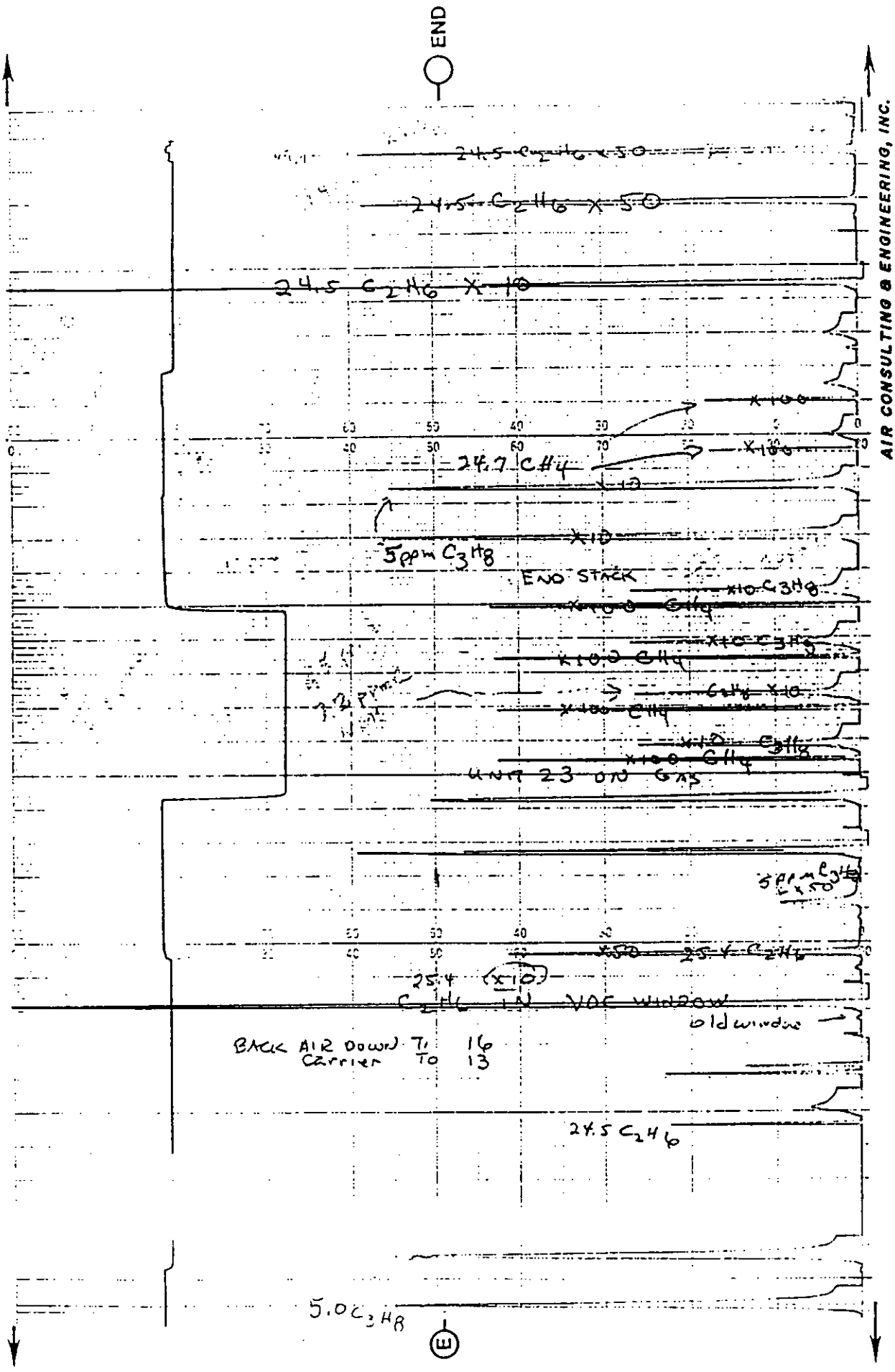
AIR CONSULTING & ENGINEERING, INC.


END
24.5 C2H6 X 50
24.5 C2H6 X 50
24.5 C2H6 X 10
X100
X100
24.7 CH4
X10
5ppm C3H8
END STACK
X10 C3H8
X100 CH4
X10 C3H8
X100 CH4
UNIT 23 DID GAS
5ppm C3H8
X50
25.4 C2H6
25.4 (X10)
C2H6 IN VOC WINDOW
old window
BACK AIR DOWN T/ 16
CARRIER TO 13
24.5 C2H6
5.0 C3H8
E
AIR CONSULTING & ENGINEERING, INC.

ANALYTICAL REPORT – cont'd

AIR CONSULTING
ATTN: STEVE NECK

Date: 3/27/87
Our Project No.: 338458
Your P.O. No.: 87102

Cyl. No. AAL-14506	Analytical Accuracy ±1%
Component	Concentration
PROPANE	4.998 PPM
AIR	BALANCE
NBS TRACEABLE	

Cyl. No.	Analytical Accuracy
Component	Concentration

Cyl. No. AAL-11220L	Analytical Accuracy ±1%
Component	Concentration
PROPANE	3.001 PPM
AIR	BALANCE
NBS TRACEABLE	

Cyl. No.	Analytical Accuracy
Component	Concentration

Cyl. No.	Analytical Accuracy
Component	Concentration

Cyl. No.	Analytical Accuracy
Component	Concentration

Analyst John T. Sanson
JOHN SANSON

Approved By
FRANCIS E. NEVILL

CERTIFIED REFERENCE MATERIALS EPA PROTOCOL GASES
ACUBLEND® CALIBRATION & SPECIALTY GAS MIXTURES PURE GASES
ACCESSORY PRODUCTS CUSTOM ANALYTICAL SERVICES

Scott Specialty Gases

PLUMSTEADVILLE, PA. 18949 PHONE: 215-766-8861 TWX: 510-665-9344

Date Shipped 7/26/88
Our Project No: 4082
Your P.O. No: 88-156
Page 1 of 3

Air Consulting & Engr
Attn Steve Neck
Suite #4
2106E NW 67th Place
Gainsville FL 32606

CERTIFICATE OF ANALYSIS – EPA PROTOCOL GASES*

(Concentrations are in mole % or ppm)

Cylinder Number AAL-17097 Certified Accuracy ± 1 % NBS Traceable Analysis Dates: First 7/22/88 Last NR

CP=2000 psig

COMPONENTS	CERTIFIED CONC	EXPIRATION DATE	ANALYTICAL PRINCIPLE	PRIMARY STANDARD NBS/SRM's	REPLICATE CONCENTRATIONS FIRST	SECOND
Propane	8.30 ppm	1/22/90	F. I. D.	1665/1666	8.301 ppm	-
Air	Balance				8.291 ppm	-
					8.312 ppm	-

Cylinder Number AAL-4045 Certified Accuracy ± 1 % NBS Traceable Analysis Dates: First 7/5/88 Last NR

CP=2000 psig

COMPONENTS	CERTIFIED CONC	EXPIRATION DATE	ANALYTICAL PRINCIPLE	PRIMARY STANDARD NBS/SRM's	REPLICATE CONCENTRATIONS FIRST	SECOND
Propane	29.8 ppm	1/5/90	F. I. D.	1667	29.72 ppm	-
Air	Balance				29.82 ppm	-
					29.85 ppm	-

*We hereby certify the cylinder gas has been analyzed according to EPA Protocol No: 1-Procedure G-1

Analyst Tom Sassaman Approved By Mark S. Sirinides

Tom Sassaman Mark S. Sirinides

The only liability of this Company for gas which fails to comply with this analysis shall be replacement thereof by the Company without extra cost.

FDER AIR PERMITS

RECEIVED
AUG 09 1988
MANAGER
PERMITTING & PROGRAMS

Florida Department of Environmental Regulation

Southeast District • 1900 S. Congress Ave., Suite A • West Palm Beach, Florida 33406 • 407-964-9668

Bob Martinez, Governor Dale Twachtmann, Secretary Dan McDonald, Assistant Secretary Jim Middlebrooks, Assistant Secretary

RECEIVED
AUG 09 1988
ENV. PERMITTING

NOTICE OF PERMIT

Broward County
AP - Florida Power & Light Co. -
Lauderdale Unit 4

Mr. T. R. Fair, Manager
Environmental Permitting & Programs
Florida Power & Light
P. O. Box 14000
Juno Beach, FL 33408

Dear Mr. Fair:

Enclosed is Permit Number AO 06-146594 to operate an air pollution source issued pursuant to Section 403.087, Florida Statutes.

