

Memorandum

Florida Department of Environmental Protection

TO: Howard Rhodes

THRU: Clair Fancy
Al Linero *mc for AL*

FROM: Martin Costello *mc*

DATE: April 13, 1998

SUBJECT: Lakeland Electric and Water Utilities
Permit No. PSD-FL-166B / AC53-190437
Charles Larsen Memorial Power Plant, Unit 8

1. Attached for approval and signature is a letter that will amend the above referenced construction permit.
2. No comments were received from the applicant or other parties since the public notice. This action authorizes several changes requested by the applicant. This action also denies a request to extend the averaging period for the NOx standard to a 30 day rolling average. The Department determined that lengthening the averaging time from a 3 hour average to a 30 day rolling average was a relaxation of the BACT standard for this combustion turbine equipped with water injection for controlling NOx.
3. I recommend your approval and signature.

Attachments

AAL/mc

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF FINAL PERMIT

In the Matter of an
Application for Permit

Ms. Farzie Shelton
Lakeland Electric and Water Utilities
501 East Lemon Street
Lakeland, Florida 33801-5050

DEP File No. 1050003-005
PSD-FL-166B / AC53-190437

Enclosed is the FINAL Permit Number PSD-FL-166B / AC53-190437. This permit is re-issued for the following changes: deletion of permit requirements for mercury, lead, and beryllium, replacement of the fuel oil usage limit with a curve of fuel oil usage vs compressor inlet temperature, clarification of the type of changes at the facility that would require the company to notify the Department and apply for a permit modification, and removal of the tpy limits for CO and H₂SO₄. This amendment also adds the short term limit for CO (25 ppm) that was established in the BACT but inadvertently left out of the original PSD permit. This permit is issued pursuant to Chapter 403, Florida Statutes and 62-4 through 297 F.A.C.

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

Executed in Tallahassee, Florida.



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

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF FINAL PERMIT (including the FINAL permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 4-17-98 to the person(s) listed:

Ms. Farzie Shelton, Lakeland Electric and Water *
Mr. Brian Beals, EPA
Mr. John Bunyak, NPS
Mr. Bill Thomas, SWD

Clerk Stamp

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



(Clerk)

4-17-98

(Date)

Memorandum

Florida Department of Environmental Protection

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Ms. Garzie Shelton
Lakeland Electric & Water
501 E. Lemon St.
Lakeland, FL

33801-5050

4a. Article Number

P 265 659 337

4b. Service Type

- ☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery

APR 20 1996

5. Received By: (Print Name)

6. Signature: (Addressee or Agent)

X Gina M. Walker

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1994

Domestic Return Receipt

Thank you for using Return Receipt Service.

P 265 659 337

US Postal Service
Receipt for Certified Mail
 No Insurance Coverage Provided.
 Do not use for International Mail (See reverse)

Sent to	Garzie Shelton
Street / Number	Lake Electric
Post Office, State, & ZIP Code	Water Lakeland, FL
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	4-17-96

PS Form 3800, April 1995
 1050003-005-AC
 PON-FL-166B



Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

PERMITTEE:

Lakeland Electric and Water
501 East Lemon Street
Lakeland, Florida 33801-5050

Permit No.	AC53-190437
PSD No.	PSD-FL-166B
File No.	1050003-005-AC
Expires	December 31, 1998
Facility	Charles Larsen Memorial Plant
Unit No.	Combined Cycle Combustion Turbine, Unit 8

Authorized Representative:
Ms. Farzie Shelton
Environmental Coordinator

LOCATED AT:

Charles Larsen Memorial Plant
Standard Industrial Classification Code (SIC): 4911
Polk County, Florida

Directions: Located on the south side of Lake Parker on US Highway 92 in Lakeland, Polk County

STATEMENT OF BASIS:

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

Attached Appendices and Tables made a part of this permit:

Original construction permit: AC53-190437 / PSD-FL-166 issued 7/25/91

Modification: Dated 12/18/95, added a custom fuel monitoring schedule, clarified ISO correction, and adjusted SO₂ and H₂SO₄ limits

Table 1: Revised Emission limits

Curves: Oil Input vs Compressor Inlet Temperature

Howard L. Rhodes, Director
Division of Air Resources
Management

FINAL DETERMINATION

Lakeland Electric and Water Utilities

Permit No. PSD-FL-166B / AC53-190437

**Charles Larsen Memorial Power Plant, Unit 8
120 Megawatt Combustion Turbine and
Heat Recovery Steam Generator
Polk County**

An Intent to Issue an air construction permit for the Lakeland Electric and Water Utilities, Charles Larsen Memorial Power Plant, located on the south side of Lake Parker on US Highway 92 in Lakeland, Polk County, was distributed on February 23, 1998. The Public Notice of Intent to Issue Air Construction Permit was published in the Tampa Tribune on March 11, 1998. Comments were not submitted in response to the public notice.

The final action of the Department will be to issue the permit as proposed.

AIR CONSTRUCTION PERMIT AC53-190437 / PSD-FL-166B
SPECIFIC CONDITIONS

Specific Condition #7:

From:

7. Any change in the method of operation, equipment or operating hours shall be submitted to the DER's Bureau of Air Regulation and Southwest District Offices.

TO:

7. The owner or operator shall submit to the Permitting Authority(s), for review any changes in; or modifications to: the method of operation; process or pollution control equipment; increased equipment capacities; or any change which would result in an increase in potential or actual emissions. Depending on the size and scope of the modification, it may be necessary to submit an application for, and obtain, an air construction permit prior to making the desired change. *Routine maintenance of equipment will not constitute a modification of this permit.* [Rule 62-4.030, 62-210.300 and 62-4.070(3), F.A.C.]

Specific Condition #19:

FROM:

This source shall comply with all applicable provisions of Chapter 403, Florida Statutes and Chapters 17-2 and 17-4, Florida Administrative Code.

TO:

This source shall comply with all applicable provisions of Chapter 403, Florida Statutes, and Chapters 62-4, 62-210, 62-212, 62-213, 62-214, 62-296, and 62-297, Florida Administrative Code. During each federal fiscal year (October 1 - September 30), unless otherwise specified by rule, order, or permit, the owner or operator of each emissions unit shall have a formal compliance test conducted for:

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

AIR CONSTRUCTION PERMIT AC53-190437 / PSD-FL-166B
SPECIFIC CONDITIONS

SPECIFIC CONDITIONS:

I. This permit supersedes permit AC53-190437 / PSD-FL-166 dated July 25, 1991, as changed by amendment dated December 18, 1995.

II. The provisions of permit AC53-190437 / PSD-FL-166 are incorporated into this permit except for the following changes:

Specific Condition #1:

Table 1 referenced in this condition shall be replaced with the attached Table 1 (revised December 18, 1995 and April 13, 1998).

Specific Condition #2:

This condition is replaced with the following:

2. Emissions of mercury shall be limited by firing only natural gas or No. 2 fuel oil.

Specific Condition #6:

From:

6. The permitted materials and utilization rates for the combined cycle gas turbine shall not exceed the values as follows:

- Maximum No. 2 fuel oil consumption shall not exceed either of the following limitations: 9190 gal/hr; 23,914,800 gals/yr.
- Maximum annual firing using No. 2 fuel oil shall not exceed 1/3 of the annual capacity factor.
- Maximum sulfur (S) content in the No. 2 fuel oil shall not exceed 0.20 percent by weight.
- Maximum heat input shall not exceed 1055 MMBtu/hr (gas) or 1040 MMBtu/hr No. 2 fuel (oil).

TO:

6. The permitted materials and utilization rates for the combined cycle gas turbine shall not exceed the values as follows:

- Maximum No. 2 fuel oil consumption shall not exceed either of the following limitations: the values in the attached Oil Input VS Compressor Inlet Temperature curve and 23,914,800 gals/yr.
- Maximum annual firing using No. 2 fuel oil shall not exceed 1/3 of the annual capacity factor.
- Maximum sulfur (S) content in the No. 2 fuel oil shall not exceed 0.20 percent by weight.
- Maximum heat input shall not exceed 1055 MMBtu/hr (gas) or 1040 MMBtu/hr No. 2 fuel (oil).