Persons whose substantial interests are affected by this permit have a right, pursuant to Section 120.57, Florida Statutes, to petition for an administrative determination (hearing) on it. The petition must conform to the requirements of Chapters 17-103 and 28-5.201, FAC, and must be filed (received) in the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, FL 32399-2400, within fourteen (14) days of receipt of this notice. Failure to file a petition within the fourteen (14) days constitutes a waiver of any right such person has to an administrative determination (hearing) pursuant to Section 120.57, Florida Statutes. This permit is final and effective on the date filed with the Clerk of the Department unless a petition is filed in accordance with this paragraph or unless a request for extension of time in which to file a petition is filed within the time specified for filing a petition and conforms to Rule 17-103.070, FAC. Upon timely filing of a petition or a request for an extension of time this permit will not be effective until further Order of the Department.

When the Order (Permit) is final, any party to the Order has the right to seek judicial review of the Order pursuant to Section 120.68, Florida Statutes, 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 Office of General Counsel, 2600 Blair Stone Road, Tallahassee, FL 32399-2400; 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 days from the Final Order is filed with the Clerk of the Department.

Executed in West Palm Beach, Florida

STATE OF FLORIDA
DEPARTMENT OF REGULATION

Stephanie S. Brooks

Stephanie S. Brooks
Engineer
Air Permitting
1900 South Congress Ave., Suite A
West Palm Beach, FL 33406
407/964-9668

SB:s/272

Copies furnished to:
Broward County Environmental Quality Control Board

CERTIFICATE OF SERVICE

This is to certify that this NOTICE OF PERMIT and all copies were mailed before the close of business on AUG 0 3 1988 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGEMENT FILED, on this date, pursuant to §120.52(10), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Clerk

AUG 0 3 1988
Date

Florida Department of Environmental Regulation

Southeast District ● 1900 S. Congress Ave., Suite A ● West Palm Beach, Florida 33406 ● 407-964-9668

Bob Martinez, Governor | Dale Twachtmann, Secretary | John Shearer, Assistant Secretary | Scott Benson, Deputy Assistant Secretary

PERMITTEE:
Mr. T. R. Fair, Manager
Environmental Permitting & Programs
Florida Power & Light
P. O. Box 14000
Juno Beach, FL 33408

I.D. NUMBER: 50/BRO/06/0037/01
PERMIT/CERTIFICATION NUMBER: AO 06-146594 *
DATE OF ISSUE: AUG 05 1993
EXPIRATION DATE: May 15, 1993
COUNTY: Broward
LATITUDE/LONGITUDE: 26°04'06"N/80°12'00"W
UTM: Zone 17; 600.0 Km. E; 2883.2 Km. N
PROJECT: Florida Power & Light Co.
Lauderdale Unit 4

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule 17-2, and in conformance with all existing regulations of the Florida Department of Environmental Regulation. 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 Department and made a part hereof and specifically described as follows:

OPERATE: An air pollution source consisting of a 161 MW (gross capacity) steam generating unit (#4) burning a variable combination of natural gas, used oil fuel from FP & L operations, and No. 6 fuel oil with a maximum heat input rate of 1725 million BTU/hr., discharging pollutants through a stack 151 feet above ground level.

IN ACCORDANCE WITH: Application for Renewal of Permit to Operate Air Pollution Sources dated March 10, 1988, and Application to Operate Air Pollution Sources received September 23, 1977 (none are attached).

LOCATED AT: Griffin Road, Dania, Broward County, Florida.

TO SERVE: An electric service utility facility (SIC # 4911)

SUBJECT TO: General Conditions 1-15 and Specific Conditions 1-10.

* This permit is a renewal of AO 06-60682 issued May 26, 1983, and a modification of AO 06-146594 issued May 31, 1988.

PERMITTEE:
Mr. T. R. Fair, Manager
Environmental Permitting & Programs
Florida Power & Light

I.D. NUMBER: 50/BRO/06/0037/01
PERMIT/CERTIFICATION NUMBER: AO 06-146594 *
DATE OF ISSUE: [illegible]
EXPIRATION DATE: May 15, 1993

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations. This permit does not constitute a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit, and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

   a. Having access to and copying any records that must be kept under the conditions of the permit;

   b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and

   c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

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

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in the permit, the permittee shall immediately notify and provide the Department with the following information:

   a. a description of and cause of noncompliance; and

   b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

PERMITTEE:
Mr. T. R. Fair, Manager
Environmental Permitting & Programs
Florida Power & Light

I.D. NUMBER: 50/BRO/06/0037/01
PERMIT/CERTIFICATION NUMBER: AO 06-146594 *
DATE OF ISSUE: AUG
EXPIRATION DATE: May 15, 1993

GENERAL CONDITIONS:

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

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

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any noncompliance of the permitted activity until the transfer is approved by the Department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

( ) Determination of Best Available Control Technology (BACT)
( ) Determination of Prevention of Significant Deterioration (PSD)
( ) Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)
( ) Compliance with New Source Performance Standards

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the Department, during the course of any unresolved enforcement action.

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be submitted or corrected promptly.

PERMITTEE:
Mr. T. R. Fair, Manager
Environmental Permitting & Programs
Florida Power & Light

I.D. NUMBER: 50/BRO/06/0037/01
PERMIT/CERTIFICATION NUMBER: AO 06-146594 *
DATE OF ISSUE: AUG 05 1988
EXPIRATION DATE: May 15, 1993

SPECIFIC CONDITIONS:

1. Compliance testing shall be conducted for the sources covered by this permit once each federal fiscal year in accordance with the methods specified below.

2. Emission limiting standards are as follows:

In accordance with Florida Administrative Code Rules 17-2.600(5)(b) and 17-2.250(3):

- SO_2 emissions shall not exceed 1.1 pounds per million BTU heat input.

- For steady state operations
  Visible emissions shall not exceed 20% opacity.
  Particulate emissions shall not exceed 0.1 pounds per million BTU heat input.

- For soot blowing and load changes

  Visible emissions shall not exceed 60% opacity during the 3 hour period of excess emissions allowed for soot blowing and load changes.

  Particulate emissions shall not exceed an average of 0.3 pounds per million BTU heat input during the three hour period of excess emissions allowed for soot blowing and load changes.

3. The compliance test report shall include results of tests by the following method:

Source/Emission Point	Pollutant	Test Method
Unit No. 4	Particulate (Steady State & Soot Blowing)	EPA Method 17 * or EPA Method 5
	Visible Emissions (Steady State & Soot Blowing)	DER Method 9
	SO_2	**

* EPA Method 17 may be used only if the stack temperature is less than 375°F.

** Stack testing for SO_2 is required if the equivalent sulfur content of the fuel exceeds 2.5% . Sulfur content shall be verified by submittal of monthly fuel analyses reports on a quarterly basis.

4. Emissions compliance testing should be conducted with the source firing No. 6 fuel oil and/or natural gas and operating within ten percent (10%) of its rated capacity; provided, however, that such testing may be conducted with the source operating at less than ninety percent (90%) of its rated capacity, in which case the source may subsequently be operated at any capacity up to one hundred ten percent (110%) of the average load at which compliance was demonstrated, and at higher capacities for up to fifteen days for purposes of additional compliance testing. A particulate test to show compliance must be conducted within sixty (60) days of the monthly fuel analysis if the equivalent sulfur content of the fuel burned (fuel oil and/or natural gas)is increased by 0.5 percentage points or more from that used during the previous test.

5. The Department shall be notified of expected test dates at least fifteen (15) days prior to compliance testing.

6. On or before March 1 of each calendar year, a completed DER Form 17-1.202(6), Annual Operations Report Form for Air Emissions Sources shall be submitted to the Department.

7. Copies of all reports, tests, notifications or other submittals required by this permit shall be submitted to both the Department of Environmental Regulation, Southeast District Office and Broward County Environmental Quality Control Board.

PERMITTEE:
Mr. T. R. Fair, Manager
Environmental Permitting & Programs
Florida Power & Light

I.D. NUMBER: 50/BRO/06/0037/01
PERMIT/CERTIFICATION NUMBER: AO 06-146594 *
DATE OF ISSUE: AUG 05 1988
EXPIRATION DATE: May 15, 1993

SPECIFIC CONDITIONS CONT.:

spec cond added per FT 7/15/88 NO CEM

8. In addition to the requirements of General Condition 8 of this permit, a written quarterly report shall be submitted to the Department of all opacity exceedances of emission limitations specified in Florida Administrative Code Rules 17-2.250(1) through (4) and 17-2.600(5)(b)1. The report shall state the cause, period of noncompliance, and steps taken for corrective action and/or prevention of recurrence. If the opacity level cannot be determined due to an opacity monitor malfunction or for any other reason, the report shall state the cause, duration and action taken - all recorded data shall be maintained on file by Florida Power & Light for no less than two years and made available to the Department upon request.

9. All present and future variance orders or rule changes which are applicable to this source take precedence over any affected condition of this permit.

10. Burning of used oil meeting EPA specifications (40 CFR S266.40) and generated from FPL operations shall be permitted under the following conditions:

(a) Each Batch of used oil to be burned shall be sampled and analyzed for: Arsenic, Chromium, Cadmium, total Halogens, and Lead using EPA/DER or ASTM approved methods. Split samples of the used oil shall be retained for three (3) months after analysis for further testing if necessary.

(b) Results of used oil sampling and analysis performed pursuant to Specific Condition 10(a) shall be retained by permittee for at least three (3) years and made available for inspection by DER upon request.

(c) An estimate of the total quantity of used oil burned during the applicable calender year shall be included in the Annual Operations Report (AOR) for Air Emissions Sources. The permittee will submit with the AOR a summary of the range of values for each constituent analyzed pursuant to Specific Condition 10(a).

Issued this 5th day of August, 1988

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

Donald B. White, P.E.
for J. Scott Benyon
District Manager

DER Form 17-1.201(5)
Effective November 30, 1982

P. O. BOX 14000, JUNO BEACH, FL 33408-0420

FPL

June 27, 1988

Ms. Stephanie Brooks
State of Florida
Department of Environmental Regulation
Southeast District
1900 South Congress Avenue, Suite A
West Palm Beach, Florida 33406

RE: **Lauderdale Plant, Unit No. 5**
DER Air Operating Permit No. AO-06-143213
Specific Condition No. 4 - Emissions Compliance Testing

Dear Ms. Brooks:

As we discussed by phone on Friday, May 27, 1988 and today, this letter is written in confirmation of the Department's agreement to allow emissions compliance testing of the above-captioned unit while firing a combination of fuel oil and natural gas with an equivalent sulfur content of one percent. All other testing conditions remain as written.

I am attaching a copy of this letter to our copy of the permit in question and hereby request that you attach this letter to your file copy so we have consistent records. This will prevent potential confusion.

If you have any questions, please call me at (407) 694-3648.

Sincerely,

FOR Elsa A. Bishop
Environmental Coordinator

EAB:jm

Enclosure

cc: Broward County Environmental Quality Control Board

bcc: R. A. Acosta - PPE
R. N. Allen - JEN
P. C. Cunningham - HBG&S
M. J. Martin - JEN
R. F. Messer - PRS/GO
W. M. Reichel - PRS/GO
H. M. Rosen - JEN
H. E. Sanders - PFL

P. O. BOX 14000, JUNO BEACH, FL 33408-0420

FPL

August 15, 1988

Ms. Stephanie Brooks
State of Florida
Department of Environmental Regulation
Southeast District
1900 South Congress Avenue, Suite A
West Palm Beach, Florida 33406

RE: **Lauderdale Plant, Unit No. 4**
DER Air Operating Permit No. AO-06-146594

Dear Ms. Brooks:

As we discussed by phone, this is confirmation that we will accept the above captioned permit. As we also discussed, this also clarifies that this unit is not equipped with a transmissometer. Thus, the reference to such in Specific Condition 8 of the permit does not apply to this unit.

I am attaching a copy of this letter to our copy of the permit in question and hereby request that you attach this letter to your file copy so we have consistent records. This will prevent potential confusion.

If you have any questions, please call me at 694-3648.

Sincerely,

Elsa A. Bishop
Environmental Coordinator

EAB:jm

cc: Broward County Environmental Quality Control Board

bcc: R. A. Acosta - PPE
R. N. Allen - JEN
P. C. Cunningham - HBG&S
M. J. Martin - JEN
R. F. Messer - PRS/GO
W. M. Reichel - PRS/GO
H. E. Sanders - PFL
Control Document

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHEAST FLORIDA DISTRICT
1900 SOUTH CONGRESS AVENUE, SUITE A
WEST PALM BEACH, FLORIDA 33406
(305) 964-9668

RECEIVED
MAY 13 1988
ENV. PERMITTING

NOTICE OF PERMIT

Broward County
AP - Florida Power & Light -
Lauderdale Unit 5

Mr. T. R. Fair, Manager
Environmental Permitting & Programs
Florida Power & Light
P. O. Box 14000
Juno Beach, FL 33408

Dear Mr. Fair:

Enclosed is Permit Number AO 06-143213 to operate an air pollution source issued pursuant to Section 403.087, Florida Statutes.

When the Order (Permit) is final, any party to the Order has the right to seek judicial review of the Order pursuant to Section 120.68, Florida Statutes, 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 Office of General Counsel, 2600 Blair Stone Road, Tallahassee, FL 32399-2400; 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 days from the Final Order is filed with the Clerk of the Department.

Executed in West Palm Beach, Florida

STATE OF FLORIDA
DEPARTMENT OF REGULATION

Stephanie S. Brooks

Stephanie S. Brooks
Engineer
Air Permitting
1900 South Congress Ave., Suite A
West Palm Beach, FL 33406
305/964-9668

SB:s/262

Copies furnished to:

Broward County Environmental Quality Control Board

CERTIFICATE OF SERVICE

This is to certify that this NOTICE OF PERMIT and all copies were mailed before the close of business on MAY 1 1989 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGEMENT FILED, on this date, pursuant to §120.52(10), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Mary A. Smith MAY - 1 1989
Clerk Date

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHEAST FLORIDA DISTRICT
900 SOUTH CONGRESS AVENUE, SUITE A
WEST PALM BEACH, FLORIDA 33406
(305) 964-9668

PERMITTEE:
Mr. T. R. Fair, Manager
Environmental Permitting & Programs
Florida Power & Light
P. O. Box 14000
Juno Beach, FL 33408

I.D. NUMBER: 50/BRO/06/0037/02
PERMIT/CERTIFICATION NUMBER: AO 06-143213 *
DATE OF ISSUE: MAY [illegible] 1993
EXPIRATION DATE: February 15, 1993
COUNTY: Broward
LATITUDE/LONGITUDE: 26°04'06"N/80°12'00"W
UTM: Zone 17; 600.0 Km. E; 2883.2 Km. N
PROJECT: Florida Power & Light
Lauderdale Unit 5

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule 17-2, and in conformance with all existing regulations of the Florida Department of Environmental Regulation. 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 Department and made a part hereof and specifically described as follows:

OPERATE: An air pollution source consisting of a 161 Megawatt (gross capacity) steam generating unit (#5) burning a variable combination of natural gas, used oil fuel from FP & L operations, and No. 6 fuel oil with a maximum heat input rate of 1725 million BTU/hr , discharging pollutants through a stack 151 feet above ground level.

IN ACCORDANCE WITH: Application for Renewal dated December 14, 1987, and Application to Operate Air Pollution Source dated October 7, 1977, (none are attached).

LOCATED AT: Griffin Road, Dania, Broward County, Florida.

TO SERVE: An electric service utility facility. (SIC # 4911)

SUBJECT TO: General Conditions 1-15 and Specific Conditions 1-10.

* This permit is a renewal of AO 06-60860 issued February 24, 1983, and a modification of AO 06-143213 issued March 9, 1988.

DER Form 17-1.201(5)
Effective November 30, 1982

PERMITTEE:
Mr. T. R. Fair, Manager
Environmental Permitting & Programs
Florida Power & Light

I.D. NUMBER: 50/BRO/06/0037/02
PERMIT/CERTIFICATION NUMBER: AO 06-143213
DATE OF ISSUE:
EXPIRATION DATE: February 15, 1993

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations. This permit does not constitute a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit, and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

   a. Having access to and copying any records that must be kept under the conditions of the permit;

   b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and

   c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

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

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in the permit, the permittee shall immediately notify and provide the Department with the following information:

   a. a description of and cause of noncompliance; and

   b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

PERMITTEE:
Mr. T. R. Fair, Manager
Environmental Permitting & Programs
Florida Power & Light

I.D. NUMBER: 50/BRO/06/0037/02
PERMIT/CERTIFICATION NUMBER: AO 06-143213
DATE OF ISSUE:
EXPIRATION DATE: February 15, 1993

GENERAL CONDITIONS:

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

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

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any noncompliance of the permitted activity until the transfer is approved by the Department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

( ) Determination of Best Available Control Technology (BACT)
( ) Determination of Prevention of Significant Deterioration (PSD)
( ) Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)
( ) Compliance with New Source Performance Standards

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the Department, during the course of any unresolved enforcement action.