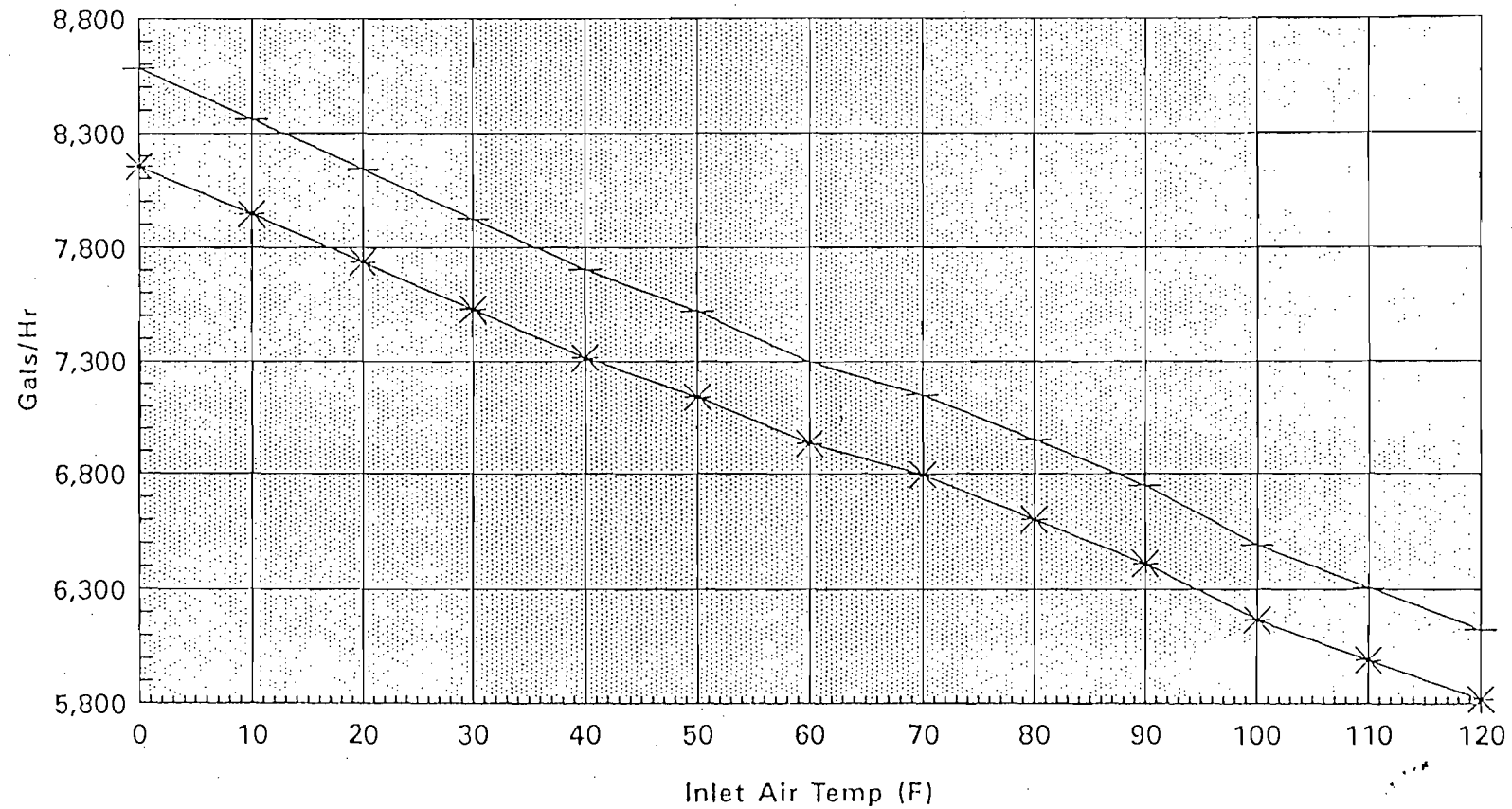
TABLE 1
ALLOWABLE EMISSION LIMITS
Combined Cycle Combustion Turbine
(Revised 12/18/95 and 4/13/98)

Pollutant	Gas Firing	<u>Standards</u>	<u>Gas Turbine and HRSG ^(a)</u>		Basis
			Gas	Tons Per Year Oil	
NO _x	25 PPM at 15% oxygen on a dry basis	42 ppmv at 15 percent oxygen on a dry basis	425	244	BACT
SO ₂	Natural gas a fuel	0.20 percent S by weight	8.6	307	BACT
PM/PM ₁₀	0.006 lb/MMBtu	0.025 lb/MMBtu	22	22	BACT
VOC	-	-	9	6.7	BACT
CO	25 ppmv at 15 percent oxygen on a dry basis	25 ppmv at 15 percent oxygen on a dry basis			BACT
Sulfuric Acid Mist	Natural gas as fuel	Low sulfur content oil			BACT

(a) Emissions rates based on 100 percent capacity factor for natural gas and 1/3 capacity factor for oil firing.

Unit 8

Oil Input vs Compressor Inlet Temperature



+ Design Input #2 Oil * 95% Design Input #2 Oil

Peak Mode

Using LHV of #2 Oil

2/25/97



Farzie Shelton
ENVIRONMENTAL COORDINATOR, CH E.

March 17, 1998

Mr. C.H. Fancy, P.E.
Chief Bureau of Air Regulation
Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RECEIVED

MAR 18 1998

BUREAU OF
AIR REGULATION

Dear Mr. Fancy:

**Re: Draft Permit Amendment No. AC53-19043, PSD-FL-166B
File No. 1050003-005-AC
Charles Iarsen Memorial Power Plant - Unit No. 8**

We are in receipt of your letter dated February 23, 1998 and attached Draft Air Construction Permit And Amendment, and Public Notice of Intent to Issue Permit and Amendment for the above referenced facility.

Pursuant to Section 403.815, Florida Statutes and DEP Rule 62-103.150, F.A.C., on March 9, 1998 we published the "Notice of Intent to Issue Permit And Amendment". Therefore, enclosed please find Affidavit of Publication confirming publication of the Department's notice.

If you should have any questions, please do not hesitate to contact me at (941) 499-6603.

Sincerely

Farzie Shelton; Manager
Environmental Licensing & Permitting

cc: M. Costello, BAR

Enclosure

AFFIDAVIT OF PUBLICATION

THE LEDGER Lakeland, Polk County, Florida

Case No

STATE OF FLORIDA)
COUNTY OF POLK)

Before the undersigned authority personally appeared Nelson Kirkland, who on oath says that he is Classified Advertising Manager of The Ledger, a daily newspaper published at Lakeland in Polk County, Florida; that the attached copy of advertisement, being a

Public Notice Of Intent

in the matter of

AC53-190437/PSD-FL-166B

in the

Court, was published in said newspaper in the issues of

March 9;

1998.

Affiant further says that said The Ledger is a newspaper published at Lakeland, in said Polk County, Florida, and that the said newspaper has heretofore been continuously published in said Polk County, Florida, daily, and has been entered as second class matter at the post office in Lakeland, in said Polk County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Signed

Nelson Kirkland
Nelson Kirkland
Classified Advertising Manager
By Nelson Kirkland who is
personally known to me

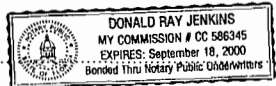
Sworn to and subscribed before me this 13TH

day of MARCH A.D. 19 98

(Seal)

Donald Ray Jenkins
Notary Public

My Commission Expires



Order#699715
Lakeland Electric

Attach Notice Here

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT AND AMENDMENT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DRAFT Permit and Amendment No. AC53-190437/PSD-FL-166B
Charles Larsen Memorial Power Plant
Polk County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit and amendment to Lakeland Electric and Water for the Charles Larsen Memorial Power Plant Unit 8-Combined Cycle Gas Turbine - located on the south side of Lake Parker on US Highway 92 in Lakeland, Polk County, A Best Available Control Technology (BACT) determination was not required pursuant to 32-297.400, F.A.C. and 40 C.F.R. 52.21. Prevention of Significant Deterioration (PSD). The applicant's name and address are: Lakeland Electric and Water, 501 East Lemon Street, city, Florida 33801-5050.