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be submitted or corrected promptly.

PERMITTEE:
Mr. T. R. Fair, Manager
Environmental Permitting & Programs
Florida Power & Light

I.D. NUMBER: 50/BRO/06/0037/02
PERMIT/CERTIFICATION NUMBER: AO 06-143213
DATE OF ISSUE:
EXPIRATION DATE: February 15, 1993

SPECIFIC CONDITIONS:

1. Compliance testing shall be conducted for the sources covered by this permit once each federal fiscal year in accordance with the methods specified below.

2. Emission limiting standards are as follows:

In accordance with Florida Administrative Code Rule 17-2.250(3) and 17-2.600(5)(b):

- SO_2 emissions shall not exceed 1.1 pounds per million BTU heat input.

- For steady state operations
  Visible emissions shall not exceed 20% opacity.
  Particulate emissions shall not exceed 0.1 pounds per million BTU heat input.

- For soot blowing and load changes

  Visible emissions shall not exceed 60% opacity during the 3 hour period of excess emissions allowed for soot blowing and load changes.

  Particulate emissions shall not exceed an average of 0.3 pounds per million BTU heat input during the three hour period of excess emissions allowed for soot blowing and load changes.

3. The compliance test report shall include results of tests by the following method:

Source/Emission Point	Pollutant	Test Method
Unit No. 5	Particulate (Steady State & Soot Blowing)	EPA Method 17 * or EPA Method 5
	Visible Emissions (Steady State & Soot Blowing)	DER Method 9
	SO_2	**

* EPA Method 17 may be used only if the stack temperature is less than 375°F.

** Stack testing for SO_2 is required if the equivalent sulfur content of the fuel exceeds 2.5% . Sulfur content shall be verified by submittal of monthly fuel analyses reports on a quarterly basis. The compliance test report shall be submitted to the Department in accordance with FAC Rule 17-2.700(7).

4. Emissions compliance testing should be conducted with the source firing No. 6 fuel oil and operating within ten percent (10%) of its rated capacity; provided, however, that such testing may be conducted with the source operating at less than ninety percent (90%) of its rated capacity, in which case the source may subsequently be operated at any capacity up to one hundred ten percent (110%) of the average load at which compliance was demonstrated, and at higher capacities for up to fifteen days for purposes of additional compliance testing. A particulate test to show compliance must be conducted within sixty (60) days of the monthly fuel analysis if the equivalent sulfur content of the fuel burned (fuel oil and / or natural gas) is increased by 0.5 percentage points or more from that used during the previous test.

5. The Department shall be notified of expected test dates at least fifteen (15) days prior to compliance testing.

6. On or before March 1 of each calendar year, a completed DER Form 17-1.202(6), Annual Operations Report Form for Air Emissions Sources shall be submitted to the Department. Show formulas with input and output data.

PERMITTEE:
Mr. T. R. Fair, Manager
Environmental Permitting & Programs
Florida Power & Light

I.D. NUMBER: 50/BRO/06/0037/02
PERMIT/CERTIFICATION NUMBER: AO 06-143213
DATE OF ISSUE: [illegible]88
EXPIRATION DATE: February 15, 1993

SPECIFIC CONDITIONS:

7. Copies of all reports, tests, notifications or other submittals required by this permit shall be submitted to both the Department of Environmental Regulation, Southeast District Office and Broward County Environmental Quality Control Board.

8. In addition to the requirements of General Condition 8 of this permit, a written quarterly report shall be submitted to the Department of all opacity exceedances of emission limitations specified in Florida Administrative Code Rules 17-2.250(1) through (4) and 17-2.600(5)(b)1. The report shall state the cause, period of noncompliance, and steps taken for corrective action and/or prevention of recurrence. If the opacity level cannot be determined due to an opacity monitor malfunction or for any other reason, the report shall state the cause, duration and action taken - all recorded data shall be maintained on file by Florida Power & Light for no less than two years and made available to the Department upon request.

9. All present and future variance orders or rule changes which are applicable to this source take precedence over any affected condition of this permit.

10. Burning of used oil meeting EPA specifications (40 CFR S266.40) and generated from FPL operations shall be permitted under the following conditions:

(a) Each batch of used oil to be burned shall be sampled and analyzed for: Arsenic, Chromium, Cadmium, total Halogens, and Lead using EPA/DER or ASTM approved methods. Split samples of the used oil shall be retained for three (3) months after analysis for further testing if necessary.

(b) Results of used oil sampling and analysis performed pursuant to Specific Condition 10 (a) shall be retained by permittee for at least three (3) years and made available for inspection by DER upon request.

(c) An estimate of the total quantity of used oil burned during the applicable calender year shall be included in the Annual Operation Report (AOR) for Air Emissions Sources. The permittee will submit with the AOR a summary of the range of values for each constituent analyzed pursuant to Specific Condition 10(a).

Issued this 9th day of May, 1988

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

J. Scott Benyon
District Manager

R Form 17-1.201(5)
Effective November 30, 1982

P. O. BOX 14000, JUNO BEACH, FL 33408-0420

FPL

May 16, 1988

Ms. Stephanie Brooks
State of Florida
Department of Environmental Regulation
Southeast District
1900 South Congress Avenue, Suite A
West Palm Beach, Florida 33406

RE: Lauderdale Plant, Unit No. 5
DER Air Operating Permit No. AO-06-143213

Dear Ms. Brooks:

As we discussed by phone, this is confirmation that we will accept the above captioned permit. As we also discussed, this also clarifies that this unit is not equipped with a transmissometer. Thus, the reference to such in Specific Condition 8 of the permit does not apply to this unit.

I am attaching a copy of this letter to our copy of the permit in question and hereby request that you attach this letter to your file copy so we have consistent records. This will prevent potential confusion.

If you have any questions, please call me at 694-3648.

Sincerely,

Elsa A. Bishop

Elsa A. Bishop
Environmental Coordinator

EAB:jm

cc: Broward County Environmental Quality Control Board

bcc: R. A. Acosta - PPE
R. N. Allen - JEN
P. C. Cunningham - HBG&S
M. J. Martin - JEN
R. F. Messer - PRS/GO
W. M. Reichel - PRS/GO
H. E. Sanders - PPL
Control Document

P. O. BOX 14000, JUNO BEACH, FL 33408-0420

FPL

June 27, 1988

Ms. Stephanie Brooks
State of Florida
Department of Environmental Regulation
Southeast District
1900 South Congress Avenue, Suite A
West Palm Beach, Florida 33406

RE: **Lauderdale Plant, Unit No. 5**
DER Air Operating Permit No. AO-06-143213
Specific Condition No. 4 - Emissions Compliance Testing

Dear Ms. Brooks:

As we discussed by phone on Friday, May 27, 1988 and today, this letter is written in confirmation of the Department's agreement to allow emissions compliance testing of the above-captioned unit while firing a combination of fuel oil and natural gas with an equivalent sulfur content of one percent. All other testing conditions remain as written.

I am attaching a copy of this letter to our copy of the permit in question and hereby request that you attach this letter to your file copy so we have consistent records. This will prevent potential confusion.

If you have any questions, please call me at (407) 694-3648.

Sincerely,

FOR Elsa A. Bishop
Environmental Coordinator

EAB:jm

Enclosure

cc: Broward County Environmental Quality Control Board

bcc: R. A. Acosta - PPE
R. N. Allen - JEN
P. C. Cunningham - HBG&S
M. J. Martin - JEN
R. F. Messer - PRS/GO
W. M. Reichel - PRS/GO
H. M. Rosen - JEN
H. E. Sanders - PFL

Florida Department of Environmental Regulation

Southeast District • [illegible] • West Palm Beach, Florida 33406 • 407-964-9668

Bob Martinez, Governor [illegible], Secretary [illegible], Assistant Secretary [illegible], Assistant Secretary

RECEIVED
AUG 09 1988
MANAGER
PERMITTING & PROGRAMS

RECEIVED
AUG 09 1988
ENV. PERMITTING

NOTICE OF PERMIT

Broward County
AP - Florida Power & Light Co. -
Lauderdale Gas Turbines Nos. 1-12

Mr. T. R. Fair, Manager
Environmental Permitting & Programs
Florida Power & Light
P. O. Box 14000
Juno Beach, FL 33408

Dear Mr. Fair:

Enclosed is Permit Number AO 06-148760 to operate an air pollution source issued pursuant to Section 403.087, Florida Statutes.

Persons whose substantial interests are affected by this permit have a right, pursuant to Section 120.57, Florida Statutes, to petition for an administrative determination (hearing) on it. The petition must conform to the requirements of Chapters 17-103 and 28-5.201, FAC, and must be filed (received) in the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, FL 32399-2400, within fourteen (14) days of receipt of this notice. Failure to file a petition within the fourteen (14) days constitutes a waiver of any right such person has to an administrative determination (hearing) pursuant to Section 120.57, Florida Statutes. This permit is final and effective on the date filed with the Clerk of the Department unless a petition is filed in accordance with this paragraph or unless a request for extension of time in which to file a petition is filed within the time specified for filing a petition and conforms to Rule 17-103.070, FAC. Upon timely filing of a petition or a request for an extension of time this permit will not be effective until further Order of the Department.

When the Order (Permit) is final, any party to the Order has the right to seek judicial review of the Order pursuant to Section 120.68, Florida Statutes, 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 Office of General Counsel, 2600 Blair Stone Road, Tallahassee, FL 32399-2400; 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 days from the Final Order is filed with the Clerk of the Department.

Executed in West Palm Beach, Florida

STATE OF FLORIDA
DEPARTMENT OF REGULATION

Stephanie S. Brooks
Engineer
Air Permitting
1900 South Congress Ave., Suite A
West Palm Beach, FL 33406
407/964-9668

SB:s/184

Copies furnished to:
Broward County Environmental Quality Control Board

CERTIFICATE OF SERVICE

This is to certify that this NOTICE OF PERMIT and all copies were mailed before the close of business on AUG [illegible] to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGEMENT FILED, on this date, pursuant to §120.52(10), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Clerk

AUG 0 8 1983
Date

Florida Department of Environmental Regulation

Southeast District ● 1900 S. Congress Ave., Suite A ● West Palm Beach, Florida 33406 ● 407-964-9668

Bob Martinez, Governor Dale Twachtmann, Secretary Jon Shearer, Assistant Secretary
Ed Benton, Deputy Assistant Secretary

PERMITTEE:
Mr. T. R. Fair, Manager
Environmental Permitting & Programs
Florida Power & Light
P. O. Box 14000
Juno Beach, FL 33408

I.D. NUMBER: 50/BRO/06/0037/03
PERMIT/CERTIFICATION NUMBER: AO 06-148760 *
DATE OF ISSUE: AUG 0 [illegible] 1988
EXPIRATION DATE: June 30, 1993
COUNTY: Broward
LATITUDE/LONGITUDE: 26°04'16"N/80°11'56"W
UTM: Zone 17; 580.4 Km. E; 2883.5 Km. N
PROJECT: Florida Power & Light Co.
Lauderdale Gas Turbines Nos. 1-12

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule 17-2, and in conformance with all existing regulations of the Florida Department of Environmental Regulation. 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 Department and made a part hereof and specifically described as follows:

OPERATE: An air pollution source consisting of gas turbine Units 1 through 12 with a 486 MW gross capacity burning natural gas and/or No. 2 distillate oil, exhausting through seperate stacks 45 feet above ground level. The heat input rate per unit is 7020 mm BTU/hr.

IN ACCORDANCE WITH: Application for Renewal of Permit to Operate Air Pollution Sources received April 26, 1988 as modified by letter May 9, 1988, Application to Operate Air Pollution Sources dated October 7, 1977 and letter dated June 13, 1983 (none are attached).

LOCATED AT: Griffin Road, Dania, Broward County, Florida.

TO SERVE: An electric service utility facility (SIC # 4911)

SUBJECT TO: General Conditions 1-15 and Specific Conditions 1-5.

* This permit is a renewal of AO 06-62932 issued June 27, 1983.

PERMITTEE:
Mr. T. R. Fair, Manager
Environmental Permitting & Programs
Florida Power & Light

I.D. NUMBER: [illegible]/BRO/06/0037/03
PERMIT/CERTIFICATION NUMBER: [illegible] 06-148760 *
DATE OF ISSUE: [illegible]
EXPIRATION DATE: June 30, 1993

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations. This permit does not constitute a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit, and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

   a. Having access to and copying any records that must be kept under the conditions of the permit;

   b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and

   c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

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

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in the permit, the permittee shall immediately notify and provide the Department with the following information:

   a. a description of and cause of noncompliance; and

   b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

PERMITTEE:
[illegible] Manager
Environmental Permitting & Programs
Florida Power & Light

I.D. NUMBER: [illegible]/BRO/06/0037/03
PERMIT/CERTIFICATION NUMBER: [illegible] 06-148760 *
DATE OF ISSUE: [illegible]
EXPIRATION DATE: June 30, 1993

GENERAL CONDITIONS:

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

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

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any noncompliance of the permitted activity until the transfer is approved by the Department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

( ) Determination of Best Available Control Technology (BACT)
( ) Determination of Prevention of Significant Deterioration (PSD)
( ) Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)
( ) Compliance with New Source Performance Standards

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the Department, during the course of any unresolved enforcement action.

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be submitted or corrected promptly.

PERMITTEE:
[illegible] Fair, Manager
Environmental Permitting & Programs
Florida Power & Light

I.D. NUMBER: [illegible]
PERMIT/CERTIFICATION NUMBER: [illegible] *
DATE OF ISSUE: [illegible]
EXPIRATION DATE: June 30, [illegible]

SPECIFIC CONDITIONS:

(1) Permitted Fuels:

These sources shall be fired with No. 2 Distillate fuel oil and/or natural gas.

(2) Source Emission Limiting Standards and Compliance Testing Requirements:

POLLUTANT	EMISSION [1] LIMITING STDS.	TESTING FREQUENCY ANNUAL	QUARTERLY	OTHER	TEST [2] METHOD
Visible Emissions	20% Opacity	------	-------	✓ If fuel oil consumption in any unit reaches 23,810 bbls (1,000,000 gal.) in a fiscal year, within that fiscal year*	EPA Method 9

1. - FAC 17-2.610(2)
2. - FAC 17-2.700(1)(d), Table 700-1

* NOTE: Usage may be determined on the basis of proportionate time of operation versus total fuel consumption for the block of 12 units. If fuel consumption testing threshold is achieved in September, then visible emissions testing may be conducted prior to October 31 of the same calendar year.

(3) Compliance Testing Related Requirements:

(a) Notification - FAC 17-2.700(2)(a)5

Notification of scheduled test dates shall be given to the Department Southeast District Office and the Broward County Environmental Quality Control Board at least 15 days prior to testing unless otherwise agreed to by the Department.

(b) Conditions

Testing of emissions should be conducted with the source operating within 10% of its rated capacity. Testing may be conducted at less than 90% of rated capacity; however, if so, subsequent source operation is limited to up to 110% of the test load. Once the unit is so limited, then operation at higher capacities is allowed for purposes of additional compliance testing to regain rated capacity in permit, with prior notification to the Department.

PERMITTEE:
Mr. T. R. Fair, Manager
Environmental Permitting & Programs
Florida Power & Light

I.D. NUMBER: 50/BRO/06/0037/03
PERMIT/CERTIFICATION NUMBER: [illegible]0 06-148760 *
DATE OF ISSUE: [illegible]
EXPIRATION DATE: June 30, 1993

SPECIFIC CONDITIONS:

(c) Report Submittal - FAC 17-2.700(7)

A copy of the test results shall be submitted to the Department Southeast District Office and the Broward County Environmental Quality Control Board, including formulas with input and output data.

(4) Annual Operations Report - FAC 17-4.14:

On or before March 1 of each calendar year, a completed DER Form 17-1.202(6), Annual Operations Report Form for Air Emissions Sources shall be submitted to the Department Southeast District Office and the Broward County Environmental Quality Control Board, including formulas with input and output data.

(5) Excess Emissions - FAC 17-2.250(1):

Excess emissions resulting from start-up, shut-down or malfunction shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24-hour period unless specifically authorized by the Department for longer duration.

Issued this 5th day of August, 1988

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

Donald B. White, P.E.
for J. Scott Benyon
Deputy Assistant Secretary

DER Form 17-1.201(5)
Effective November 30, 1982

Florida Department of Environmental Regulation
Southeast District • 1900 S. Congress Ave., Suite A • West Palm Beach, Florida 33406 • 407-964-9668
Bob Martinez, Governor Dale Twachtmann, Secretary [illegible] Assistant Secretary [illegible] Assistant Secretary

RECEIVED
AUG 03 1988
MANAGER
PERMITTING & PROGRAMS

RECEIVED
AUG 09 1988
ENV. PERMITTING

NOTICE OF PERMIT

Broward County
AP - Florida Power & Light Co. -
Lauderdale Gas Turbines Nos. 13-24

Mr. T. R. Fair, Manager
Environmental Permitting & Programs
Florida Power & Light
P. O. Box 14000
Juno Beach, FL 33408

Dear Mr. Fair:

Enclosed is Permit Number AO 06-148761 to operate an air pollution source issued pursuant to Section 403.087, Florida Statutes.