This action re-issues and modifies the construction permit for Larsen Unit 8 which expired in 1993. The attached amendment grants the following changes to the permit: deletion of permit requirements for mercury and lead for this combustion turbine which is only authorized to fire natural gas and low sulfur fuel oil; clarification that Beryllium emissions are minimized by firing clean fuel; replacement of the fuel oil usage limit with a curve of fuel oil usage (gals/hr) vs compressor inlet temperature; clarification of the type of changes of the facility that would require the company to notify the Department and apply for a modification; and removal of the ten day (ten) limit for CO and NO_x. The amendment also adds the short term limit for CO (25 ppm) that was established in the BACT but inadvertently left out of the original PSD permit. Also an annual test is specified in the amended permit as required in Rule 62-297.310 F.A.C. since Unit 8 is major for CO.

The Department will issue the FINAL Permit and Amendment, in accordance with the conditions of the DRAFT Permit and Amendment unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed DRAFT Permit and Amendment issuance action for a period of 30 (thirty) days from the date of publication of this Notice. Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2600. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit and Amendment, the Department shall issue a Revised DRAFT Permit and Amendment and require, if applicable, another Public Notice.

The Department will issue FINAL Permit and Amendment with the conditions of the DRAFT Permit and Amendment unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. or a party requests mediation as an alternative remedy under Section 120.573 before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning for a hearing are set forth below, followed by the procedures for requesting mediation.

A person whose substantial interests are affected by the Department's proposed permitting action may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 850/488-4371, fax: 850/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing the petition or any person to file a petition (or a request for mediation, as discussed below) within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.203 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address and telephone number of each petitioner; the applicant's name and address; the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts depicted by petitioner; if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the Department's action or proposed action addressed in this notice of intent.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the petition taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection Bureau of Air Regulation 111 S. Magnolia Drive, Suite 4 Tallahassee, Florida 32301 Telephone: 850/488-1344 Fax: 850/472-6779	Department of Environmental Protection SW District Office 3804 Coconut Palm Drive Tampa, Florida 33616 Telephone: 813/744-6100 Fax: 813/744-6084
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The complete project file includes the Draft Permit and Amendment, the application, and the information submitted by the responsible official, exclusive of confidential records under Section 203.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-1344, for additional information.

B302 - 3-9-1998

B302

BEST AVAILABLE COPY
THE TAMPA TRIBUNE

Published Daily

Tampa, Hillsborough County, Florida

State of Florida }
County of Hillsborough } ss.

Before the undersigned authority personally appeared J. Rosenthal, who on oath says that she is Classified Billing Manager of The Tampa Tribune, a daily newspaper published at Tampa in Hillsborough County, Florida; that the attached copy of advertisement being a

LEGAL NOTICE

in the matter of _____

PUBLIC NOTICE OF INTENT

was published in said newspaper in the issues of _____

MARCH 9, 1998

Affiant further says that the said The Tampa Tribune is a newspaper published at Tampa in said Hillsborough County, Florida, and that the said newspaper has heretofore been continuously published in said Hillsborough County, Florida, each day and has been entered as second class mail matter at the post office in Tampa, in said Hillsborough County, Florida for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that she has neither paid nor promised any person, this advertisement for publication in the said newspaper.

J. Rosenthal

Sworn to and subscribed before me, this _____ day
of _____ MARCH, A.D. 19 98

Personally Known _____ or Product Identification _____
Type of Identification Produced _____

(SEAL)

Jusie Lee Slaton

PUBLIC NOTICE OF INTENT
TO ISSUE AIR
CONSTRUCTION PERMIT
AND AMENDMENT
STATE OF FLORIDA
DEPARTMENT OF
ENVIRONMENTAL
PROTECTION

DRAFT Permit and Amend
ment No. AC53-190437/
PSD-FL-166B

Charles Larsen Memorial
Power Plant
Polk County

The Department of Environ-
mental Protection (Depart-
ment) gives notice of its inten-
to issue an air construction
permit and amendment to
Lakeland Electric and Water
for the Charles Larsen Mem-
orial Power Plant Unit 8-Com-
bined Cycle Gas Turbine lo-
cated on the south side of
Lake Parker on US Highway
92 in Lakeland, Polk County, A
Best Available Control Tech-
nology (BACT) determination
was not required pursuant to
Rule 62-212.400, F.A.C. and 41
CFR 52.21, Prevention of Sig-
nificant Deterioration (PSD)
The applicant's name and ad-
dress are: Lakeland Electric
and Water, 501 East Lemor
Street, Lakeland, Florida
33801-5050

This action re-issues and mod-
ifies the construction permit
for Larsen Unit 8 which ex-
pired in 1993. The attached
amendment grants the follow-
ing changes to the permit: de-
letion of permit requirements
for mercury and lead for this
combustion turbine which is
only authorized to fire natura
gas and low sulfur fuel oil
clarification the Beryllium
emissions are inlet tempera-
ture, clarification of the type
of changes at the facility that
would require the company to
notify the Department and ap-
ply for a modification, and re-
moval of the ten per year
(tpy) limits for CO and H2SO4.
This amendment also adds the
short term limit for CC
(25ppm) that was establish-
ed in the BACT but inadvertently
left out of the original PSD
permit. Also an annual test is
specified in the amended per-
mit as required in Rule 62-
297.310 F.A.C. since Unit 8 is
major for CO.

The Department will issue the
FINAL Permit and Amend-
ment, in accordance with the
conditions of the DRAFT Per-
mit and Amendment unless a
response received in accor-
dance with the following pro-
cedures results in a different
decision or significant change
of terms or conditions.

The Department will accept
written comments and re-
quests for public meetings
concerning the proposed
DRAFT Permit and Amend-
ment. Issuance action for a
period of 30(thirty) days from
the date of publication of this
Notice. Written comments
and requests for public meet-
ings should be provided to the
Department's Bureau of Air
Regulation, 2600 Blair Stone
Road, Mail Station #5505, Tal-
lahassee, Florida 32399-2400.
Any written comments filed
shall be made available for
public inspection. If written
comments received result in a
significant change in this
DRAFT Permit and Amend-
ment, the Department shall
issue a Revised DRAFT Permit
and Amendment and require,
if applicable, another Public
Notice.

The Department will issue Fi-
NAL Permit and Amendment
with the conditions of the
DRAFT Permit and Amend-
ment unless a timely petition
for an administrative hearing
is filed pursuant to Sections
120.549 and 120.57 F.S. or a
party requests mediation as
an alternative remedy under
Section 120.573 before the
deadline for filing a petition.

Choosing mediation will not
adversely affect the right to a
hearing if mediation does not
result in a settlement. The
procedures for petitioning for a
hearing are set forth below,
followed by the procedures
for requesting mediations.
A person whose substantial
interests are affected by the
Department's proposed per-
mitting decision may petition
for an administrative hearing
in accordance with Sections
120.569 and 120.57 F.S. The
petition must contain the in-
formation set forth below and
must be filed (received) in the

Office of General Counsel of
the Department, 3900 Com-
monwealth Boulevard, Mail
Station #35, Tallahassee,
Florida 32399-3000, telephone:
850/488-9370, fax: 850/487-
4938. Petitions must be filed
within fourteen days of publi-
cation of the public notice or
within fourteen days of re-
ceipt of this notice of intent,
whichever occurs first. A peti-
tioner must mail a copy of the
petition to the applicant at the
address indicated above, at
the time of filing. The failure
of any person to file a petition
(or a request for mediation as
discussed below) within the
appropriate time period shall
constitute a waiver of that
person's right to request an
administrative determination
(hearing) under Sections
120.549 and 120.57 F.S. or to
intervene in this proceeding
and participate as a party to
it. Any subsequent interven-
tion will be only at the approv-

al of the presiding officer upon
the filing of a motion in com-
pliance with Rule 28-5.207 of
the Florida Administrative
Code.