Persons whose substantial interests are affected by this permit have a right, pursuant to Section 120.57, Florida Statutes, to petition for an administrative determination (hearing) on it. The petition must conform to the requirements of Chapters 17-103 and 28-5.201, FAC, and must be filed (received) in the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, FL 32399-2400, within fourteen (14) days of receipt of this notice. Failure to file a petition within the fourteen (14) days constitutes a waiver of any right such person has to an administrative determination (hearing) pursuant to Section 120.57, Florida Statutes. This permit is final and effective on the date filed with the Clerk of the Department unless a petition is filed in accordance with this paragraph or unless a request for extension of time in which to file a petition is filed within the time specified for filing a petition and conforms to Rule 17-103.070, FAC. Upon timely filing of a petition or a request for an extension of time this permit will not be effective until further Order of the Department.

When the Order (Permit) is final, any party to the Order has the right to seek judicial review of the Order pursuant to Section 120.68, Florida Statutes, 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 Office of General Counsel, 2600 Blair Stone Road, Tallahassee, FL 32399-2400; 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 days from the Final Order is filed with the Clerk of the Department.

Executed in West Palm Beach, Florida

STATE OF FLORIDA
DEPARTMENT OF REGULATION

Stephanie S. Brooks
Engineer
Air Permitting
1900 South Congress Ave., Suite A
West Palm Beach, FL 33406
407/964-9668

SB:s/184

Copies furnished to:
Broward County Environmental Quality Control Board

CERTIFICATE OF SERVICE

This is to certify that this NOTICE OF PERMIT and all copies were mailed before the close of business on AUG [illegible] to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGEMENT FILED, on this date, pursuant to §120.52(10), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

[illegible] AUG 08 1989

Clerk Date

Florida Department of Environmental Regulation

Southeast District • 1900 S. Congress Ave., Suite A • West Palm Beach, Florida 33406 • 407-964-9668

Bob Martinez, Governor | Dale Twachtmann, Secretary | John Shearer, Assistant Secretary | Scott Benson, Deputy Assistant Secretary

PERMITTEE:
Mr. T. R. Fair, Manager
Environmental Permitting & Programs
Florida Power & Light
P. O. Box 14000
Juno Beach, FL 33408

I.D. NUMBER: 50/BRO/06/0037/04
PERMIT/CERTIFICATION NUMBER: AO 06-148761 *
DATE OF ISSUE: AUG 02 1993
EXPIRATION DATE: June 30, 1993
COUNTY: Broward
LATITUDE/LONGITUDE: 26°04'16"N/80°11'56"W
UTM: Zone 17; 580.4 Km. E; 2884.1 Km. N
PROJECT: Florida Power & Light Co.
Lauderdale Gas Turbines Nos. 13-24

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule 17-2, and in conformance with all existing regulations of the Florida Department of Environmental Regulation. 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 Department and made a part hereof and specifically described as follows:

OPERATE: An air pollution source consisting of gas turbine Units 13 through 24 with a 486 MW gross capacity burning natural gas and/or No. 2 distillate oil, exhausting through seperate stacks 45 feet above ground level. The heat input rate per unit is 702 mm BTU/hr.

IN ACCORDANCE WITH: Application for Renewal of Permit to Operate Air Pollution Sources received April 28, 1988 as modified by letter May 9, 1988, Application to Operate Air Pollution Sources dated March 1, 1978 and letter dated June 13, 1983 (none are attached).

LOCATED AT: Griffin Road, Dania, Broward County, Florida.

TO SERVE: An electric service utility facility (SIC # 4911)

SUBJECT TO: General Conditions 1-15 and Specific Conditions 1-5.

* This permit is a renewal of AO 06-62939 issued June 27, 1983.

DER Form 17-1.201(5)
Effective November 30, 1982

PERMITTEE:
Mr. T. R. Fair, Manager
Environmental Permitting & Programs
Florida Power & Light

I.D. NUMBER: 50/BRO/06/0037/04
PERMIT/CERTIFICATION NUMBER: AO 06-148761 *
DATE OF ISSUE: [illegible]
EXPIRATION DATE: June 30, 1993

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations. This permit does not constitute a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit, and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

   a. Having access to and copying any records that must be kept under the conditions of the permit;

   b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and

   c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

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

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in the permit, the permittee shall immediately notify and provide the Department with the following information:

   a. a description of and cause of noncompliance; and

   b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

PERMITTEE:
Mr. L. A. Fair, Manager
Environmental Permitting & Programs
Florida Power & Light

I.D. NUMBER: 50/BRO/06/0037/04
PERMIT/CERTIFICATION NUMBER: AO 06-148761 *
DATE OF ISSUE: AUG [illegible] 1990
EXPIRATION DATE: June 30, 1993

GENERAL CONDITIONS:

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

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

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any noncompliance of the permitted activity until the transfer is approved by the Department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

( ) Determination of Best Available Control Technology (BACT)
( ) Determination of Prevention of Significant Deterioration (PSD)
( ) Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)
( ) Compliance with New Source Performance Standards

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the Department, during the course of any unresolved enforcement action.

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be submitted or corrected promptly.

PERMITTEE:
Mr. T. R. Fair, Manager
Environmental Permitting & Programs
Florida Power & Light

I.D. NUMBER: 50/BRO/06/0037/04
PERMIT/CERTIFICATION NUMBER: AO 06-148761 *
DATE OF ISSUE: AUG 0 5 1988
EXPIRATION DATE: June 30, 1993

SPECIFIC CONDITIONS:

(1) Permitted Fuels:

These sources shall be fired with No. 2 Distillate fuel Oil and/or natural gas.

(2) Source Emission Limiting Standards and Compliance Testing Requirements:

POLLUTANT	EMISSION 1 LIMITING STDS.	TESTING FREQUENCY			TEST 2 METHOD
		ANNUAL	QUARTERLY	OTHER	
Visible Emissions	20% Opacity	------	-------	✓ If fuel oil consumption in any unit reaches 23,810 bbls (1,000,000 gal.) in a fiscal year, within that fiscal year*	EPA Method 9

1. - FAC 17-2.610(2)
2. - FAC 17-2.700(1)(d), Table 700-1

* NOTE: Usage may be determined on the basis of proportionate time of operation versus total fuel consumption for the block of 12 units. If fuel consumption testing threshold is achieved in September, then visible emissions testing may be conducted prior to October 31 of the same calendar year.

(3) Compliance Testing Related Requirements:

(a) Notification - FAC 17-2.700(2)(a)5

Notification of scheduled test dates shall be given to the Department Southeast District Office and the Broward County Environmental Quality Control Board at least 15 days prior to testing unless otherwise agreed to by the Department.

(b) Conditions

Testing of emissions should be conducted with the source operating within 10% of its rated capacity. Testing may be conducted at less than 90% of rated capacity; however, if so, subsequent source operation is limited to up to 110% of the test load. Once the unit is so limited, then operation at higher capacities is allowed for purposes of additional compliance testing to regain rated capacity in permit, with prior notification to the Department.

PERMITTEE:
Mr. T. R. Fair, Manager
Environmental Permitting & Programs
Florida Power & Light

I.D. NUMBER: 50/BRO/06/0037/04
PERMIT/CERTIFICATION NUMBER: AO 06-148761 *
DATE OF ISSUE: AUG 05 1988
EXPIRATION DATE: June 30, 1993

SPECIFIC CONDITIONS:

(c) Report Submittal - FAC 17-2.700(7)

A copy of the test results shall be submitted to the Department Southeast District Office and the Broward County Environmental Quality Control Board, including formulas with input and output data.

(4) Annual Operations Report - FAC 17-4.14:

On or before March 1 of each calendar year, a completed DER Form 17-1.202(6), Annual Operations Report Form for Air Emissions Sources shall be submitted to the Department Southeast District Office and the Broward County Environmental Quality Control Board, including formulas with input and output data.

(5) Excess Emissions - FAC 17-2.250(1):

Excess emissions resulting from start-up, shut-down or malfunction shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24-hour period unless specifically authorized by the Department for longer duration.

Issued this 5th day of August, 1988

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

for Donald B. White, P.E.
J. Scott Benyon
Deputy Assistant Secretary

STATE OF FLORIDA
DEPARTME' ~ OF ENVIRONMENTAL EGULATION

SOUTHEAST FLORIDA DISTRICT
1900 SOUTH CONGRESS AVENUE
WEST PALM BEACH, FLORIDA 33406

APPLICATION FOR RENEWAL OF PERMIT TO OPERATE AIR POLLUTION SOURCE(S)

If major alterations have occurred, the applicant should complete the Standard Air Permit Application Form.

Source Type: Fossil Fuel Steam Generator Renewal of DER Permit No. AO- 06-60862

Company Name: Florida Power & Light Company County: Broward

Identify the specific emission point source(s) addressed in this application (i.e., Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired):

Lauderdale Power Plant, Unit No. 4, Oil & Gas Fired 161 MW Gross Capacity

Source Location: Street: Griffin Road off State Rd 7 City: Dania

UTM: East 600.0 Zone 17 North 2883.2

Latitude: 26° 04' 06"N. Longitude: 80° 12' 00"W.

1. Attach a check made payable to the Department of Environmental Regulation in accordan with operation permit fee schedule set forth in Florida Administrative Code Ru 17-4.05. Check # 7206 in the amount of $500.00 is attached.

2. Have there been any alterations to the plant since last permitted? [ ] Yes [x] No If minor alterations have occurred, describe on a separate sheet and attach.

3. Attach the last compliance test report required per permit conditions if not submitt previously. All compliance test reports have been submitted.

4. Have previous permit conditions been adhered to? [x] Yes [ ] No If no, explain on separate sheet and attach.

5. Has there been any malfunction of the pollution control equipment during tenure of cu rent permit? [ ] Yes [ ] No If yes, and not previously reported, give brief detai and what action was taken on a separate sheet and attach. Not Applicable

6. Has the pollution control equipment been maintained to preserve the collection eff ciency last permitted by the Department? [ ] Yes [ ] No Not Applicable

7. Has the annual operating report for the last calendar year been submitted? [X] Y [ ] No If no, please attach.

NOTE: Capacity, fuel consumption and heat input data have been adjusted to correlate with maximum potential conditions of fuel, heat rate, and load demand, based on actual unit operation.

8. Please provide the following information if applicable:

A. Raw Materials and Chemical Used in Your Process:

Description	Contaminant Type	Contaminant Wt	Utilization Rate	Utilization lbs/hr
MgO Additive	Particulate	100	12 lb/day average for 19	
Evaporation of boiler cleaning water with approximately 3% of monoammonium citrate solution	Particulate	100	Approximately 30,000 gallons of water every 2 years	

B. Product Weight (lbs/hr): Not Applicable

C. Fuels In order to improve start-up combustion, natural gas is normally used for stabilizing ignition, and natural gas is frequently fired to preheat the boiler prior to ignition of residual fuel oil. Very small quantities of used oil, entirely from FPL operations, will be consumed while burning residual oil.

Type (Be Specific)	Consumption* Avg/hr*	Consumption* Max/hr**	Maximum Heat Input (MMBTU/hr)
Residual Fuel Oil, No. 6	Variable	270	1650
Natural Gas	Variable	1.72	1725

D. ~~Actual~~ Potential Equipment Operating Time: up to hrs/day 24; days/wk 7; wks/yr 52; hrs/yr (power plants only) ~~_____; if seasonal, describe:~~ 2113 Hours of operation during 19 86. More operating time is typical when ambient temperature is either unusually high or low, or during unusual system demands.

The undersigned owner or authorized representative*** of Florida Power & Light Company is fully aware that the statements made in this application for a renewal of a permit to operate an air pollution source are true, correct and complete to the best of his knowledge and belief. Further, the undersigned agrees to maintain and operate the pollution source and pollution control facilities in such a manner as to comply with the provisions of Chapter 403, Florida Statutes, and all the rules and regulations of the Department. He also understands that a permit, if granted by the Department, will be non-transferable and he will promptly notify the Department upon sale or legal transfer of the permitted facility.

This certification pertains solely to air pollution related requirements.

*During actual time of operation.

**Units: Natural Gas-MMCF/hr; Fuel Oils-barrels/hr; Coal-lbs/hr.

***Attach letter of authorization if not previously submitted

Signature, Owner or Authorized Representative (Notarization is mandatory)

T. R. Fair - Manager, Environmental Permitting & Progr

Typed Name and Title

P.O. BOX 14000

Address

Juno Beach, Florida 33408

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHEAST FLORIDA DISTRICT
1900 SOUTH CONGRESS AVENUE
WEST PALM BEACH, FLORIDA 33406

APPLICATION FOR RENEWAL OF PERMIT TO OPERATE AIR POLLUTION SOURCE(S)

If major alterations have occurred, the applicant should complete the Standard Air Permit Application Form.

Source Type: Fossil Fuel Steam Generator Renewal of DER Permit No. AO- 06-60860

Company Name: Florida Power & Light Company County: Broward

Identify the specific emission point source(s) addressed in this application (i.e., Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired):

Lauderdale Power Plant, Unit No. 5, Oil & Gas Fired 161 MW Gross Capacity

Source Location: Street: Griffin Road Off State Road 7 City: Dania, FL

UTM: East 600.0 km Zone 17 North 2883.2 km

Latitude: 26° 04' 06"N. Longitude: 80° 12' 00"W.

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1. Attach a check made payable to the Department of Environmental Regulation in accordan with operation permit fee schedule set forth in Florida Administrative Code Ru 17-4.05. Check # 6573 in the amount of $500.00 is attached.

2. Have there been any alterations to the plant since last permitted? [ ] Yes [x] No If minor alterations have occurred, describe on a separate sheet and attach.

3. Attach the last compliance test report required per permit conditions if not submitt previously. All compliance test reports have been submitted.

4. Have previous permit conditions been adhered to? [xx] Yes [ ] No If no, explain on separate sheet and attach.

5. Has there been any malfunction of the pollution control equipment during tenure of cu rent permit? [ ] Yes [ ] No If yes, and not previously reported, give brief detai and what action was taken on a separate sheet and attach. Not Applicable

6. Has the pollution control equipment been maintained to preserve the collection eff ciency last permitted by the Department? [ ] Yes [ ] No NOT Applicable

7. Has the annual operating report for the last calendar year been submitted? [X] Y [ ] No If no, please attach.

NOTE: Capacity, fuel consumption and heat input data have been adjusted to correlate with maximum potential conditions of fuel, heat rate, and load demand, based on actual unit operation.

A. Please provide the following information if applicable:

A. Raw Materials and Chemical Used in Your Process:

Description	Contaminant Type	Contaminant Wt	Utilization Rate lbs/h
MgO Additive	Particulate	100	16 lb/day average for 1
Evaporation of boiler cleaning water with approximately 3% of monoammonium citrate solution	Particulate	100	Approximately 30,000 gallons of water every 2 years

B. Product Weight (lbs/hr): Not Applicable

C. Fuels

In order to improve start-up combustion, natural gas is normally used for stabilizing ignition, and natural gas is frequently fired to preheat the boiler prior to ignition of residual fuel oil. Very small quantities of used oil, entirely from FPL operations, will be consumed while burning residual oil.

Type (Be Specific)	Consumption* Avg/hr*	Consumption* Max/hr**	Maximum Heat Input (MMBTU/hr)
Residual Fuel Oil, No. 6	Variable	270	1650
Natural Gas	Variable	1.72	1725

D. Potential Equipment Operating Time: up to hrs/day 24; days/wk 7; wks/yr 52; hrs/yr (power plants only) _____; if seasonal, describe 2086 Hours of operati during 19 87. More operating time is typical when ambient temperature is either unusually high or low, or during unusual system demands.

The undersigned owner or authorized representative*** of Florida Power & Light Company is fully aware that the statements made in this application for a renewal of a permit t operate an air pollution source are true, correct and complete to the best of his knowledg and belief. Further, the undersigned agrees to maintain and operate the pollution sourc and pollution control facilities in such a manner as to comply with the provisions of Chap ter 403, Florida Statutes, and all the rules and regulations of the Department. He also understands that a permit, if granted by the Department, will be non-transferable and h will promptly notify the Department upon sale or legal transfer of the permitted facility.

This certification pertains solely to air pollution related requirements.

*During actual time of operation.

**Units: Natural Gas-MMCF/hr; Fuel Oils-barrels/hr; Coal-lbs/hr.

***Attach letter of authorization if not previously submitted.

Signature, Owner or Authorized Representative (Notarization is mandatory)

T. R. Fair - Manager, Environmental Permitting & Progr

Typed Name and Title

P.O. BOX 14000

Address

Juno Beach, Florida 33408

City State Zip

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHEAST FLORIDA DISTRICT
1900 SOUTH CONGRESS AVENUE
WEST PALM BEACH FLORIDA 33406

APPLICATION FOR RENEWAL OF PERMIT TO OPERATE AIR POLLUTION SOURCE(S)

If major alterations have occurred, the applicant should complete the Standard Air Permit Application Form.