A petition must contain the
following information: (a) The
name, address, and telephone
number of each petitioner, the
applicant's name and address,
the Permit File Number and
the county in which the pro-
ject is proposed; (b) A state-
ment of how and when each
petitioner received notice of
the Department's action or
proposed action; (c) A state-
ment of how each petitioner's
substantial interests are af-
fected by the Department's
action or proposed action; (d)
A statement of the material
facts disputed by petitioner, if
any; (e) A statement of the
facts that the petitioner con-
tends warrant reversal or
modification of the Depart-
ment's action or proposed ac-
tion; (f) A statement identify-
ing the rules or statutes that
the petitioner contends re-
quire reversal or modification
of the Department's action or
proposed action; and (g) A
statement of the relief sought
by the petitioner, stating pre-
cisely the action that the peti-
tioner wants the Department
to take with respect to the
Department's action or pro-
posed action addressed in this
notice of intent.

Because the administrative
hearing process is designed to
formulate final agency action,
the filing of a petition means
that the Department's final
action may be different from
the position taken by it in this

notice of Intent. Persons
whose substantial interests
will be affected by any such
final decision of the Depart-
ment on the application have
the right to petition to become
a party to the proceeding, in
accordance with the require-
ments set forth above.

A complete project file is
available for public inspection
during normal business hours,
8:00 a.m. to 5:00 p.m., Monday
through Friday, except legal
holidays, at:

Department of Environmental
Protection, Bureau of Air Re-
gulation, 111 S. Magnolia Drive,
Suite 4, Tallahassee, Florida,
32301, Telephone: 850-488-
1344, Fax: 850/922-6979

Department of Environmental
Protection, SW District Office,
3804 Coconut Palm Drive,
Tampa, Florida 33619 Tele-
phone: 813/744-6100, Fax:
813-744-6084

The complete project file in-
cludes the Draft Permit and
Amendment, the application,
and the information submit-
ted by the responsible official,
exclusive of confidential re-
cords under Section
403.111 F.S. Interested per-
sons may contact the Admin-
istrator, New Resource Re-
view Section at 111 South
Magnolia Drive, Suite 4, Tal-
lahassee, Florida 32301, or call
850/488-1344, for additional in-
formation.

LK2321 3/9/98

①

Larsen U8

12/90 Application

3/91 Intent

To: PSD-166 file
From: Martin Castello
Re: History of Unit 8

4/21/93 mod. request

5/25/93 EPA response to Request for Alternate
Iso correction - City told EPA they were
injecting too much water causing high maint.

6/27/95 Request for custom fuel monitoring schedule

8/10/95 Corrections to above request

9/21/95

As Intent - Amendment 50
AD Amended - changed 5 SAM TPR

10/6/95 Extension of time to file for hearing
for proposed Amendment of PSD permit.

10/13/95 Comments on Intent & request to waive 30 day
public comment period / request for hearing period
2 wrong Table 1 in Intent package
3 Don't like the - NO 15/hr TPR

Increase monitoring data

10/31/95 Letter to Lakeland, Agreed to waive #1
(over)

(2)

ISO only for initial
p & ISO limit

10/19/95

Letter to SWD, revisions to AQ amendment

11/16/95

SW District letter requesting
reasonable assurance that CT
could comply w/ limits in winter

11/10/96

PN for PSD Amendment

— included language for no increase
in lb/hr TPT NO_x & submission of
CEM Data

12/4/95

Extension of time to request hearing
on AQ Amendment

12/18/95

Final PSD Amendment

→ No requirement for NO_x CEMS Data

3/14/97

Amendment Request
(received 3/20)

- Hg, Pb, Be, Limits
- Fuel oil lb/hr → ^{weight} CURVE
- Method 5B for PM
- SAM & CO limits Waiver
- Compliance by CEM w/
24 hr rolling Ave.
- Modification - SC #7 remove

4/18/97

Sufficiency Letter - asked Lakeland to propose equivalent NO_x
std. for the 30 day rolling ave.

4/23/97
¹³
received

Response Letter - dropped MSB request

7/21 Meeting w/ Pat, Al, Angela Morrison, Farzie

7/22/97 - request to delete tpy limit for
(received 7/29/97) Voc (Revise Table 1)

- draft Notice of Intent & PN
language change - speak about a "revised
Draft" want to delete this
language.

9/11/97 - CEMs data with 2 quarter 97
(received 9/15) daily & 30 day rolling Ave - includes
su/sd/mak - "All valid data"

10/7/97 Dept Letter - RFI on 30 day rolling Average
on unit 8.

1/21/98 Lakeland response letter
(received 1/26)



Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

February 23, 1998

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Ms. Farzie Shelton,
Environmental Coordinator
Lakeland Electric and Water
501 East Lemon Street
Lakeland, Florida 33801-5050

Re DRAFT Permit Amendment No. AC53-190437, PSD-FL-166B
File No. 1050003-005-AC
Charles Larsen Memorial Power Plant Unit 8-Combined Cycle Gas Turbine

Dear Ms. Shelton:

Enclosed is one copy of the Draft Air Construction Permit And Amendment for the Charles Larsen Memorial Power Plant located on the south side of Lake Parker on US Highway 92 in Polk County. The Department's Intent to Issue Air Construction Permit And Amendment and the "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT AND AMENDMENT" are also included.

The "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT AND AMENDMENT" must be published within 30 (thirty) days of receipt of this letter. Proof of publication, i.e., newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit amendment.

Please submit any written comments you wish to have considered concerning the Department's proposed action to A. A. Linero, P.E., Administrator, New Source Review Section at the above letterhead address. If you have any other questions, please contact Mr. Martin Costello or Mr. Linero at 850/488-1344.

Sincerely,

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

CHF/mc

Enclosures

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Ms. Garzie Shelton, EC
Lakeland Electric & Water
501 E. Lemon St.
Lakeland, FL
33801-5050

4a. Article Number
P 265 659 300

4b. Service Type

☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery
2-26-98

5. Received By: (Print Name)

6. Signature: (Addressee or Agent)
X Bonnie Green

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1994 Domestic Return Receipt

Thank you for using Return Receipt Service.

PSD-FI-166B

P 265 659 300

US Postal Service
Receipt for Certified Mail
 No Insurance Coverage Provided.
 Do not use for International Mail (See reverse)

Sent to	GARZIE Shelton
Street & Number	Lakeland Electric & Water
Post Office, State, & ZIP Code	Lakeland, FL
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	PSD-FI-166B 2-24-98

PS Form 3800, April 1995

In the Matter of an
Application for Permit and Amendment by:

Lakeland Electric and Water
501 East Lemon Street
Lakeland, Florida 33801-5050/

Permit No. AC53-190437 / PSD-FL-166B
Charles Larsen Memorial Power Plant
Polk County

INTENT TO ISSUE AIR CONSTRUCTION PERMIT AND AMENDMENT

The Department of Environmental Protection (Department) gives notice of its intent to re-issue an air construction permit and to issue a amendment (copy of DRAFT Permit and Amendment attached) for the proposed project, as detailed in the application specified above, for the reasons stated below.

The applicant, Lakeland Electric and Water, applied on March 20, 1997, to the Department for an amendment of the above referenced permit for Charles Larsen Memorial Power Plant Unit 8 located on the south side of Lake Parker on US Highway 92 in Lakeland, Polk County. Because the original construction permit expired in 1993, this action re-issues the expired permit and makes the changes indicated in the draft permit.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212. The above actions are not exempt from permitting procedures. The Department has determined that an air construction permit and amendment is required to authorize the following changes: deletion of permit requirements for mercury and lead for this combustion turbine which is only authorized to fire natural gas and low sulfur fuel oil, clarification that beryllium emissions are minimized by firing clean fuels, replacement of the fuel oil usage limit with a curve of fuel oil usage (gals/hr) vs compressor inlet temperature, clarification of the type of changes at the facility that would require the company to notify the Department and apply for a modification, and removal of the tpy limits for CO and H₂SO₄. This amendment also adds the short term limit for CO (25 ppm) that was established in the BACT but inadvertently left out of the original PSD permit. Also an annual test is specified in the amended permit as required in 62-297.310 since Unit 8 is major for CO.

The Charles Larsen Memorial Power Plant contains a 120 MW combined cycle combustion turbine which fires mainly natural gas. Nitrogen oxides emissions are controlled by water injection.

The Department intends to re-issue this air construction permit and amendment based on the belief that reasonable assurances have been provided to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C.

Pursuant to Section 403.815, F.S., and Rule 62-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT AND AMENDMENT". The notice shall be published one time only within 30 (thirty) days in the legal advertisement section of a newspaper of general circulation in the area affected. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. Where there is more than one newspaper of general circulation in the county, the newspaper used must be one with significant circulation in the area that may be affected by the permit. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 850/488-1344; Fax 850/ 922-6979) within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit and amendment pursuant to Rule 62-103.150 (6), F.A.C.

The Department will issue the FINAL permit and amendment, in accordance with the conditions of the enclosed DRAFT permit and amendment unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed DRAFT permit and amendment issuance action for a period of 30 (thirty) days from the date of publication of "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT AND AMENDMENT." Written comments should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit and Amendment, the Department shall issue a Revised DRAFT Permit and Amendment and require, if applicable, another Public Notice.

The Department will issue the permit and amendment with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 850/488-9730, fax: 850/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition (or a request for mediation, as discussed below) within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the action or proposed action addressed in this notice of intent.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The

name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tallahassee, Florida.



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

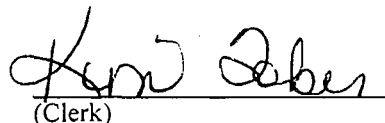
CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this INTENT TO ISSUE AIR CONSTRUCTION PERMIT AND AMENDMENT (including the PUBLIC NOTICE, and DRAFT permit and amendment) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 2-24-98 to the person(s) listed:

Ms. Farzie Shelton, Lakeland Electric and Water *
Mr. Kennard Kosky, Golder Associates
Mr. Brian Beals EPA
Mr. John Bunyak, NPS
Mr. Bill Thomas, SWD

Clerk Stamp

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


(Clerk)

2-24-98
(Date)

NOTICE TO BE PUBLISHED IN THE NEWSPAPER

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT AND AMENDMENT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DRAFT Permit and Amendment No. AC53-190437 / PSD-FL-166B
Charles Larsen Memorial Power Plant
Polk County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit and amendment to Lakeland Electric and Water for the Charles Larsen Memorial Power Plant Unit 8-Combined Cycle Gas Turbine located on the south side of Lake Parker on US Highway 92 in Lakeland, Polk County. A Best Available Control Technology (BACT) determination was not required pursuant to Rule 62-212.400, F.A.C. and 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The applicant's name and address are: Lakeland Electric and Water, 501 East Lemon Street, city, Florida, 33801-5050.

This action re-issues and modifies the construction permit for Larsen Unit 8 which expired in 1993. The attached amendment grants the following changes to the permit: deletion of permit requirements for mercury and lead for this combustion turbine which is only authorized to fire natural gas and low sulfur fuel oil, clarification that Beryllium emissions are minimized by firing clean fuels, replacement of the fuel oil usage limit with a curve of fuel oil usage (gals/hr) vs compressor inlet temperature, clarification of the type of changes at the facility that would require the company to notify the Department and apply for a modification, and removal of the ton per year (tpy) limits for CO and H₂SO₄. This amendment also adds the short term limit for CO (25 ppm) that was established in the BACT but inadvertently left out of the original PSD permit. Also an annual test is specified in the amended permit as required in Rule 62-297.310 F.A.C. since Unit 8 is major for CO.

The Department will issue the FINAL Permit and Amendment, in accordance with the conditions of the DRAFT Permit and Amendment unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed DRAFT Permit and Amendment issuance action for a period of 30 (thirty) days from the date of publication of this Notice. Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit and Amendment, the Department shall issue a Revised DRAFT Permit and Amendment and require, if applicable, another Public Notice.

The Department will issue FINAL Permit and Amendment with the conditions of the DRAFT Permit and Amendment unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. or a party requests mediation as an alternative remedy under Section 120.573 before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning for a hearing are set forth below, followed by the procedures for requesting mediation.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 850/488-9370, fax: 850/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition (or a request for mediation, as discussed below) within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating

precisely the action that the petitioner wants the Department to take with respect to the Department's action or proposed action addressed in this notice of intent.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida, 32301
Telephone: 850/488-1344
Fax: 850/922-6979

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

The complete project file includes the Draft Permit and Amendment, the application, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-1344, for additional information.

**TECHNICAL EVALUATION
AND
PRELIMINARY DETERMINATION**

Lakeland Electric and Water Utilities

**Charles Larsen Memorial Power Plant, Unit 8
120 Megawatt Combustion Turbine and
Heat Recovery Steam Generator
Polk County**

Permit No. PSD-FL-166B / AC53-190437
(Revised)

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation

February 23, 1998

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Amendment Request and Analysis:

The Department received a request from the applicant, the City of Lakeland, for changes to Permit No. PSD-FL-166B \ AC53-190437. Several of the requested changes are approved in the attached draft letter which amends and reissues the construction permit. This action removes the annual cap for CO emissions. This action also removes limits for lead, mercury, beryllium, and sulfuric acid mist since these pollutants are controlled by restricting fuels to natural gas or low sulfur diesel oil. This action also allows the use of a curve to determine fuel oil usage limits. Specific Condition 6 is changed to replace the hourly fuel oil usage limit (8,190 gph) with the curve of fuel oil usage versus compressor inlet temperature provided by the applicant.

The applicant withdrew a request to use EPA Method 5B for nonsulfuric acid particulate matter.

The following explains the reasons why some of the requested permit changes are not approved.

30 Day Rolling Average:

Larsen Unit 8 consists of a GE combustion turbine with an unfired heat recovery steam generator. Nitrogen oxides (NOx) are controlled in the combustion turbine using water injection. The current compliance method for NOx is an annual stack test. Unit 8 has a dilution extractive continuous monitoring system which measures NOx concentrations on a wet basis. The applicant originally requested a 24 hour averaging time for the NOx standard which would be demonstrated using a continuous emission monitoring system (CEMS). The applicant later requested a 30 day rolling average citing a 1994 statute change which requires certain acid rain units to use a 30 day rolling average. The Department determined that Section 403.0872(13)(b) of the Florida Statutes narrowly applies to units subject to 62-296.405 F.A.C. except that other averaging times shall apply for these units if specifically provided in 40 CFR parts 60 or 76. The statute does not authorize relaxation of BACT standards. The applicant argued in a letter dated May 13, 1997 that 62-296.405 F.A.C. is applicable to Larsen Unit-8 since this combined cycle unit repowered an existing boiler which was subject to this rule. The Department has determined that the combined cycle unit is not subject to 62-296.405 F.A.C. since the heat recovery steam generator is unfired (no duct burner).

The applicant was asked for an analysis which would provide the Department reasonable assurance that the existing BACT standard for NOx (25 ppmvd @ 15 % O₂ on a dry basis determined by Method 20) would not be less stringent than the proposed BACT standard (25 ppmvd @ 15% O₂ compliance by CEM based on a 30 day rolling average on a wet basis). The applicant failed to provide reasonable assurance that the stringency of the BACT standard would be preserved with the longer averaging time. The proposed BACT standard is on a wet basis due to the type of monitoring system used for Unit 8. Pollutant concentrations measured on a wet basis are lower than the same emissions measured on a dry basis since the water dilutes the concentration. The Department's analysis of monitoring data (including periods of startup, shutdown, and malfunction) indicated that the NOx standard should be reduced for the longer averaging time. The Department also noted differences in startup emissions as some startups had excursions which exceeded 25 ppm NOx while

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

many other startups were accomplished without exceeding the standard. The applicant may be able to improve the startup procedure to reduce excess emissions.