Source Type: Stationary Gas Turbines Renewal of DER Permit No. AO-06-62932

Company Name: Florida Power & Light Company County: Broward

Identify the specific emission point source(s) addressed in this application (i.e., Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired):

Lauderdale Power Plant, Gas Turbine Site I, Units 1 - 12, 486 MW Gross Capacity

Source Location: Street: Griffin Road off State Rd 7 City: Dania, Fl.

UTM: East 580.4 km Zone 17 North 2883.5 km

Latitude: 26° 04' 16"N. Longitude: 80° 11' 56"W.

---

1. Attach a check made payable to the Department of Environmental Regulation in accordanc with operation permit fee schedule set forth in Florida Administrative Code Rul 17-4.05. Check # 373252 in the amount of $1,200.00 is attached.

2. Have there been any alterations to the plant since last permitted? [X] Yes [ ] No If minor alterations have occurred, describe on a separate sheet and attach. See attached sheet.

3. Attach the last compliance test report required per permit conditions if not submitte previously. None Required

4. Have previous permit conditions been adhered to? [x] Yes [ ] No If no, explain on separate sheet and attach. Except as previously reported.

5. Has there been any malfunction of the pollution control equipment during tenure of cur rent permit? [ ] Yes [x] No If yes, and not previously reported, give brief detail and what action was taken on a separate sheet and attach.

6. Has the pollution control equipment been maintained to preserve the collection effi ciency last permitted by the Department? [X] Yes [ ] No

7. Has the annual operating report for the last calendar year been submitted? [X] Ye [ ] No If no, please attach.

NOTE: Capacity, fuel consumption and heat input data have been adjusted to correlate with maximum potential conditions of fuel, heat rate, and load demand, based on actual unit operation.

8. Please provide the following information if applicable:

A. Raw Materials and Chemical Used in Your Process:

Description	Containment Type	Containment %Wt	Utilization Rate lbs/
Liquid Detergent	NONE		Occasional use of a few gallons depending upon unit operating time.

B. Product Weight (lbs/hr): Not Applicable

C. Fuels Per Generating Unit

Type (Be Specific)	Consumption* Avg/hr*	Max/hr**	Maximum Heat Input (MMBTU/hr)
No. 2 Distillate Fuel Oil	Variable	118	675
Natural Gas	Variable	0.70	702

D. ~~Normal~~ Potential Equipment Operating Time: hrs/day up to 24; days/wk 7; wks/yr 52; hrs/yr (power plants only) ~~-----; if seasonal, describe~~ Site I had 121 Hours of operation (anywhere from one to twelve units at the same time) during 1987. M operating time is typical when ambient temperature is either unusually high or l or during unusual system demands.

The undersigned owner or authorized representative*** of Florida Power & Light Compar is fully aware that the statements made in this application for a renewal of a perai operate an air pollution source are true, correct and complete to the best of his know and belief. Further, the undersigned agrees to maintain and operate the pollution c and pollution control facilities in such a manner as to comply with the provisions of (ter 403, Florida Statutes, and all the rules and regulations of the Department. He understands that a permit, if granted by the Department, will be non-transferable ar will promptly notify the Department upon sale or legal transfer of the permitted facil

This certification pertains solely to air pollution related requirements.

*During actual time of operation.

**Units: Natural Gas-MMCF/hr; Fuel Oils-barrels/hr; Coal-lbs/hr.

***Attach letter of authorization if not previously submitted

Signature, Owner or Authorized Representa
(Notarization is mandatory)

T. R. Fair - Manager, Environmental Permitting & P

Typed Name and Title

P.O. BOX 14000

Address

Juno Beach, Florida 33408

4/26/88 City State Z

(305)

Kathleen [illegible] State of Florida

4/26/88 [illegible] Expires Feb. 4, 1991

Question #2 (continued)

As explained in our letter of August 27, 1987 some center sections were removed and each stack is now 43.5 feet above foundation. The foundation pedestals average approximately one and a half feet above ground level for the Lauderdale Plant Gas Turbines, therefore the total stack height of each unit is approximately 45 feet.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHEAST FLORIDA DISTRICT
1900 SOUTH CONGRESS AVENUE
WEST PALM BEACH FLORIDA 33406

APPLICATION FOR RENEWAL OF PERMIT TO OPERATE AIR POLLUTION SOURCE(S)

If major alterations have occurred, the applicant should complete the Standard Air Permit Application Form.

Source Type: Stationary Gas Turbines Renewal of DER Permit No. AO-06-62939

Company Name: Florida Power & Light Company County: Broward

Identify the specific emission point source(s) addressed in this application (i.e., Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired):

Lauderdale Power Plant, Gas Turbine Site II, Units 13 - 24, 486 MW Gross Capacity

Source Location: Street: Griffin Road off State Rd 7 City: Dania, Fl.

UTM: East 580.4 km Zone 17 North 2884.1 km

Latitude: 26° 04' 21"N. Longitude: 80° 11' 56"W.

---

1. Attach a check made payable to the Department of Environmental Regulation in accordance with operation permit fee schedule set forth in Florida Administrative Code Rule 17-4.05. Check # 373249 in the amount of $1,200.00 is attached.
2. Have there been any alterations to the plant since last permitted? [x] Yes [ ] No If minor alterations have occurred, describe on a separate sheet and attach. See attached sheet.
3. Attach the last compliance test report required per permit conditions if not submitted previously. None Required
4. Have previous permit conditions been adhered to? [x] Yes [ ] No If no, explain on a separate sheet and attach. Except as previously reported;
5. Has there been any malfunction of the pollution control equipment during tenure of current permit? [ ] Yes [x] No If yes, and not previously reported, give brief details and what action was taken on a separate sheet and attach.
6. Has the pollution control equipment been maintained to preserve the collection efficiency last permitted by the Department? [x] Yes [ ] No
7. Has the annual operating report for the last calendar year been submitted? [x] Yes [ ] No If no, please attach.

NOTE: Capacity, fuel consumption and heat input data have been adjusted to correlate with maximum potential conditions of fuel, heat rate, and load demand, based on actual unit operation.

8. Please provide the following information if applicable:

A. Raw Materials and Chemical Used in Your Process:

Description	Contaminant Type	Contaminant Wt	Utilization Rate lbs/
Liquid Detergent	NONE		Occasional use of a fe gallons depending upon unit operating time.

B. Product Weight (lbs/hr): Not Applicable

C. Fuels Per Generating Unit

Type (Be Specific)	Consumption* Avg/hr*	Max/hr**	Maximum Heat Input (MMBTU/hr)
No. 2 Distillate Fuel Oil	Variable	118	675
Natural Gas	Variable	0.70	702

D. ~~Normal~~ Potential Equipment Operating Time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; hrs/yr (power plants only) ~~-----; if seasonal, describe~~ up to Site II had 392 hours of operation (anywhere from one to twelve units at the same time) during 1987. N operating time is typical when ambient temperature is either unusually high or l or during unusual system demands.

The undersigned owner or authorized representative*** of Florida Power & Light Compa is fully aware that the statements made in this application for a renewal of a pern operate an air pollution source are true, correct and complete to the best of his know and belief. Further, the undersigned agrees to maintain and operate the pollution s and pollution control facilities in such a manner as to comply with the provisions of ter 403, Florida Statutes, and all the rules and regulations of the Department. He understands that a permit, if granted by the Department, will be non-transferable a will promptly notify the Department upon sale or legal transfer of the permitted facil

This certification pertains solely to air pollution related requirements.

*During actual time of operation.

**Units: Natural Gas-MMCF/hr; Fuel Oils-barrels/hr; Coal-lbs/hr.

***Attach letter of authorization if not previously submitted.

Kathleen Campbell
Notary Public, State of Florida
My commission expires Feb. 4, 1991
4/26/88

Signature, Owner or Authorized Representa
(Notarization is mandatory)

T. R. Fair - Manager, Environmental Permitting & P.
Typed Name and Title

P.O. BOX 14000
Address

Juno Beach, Florida 33408
City State

4/26/88 (305) 694-36

Question #2 (continued)

As explained in our letter of August 27, 1987 some center sections were removed and each stack is now 43.5 feet above foundation. The foundation pedestals average approximately one and a half feet above ground level for the Lauderdale Plant Gas Turbines, therefore the total stack height of each unit is approximately 45 feet.