The Larsen Facility is located about 30 miles east of downtown Tampa and less than 30 miles from the Hillsborough county line which delineates the Tampa Bay Maintenance Area. Due to recent exceedances of the ambient air standard for ozone in Tampa, the Department recently conducted two public workshops on emission reduction strategies for NO_x and VOC. Ozone episodes are generally a result of ozone precursor emissions (NO_x and VOC) over a daily or a few days time which react in the atmosphere with the aid of sunlight. Uncontrolled emissions from Larsen Unit 8, a 120 MW combined cycle unit, may be approximately 150 ppm versus the controlled rate of 25 ppm.

The City petitioned to EPA in the past for an alternative ISO correction equation because they claimed they were injecting too much water for NO_x control. If the BACT standard were to be based on a 30 day average and 25 ppmw, the result would likely be less water injected for NO_x control.

The current construction permit specifies a NO_x BACT limit of 25 ppmvd @ 15% O₂ and compliance demonstration by Method 20. This BACT standard limits the peak NO_x emissions to 25 ppm on a short term basis. The unit currently has a CEMS for NO_x as required by 40 CFR 75. This system records hourly averages of NO_x emission rates. Extension of the averaging time to a 30 day rolling average affords the opportunity to operate the unit in excess of 25 ppm for hours, days or even weeks as long as low emission rate operation is sufficient to average below the standard on a 30 day rolling average. This constitutes a potential short term relaxation of the original BACT for NO_x. Since the stringency of the original BACT must be preserved, the new emission limit must be reduced to a level which equates to the original limit which is based on a 1 hour average and on a dry basis. Although the applicant submitted data which includes all operating periods, the applicant has not requested inclusion of startup/shut down, and malfunction in the 30 day rolling averages periods.

Particulate Matter Emission Limits:

The applicant requested clarification that the particulate matter emission limits should be based on a 3 hour block average. The applicant explained that this clarification was needed in anticipation of the implementation of EPA's Any Credible Evidence Rule in Florida. This rule provides that data from methods other than the compliance test methods specified in the permit or applicable rules can be used for enforcement purposes. No additional language will be added to the PSD permit since the averaging time is implicit to the test methods (Method 5 or 17) and the required test length specified in Rule 62-297.310. Note that 62-297.310(1) F.A.C. allows compliance to be determined from two runs under certain circumstances.

CO BACT Standard:

Table 1 of the permit does not show the BACT limit of 25 ppmvd but instead shows a tpy CO limit for each fuel. A review of the file showed that the Preliminary Determination and Technical Evaluation and draft BACT Determination dated March 15, 1991 incorrectly concluded that PSD was

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

not triggered for CO. The draft permit in this Intent Package contained only tpy values for CO. The Final Determination contained a BACT for CO (25 ppm) for each fuel but Table 1 was not adjusted to incorporate these applicable limits. Specific Condition 12 of the permit waives VOC testing provided that the CO emission standards are demonstrated. The applicant is now requesting that the tpy values in Table 1 be removed. This request is granted although the BACT limit of 25 ppm CO and an annual test requirement pursuant to 62-297.310(7)(a)4 F.A.C. is added to the permit to correct the oversight when the original permit was issued.

Averaging Time for Heat Input Limits:

The applicant requested a 30 day rolling average for the heat input limits in Specific Condition 6. The heat input limitation is implied in the units for this standard which is MMBtu/hr. The Department has not used averages longer than one hour for heat input limits on other combustion turbines. Heat input must be calculated on an hourly basis since compliance testing is based on three 1 hour runs while the combustion turbine is operated at capacity (the maximum permitted heat input). The averaging time for heat input limits will not be extended from the current one hour basis.

Based on the foregoing technical evaluation of the application and additional information submitted by the applicant, the Department has made a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations provided the Department's Best Available Control Technology Determination is implemented and certain conditions are met. The amended permit conditions are listed in the attached draft letter.

Permit Engineer: Martin Costello, P.E.

Reviewed and Approved by Clair Fancy, P.E.
Chief, Bureau of Air Regulation



Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

PERMITTEE:

Lakeland Electric and Water
501 East Lemon Street
Lakeland, Florida 33801-5050

Permit No.	AC53-190437
PSD No.	PSD-FL-166B
File No.	1050003-015-AC
Expires	December 31, 1998
Facility	Charles Larsen Memorial Plant
Unit No.	Combined Cycle Combustion Turbine, Unit 8

Authorized Representative:
Ms. Farzie Shelton
Environmental Coordinator

DRAFT

LOCATED AT:

Charles Larsen Memorial Plant
Standard Industrial Classification Code (SIC): 4911
Polk County, Florida

Directions: Located on the south side of Lake Parker on US Highway 92 in Lakeland, Polk County

STATEMENT OF BASIS:

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

Attached Appendices and Tables made a part of this permit:

Original construction permit	AC53-190437 / PSD-FL-166 issued 7/25/91
Modification	Dated 12/18/95, added a custom fuel monitoring schedule, clarified ISO correction, and adjusted SO ₂ and H ₂ SO ₄ limits
Table 1	Revised Emission Limits

Howard L. Rhodes, Director
Division of Air Resources
Management

DRAFT

SPECIFIC CONDITIONS:

- I This permit supersedes permit AC53-190437 / PSD-FL-166 dated July 25, 1991, as changed by amendment dated December 18, 1995.
- II The provisions of permit AC53-190437 / PSD-FL-166 are incorporated into this permit except for the following changes:

Specific Condition #1:

Table 1 referenced in this condition shall be replaced with the attached Table 1 (revised December 18, 1995 and February 23, 1998). This new table does not contain emission limits for Mercury, Lead, or Beryllium. CO and sulfuric acid mist emission limits have also been changed. The tons per year (tpy) limits for CO have been replaced with the BACT limits of 25 ppm for each fuel.

Specific Condition #2:

This condition is replaced with the following:

2. Emissions of mercury shall be limited by firing only natural gas or No. 2 fuel oil.

Specific Condition #6:

From:

6. The permitted materials and utilization rates for the combined cycle gas turbine shall not exceed the values as follows:
 - Maximum No. 2 fuel oil consumption shall not exceed either of the following limitations: 9190 gal/hr; 23,914,800 gals/yr.
 - Maximum annual firing using No. 2 fuel oil shall not exceed 1/3 of the annual capacity factor.
 - Maximum sulfur (S) content in the No. 2 fuel oil shall not exceed 0.20 percent by weight.
 - Maximum heat input shall not exceed 1055 MMBtu/hr (gas) or 1040 MMBtu/hr No. 2 fuel (oil).

TO:

6. The permitted materials and utilization rates for the combined cycle gas turbine shall not exceed the values as follows:
 - Maximum No. 2 fuel oil consumption shall not exceed either of the following limitations: the values in the attached Oil Input VS Compressor Inlet Temperature curve and 23,914,800 gals/yr.
 - Maximum annual firing using No. 2 fuel oil shall not exceed 1/3 of the annual capacity factor.
 - Maximum sulfur (S) content in the No. 2 fuel oil shall not exceed 0.20 percent by weight.
 - Maximum heat input shall not exceed 1055 MMBtu/hr (gas) or 1040 MMBtu/hr No. 2 fuel (oil).

DRAFT

Specific Condition #7:

From:

7. Any change in the method of operation, equipment or operating hours shall be submitted to the DER's Bureau of Air Regulation and Southwest District Offices.

TO:

7. The owner or operator shall submit to the Permitting Authority(s), for review any changes in, or modifications to: the method of operation; process or pollution control equipment; increased equipment capacities; or any change which would result in an increase in potential or actual emissions. Depending on the size and scope of the modification, it may be necessary to submit an application for, and obtain, an air construction permit prior to making the desired change. *Routine maintenance of equipment will not constitute a modification of this permit.* [Rule 62-4.030, 62-210.300 and 62-4.070(3), F.A.C.]

Specific Condition #19:

FROM:

This source shall comply with all applicable provisions of Chapter 403, Florida Statutes and Chapters 17-2 and 17-4, Florida Administrative Code.

TO:

This source shall comply with all applicable provisions of Chapter 403, Florida Statutes, and Chapters 62-4, 62-210, 62-212, 62-213, 62-214, 62-296, and 62-297, Florida Administrative Code. During each federal fiscal year (October 1 - September 30), unless otherwise specified by rule, order, or permit, the owner or operator of each emissions unit shall have a formal compliance test conducted for:

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

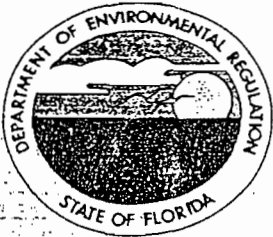
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TABLE 1
ALLOWABLE EMISSION LIMITS
Combined Cycle Combustion Turbine
(Revised 12/18/95 and 2/23/98)

Pollutant	Gas Firing	Standards	Gas Turbine and HRSG ^(a)		Basis
			Gas	Tons Per Year Oil	
NO _x	25 PPM at 15% oxygen on a dry basis	42 ppmv at 15 percent oxygen on a dry basis	425	244	BACT
SO ₂	Natural gas a fuel	0.20 percent S by weight	8.6	307	BACT
PM/PM ₁₀	0.006 lb/MMBtu	0.025 lb/MMBtu	22	22	BACT
VOC	-	-	9	6.7	BACT
CO	25 ppmv at 15 percent oxygen on a dry basis	25 ppmv at 15 percent oxygen on a dry basis			BACT
Sulfuric Acid Mist	Natural gas as fuel	Low sulfur content oil			BACT

(a) Emissions rates based on 100 percent capacity factor for natural gas and 1/3 capacity factor for oil firing.

Current Permit



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

PERMITTEE:
City of Lakeland
501 E. Lemon Street
Lakeland, Florida 32961

Permit Number: AC 53-190437
Expiration Date: March 30, 1993
County: Polk
Latitude/Longitude: 28°02'56"N
81°55'25"W
Project: 120 MW Combined Cycle
Gas Turbine

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawings, plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

For the construction of a 120 MW combined cycle gas turbine to be located at the City of Lakeland-Charles Larsen Power Plant in Lakeland, Florida. The turbine will fire natural gas as the primary fuel and have limited hours firing No. 2 fuel oil. The turbine is a GE PG7111 (EA) Frame 7 unit with water injection to reduce NOx emissions. Fuel flow rate for natural gas is 17,333 scfm @ ISO and 124.2 gal/min @ ISO for No. 2 fuel oil. The UTM coordinates are 409.185 km East and 3102.754 km North.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. City of Lakeland-Charles Larsen Power Plant's letter dated April 3, 1991.
2. EPA Region IV letter dated April 4, 1991.
3. National Park Service's letter dated May 3, 1991.
4. City of Lakeland's letter dated May 15, 1991.

PERMITTEE:
City of Lakeland

Permit Number: AC 53-190437
Expiration Date: March 30, 1993

GENERAL CONDITIONS:

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

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the dates 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 corrected promptly.

SPECIFIC CONDITIONS:

Emission Limits

1. The maximum allowable emissions from this facility shall not exceed the emission rates listed in Table 1.

2. Unless the Department has determined other concentrations are required to protect public health and safety, predicted acceptable ambient air concentrations (AAC) of the following pollutants shall not be exceeded:

PERMITTEE:
City of Lakeland

Permit Number: AC 53-190437
Expiration Date: March 30, 1993

SPECIFIC CONDITIONS:

Pollutant	Acceptable Ambient Concentrations		
	8-hrs	24-hrs	Annual
Beryllium	0.02	0.005	0.0004
Lead	1.5	0.36	0.09
Inorganic mercury compounds, all forms of vapor, as Hg	-	-	0.3

3. Visible emissions shall not exceed 10% opacity.

Operating Rates

4. This source is allowed to operate continuously (8760 hours per year).

5. This source is allowed to use natural gas as the primary fuel and No. 2 distillate oil as the secondary fuel (limited as shown in Specific Condition 6 below).

6. The permitted materials and utilization rates for the combined cycle gas turbine shall not exceed the values as follows:

- Maximum No. 2 fuel oil consumption shall not exceed either of the following limitations: 8,190 gals/hr; 23,914,800 gals/yr.
- Maximum annual firing using No. 2 fuel oil shall not exceed 1/3 of the annual capacity factor.
- Maximum sulfur (S) content in the No. 2 fuel oil shall not exceed 0.20 percent by weight.
- Maximum heat input shall not exceed 1055 MMBtu/hr (gas) or 1040 MMBtu/hr No. 2 fuel (oil).

7. Any change in the method of operation, equipment or operating hours shall be submitted to the DER's Bureau of Air Regulation and Southwest District offices.

8. Any other operating parameters established during compliance testing and/or inspection that will ensure the proper operation of this facility shall be included in the operating permit.

PERMITTEE:
City of Lakeland

Permit Number: AC 53-190437
Expiration Date: March 30, 1993

SPECIFIC CONDITIONS:

Compliance Determination

9. Initial (I) compliance tests shall be performed on each CT using both fuels. The stack test for each turbine shall be performed within 10 percent of the maximum heat rate input for the tested operating temperature. Annual (A) compliance tests shall be performed on each CT with the fuel(s) used for more than 400 hours in the preceding 12-month period. Tests shall be conducted using EPA reference methods in accordance with the November 2, 1989, version of 40 CFR 60 Appendix A:

- a. 5 or 17 for PM (I, A, for oil only)
- b. 10 for CO (I)
- c. 9 for VE (I, A)
- d. 20 for NO_x (I, A)
- e. Trace elements of Beryllium (Be) shall be tested (I, for oil only) using EMTIC Interim Test Method. As an alternative, Method 104 may be used; or Be may be determined from fuel sample analysis using either Method 7090 or 7091, and sample extraction using Method 3040 as described in the EPA solid waste regulations SW-846.
- f. Mercury (Hg) shall be tested using EPA Method 101 (40 CFR 61, Appendix B) (I, for oil only) or fuel sampling analysis using methods acceptable to the Department.

Other DER approved methods may be used for compliance testing after prior Departmental approval.

10. Method 5 or 17 must be used to determine the initial compliance status of this unit. Thereafter, the opacity emissions test may be used unless 10% opacity is exceeded.

11. Compliance with the SO₂ emission limit can also be determined by calculations based on fuel analysis using ASTM D2880-71 for the sulfur content of liquid.

12. Compliance with the total volatile organic compound emission limits will be assumed, provided the CO allowable emission rate is achieved; specific VOC compliance testing is not required.

PERMITTEE:
City of Lakeland

Permit Number: AC 53-190437
Expiration Date: March 30, 1993

*clarified by
12/18/95 Amendment*

SPECIFIC CONDITIONS:

the initial

NSPS 13. During ~~the initial~~ performance tests, to determine compliance with the proposed NO_x standard, measured NO_x emission at 15 percent oxygen will be adjusted to ISO ambient atmospheric conditions by the following correction factor:

$$NO_x = (NO_x \text{ obs}) \left(\frac{P_{\text{ref}}}{P_{\text{obs}}} \right)^{0.5} e^{19(H_{\text{obs}} - 0.00633)} \left(\frac{288^\circ K}{T_{\text{AMB}}} \right)^{1.53}$$

where:

NO_x = Emissions of NO_x at 15 percent oxygen and ISO standard ambient conditions.

NO_x obs = Measured NO_x emission at 15 percent oxygen, ppmv.

P_{ref} = Reference combustor inlet absolute pressure at 101.3 kilopascals (1 atmosphere) ambient pressure.

P_{obs} = Measured combustor inlet absolute pressure at test ambient pressure.

H_{obs} = Specific humidity of ambient air at test.

e = Transcendental constant (2.718).

T_{AMB} = Temperature of ambient air at test.

14. Test results will be the average of 3 valid runs. The Southwest District office will be notified at least 30 days in advance of the compliance test. The source shall operate between 90% and 100% of permitted capacity during the compliance test. Compliance test results shall be submitted to the Southwest District office no later than 45 days after completion.

15. Water injection shall be utilized for NO_x control. The water to fuel ratio at which compliance is achieved shall be incorporated into the permit and shall be continuously monitored. In addition, the Permittee shall install a duct module suitable for future installation of SCR equipment.

16. To determine compliance with the capacity factor condition for oil firing, the Permittee shall maintain daily records of fuel usage. All records shall be maintained for a minimum of three years after the date of each record and shall be made available to representatives of the Department upon request.

PERMITTEE:
City of Lakeland

Permit Number: AC 53-190437
Expiration Date: March 30, 1993

SPECIFIC CONDITIONS:

17. Sulfur, nitrogen content and lower heating value of the fuel being fired in the gas turbine shall also be recorded per fuel oil shipment. These records shall also be kept by the company for at least three years and made available for regulatory agency's inspection.

18. Compliance with the acceptable ambient concentrations for Be, Lead, and Hg emissions shall be demonstrated based on calculations certified by a Professional Engineer registered in Florida, using actual operating conditions. Determination of the ambient concentrations for chemical compounds shall be determined by Department approved dispersion modeling. This compliance determination shall be made available upon request.

Rule Requirements

19. This source shall comply with all applicable provisions of Chapter 403, Florida Statutes and Chapters 17-2 and 17-4, Florida Administrative Code.

20. This source shall comply with all requirements of 40 CFR 60, Subpart GG and F.A.C. Rule 17-2.660(2)(a), Standards of Performance for Stationary Gas Turbines.

21. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting requirements and regulations (F.A.C. Rule 17-2.210(1)).

22. This source shall comply with F.A.C. Rule 17-2.700, Stationary Point Source Emission Test Procedures.

23. Pursuant to F.A.C. Rule 17-2.210(2), Air Operating Permits, the permittee is required to submit annual reports on the actual operating rates and emissions from this facility. These reports shall include, but are not limited to the following: sulfur, nitrogen content and lower heating value of the fuel being fired, fuel usage, hours of operation, air emissions limits, etc. Annual reports shall be sent to the Department's Southwest District office. (oil only)

24. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

PERMITTEE:
City of Lakeland

Permit Number: AC 53-190437
Expiration Date: March 30, 1993

SPECIFIC CONDITIONS:

25. An application for an operation permit must be submitted to the Southwest District office at least 90 days prior to the expiration date of this construction permit or within 45 days after completion of compliance testing, whichever occurs first. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rule 17-4.220).

Issued this 25th day
of July, 1991

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Carol M. Browner

Carol M. Browner, Secretary

* Custom fuel
monitoring schedule
was added in the
12/18/95 amendment

TABLE 1
ALLOWABLE EMISSION LIMITS
Combined Cycle Combustion Turbine

Pollutant	Standards		Gas Turbine and HRSG ^(a)		Basis
	Gas Firing	No. 2 Fuel Oil Firing	Tons Per Year		
			Gas	Oil	
NO _x	25 ppm at 15% oxygen on a dry basis	42 ppmv at 15 percent oxygen on a dry basis	425	244	BACT
SO ₂	Natural gas as fuel	0.2 percent S by weight	8.6 2.6 per 12/18/95 Amendment	307	BACT
PM/PM ₁₀	0.006 lb/MMBtu	0.025 lb/MMBtu	22	22	BACT
VOC	-	-	9	6.7	BACT
CO	-	-	232	79	BACT
Mercury (Hg)	-	3.0 x 10 ⁻⁶ lbs/MMBtu	-	.003	Est. by Appl.
Lead (Pb)	-	2.8 x 10 ⁻⁵ lbs/MMBtu	-	0.03	" "
Beryllium (be)	-	2.5 x 10 ⁻⁶ lbs/MMBtu	-	.003	BACT
Sulfuric Acid Mist	Natural gas as fuel	Low sulfur content oil	0.8 3.2 x 10 ⁻³	9.13	BACT

(a) Emissions rates based on 100 percent capacity factor for natural gas and 1/3 capacity factor for oil firing.

Note: Changes per 12/18/95 Amendment

Best Available Control Technology (BACT) Determination
City of Lakeland-Charles Larsen Power Plant
Polk County

The applicant proposes to install a combustion turbine generator at their facility in Lakeland. The generator system will consist of a single nominal 80 megawatt (MW) combustion turbine, and a single heat recovery steam generator (HRSG) which will be used to repower an existing nominal 40 MW steam turbine.

The combustion turbine will be capable of both combined cycle and simple cycle operation. The applicant requested that the combustion turbine use either natural gas or distillate oil. The applicant has indicated the maximum annual tonnage of regulated air pollutants emitted from the facility based on 100 percent capacity and type of fuel fired at ISO conditions to be as follows:

<u>Pollutant</u>	<u>Potential Emissions (tons/yr)</u>		<u>PSD Significant Emission Rate (tons/yr)</u>
	<u>Natural Gas</u>	<u>Fuel Oil</u>	
NOx	425	732	40
SO ₂	2.6	920	40
PM	22.0	66	25
PM ₁₀	22.0	66	15
CO	232	237	100
VOC	9	20.0	40
H ₂ SO ₄	0.8	27.4	7
Be	0.0	0.01	0.0004
Hg	0.0	0.01	0.1
Pb	0.0	0.12	0.6

Florida Administrative Code Rule 17-2.500(2)(f)(3) requires a BACT review for all regulated pollutants emitted in an amount equal to or greater than the significant emission rates listed in the previous table.

Date of Receipt of a BACT Application

December 17, 1990

BACT Determination Requested by the Applicant

<u>Pollutant</u>	<u>Determination</u>
NOx	25 ppmvd @ 15% O ₂ (natural gas burning) 42 ppmvd @ 15% O ₂ (diesel oil firing)
SO ₂	Firing of natural gas or No. 2 fuel oil with a maximum sulfur content of 0.20%
PM and PM ₁₀	Combustion control
H ₂ SO ₄	Firing of No. 2 fuel oil with a maximum sulfur content of 0.20%.
Be	Firing of No. 2 fuel oil

BACT Determination Procedure

In accordance with Florida Administrative Code Chapter 17-2, Air Pollution, this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department, on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that in making the BACT determination the Department shall give consideration to:

- (a) Any Environmental Protection Agency determination of Best Available Control Technology pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 (Standards of Performance for New Stationary Sources) or 40 CFR Part 61 (National Emission Standards for Hazardous Air Pollutants).
- (b) All scientific, engineering, and technical material and other information available to the Department.
- (c) The emission limiting standards or BACT determinations of any other state.
- (d) The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine for the emission source in question the most stringent control available for a similar or identical source or source category. If it is shown that this level of control is technically or economically infeasible for the source in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

The air pollutant emissions from combined cycle power plants can be grouped into categories based upon what control equipment and techniques are available to control emissions from these facilities. Using this approach, the emissions can be classified as follows:

- o Combustion Products (Particulates and Heavy Metals). Controlled generally by good combustion of clean fuels.
- o Products of Incomplete Combustion (CO, VOC, Toxic Organic Compounds). Control is largely achieved by proper combustion techniques.
- o Acid Gases (SO_x, NO_x, HCl, F_l). Controlled generally by gaseous control devices.

Grouping the pollutants in this manner facilitates the BACT analysis because it enables the equipment available to control the type or group of pollutants emitted and the corresponding energy, economic, and environmental impacts to be examined on a common basis. Although all of the pollutants addressed in the BACT analysis may be subject to a specific emission limiting standard as a result of PSD review, the control of "nonregulated" air pollutants is considered in imposing a more stringent BACT limit on a "regulated" pollutant (i.e., particulates, sulfur dioxide, fluorides, sulfuric acid mist, etc.), if a reduction in "nonregulated" air pollutants can be directly attributed to the control device selected as BACT for the abatement of the "regulated" pollutants.

Combustion Products

The City of Lakeland's projected emissions of particulate matter, PM₁₀, and beryllium surpass the significant emission rates given in Florida Administrative Code Rule 17-2.500, Table 500-2 for No. 2 fuel oil firing only.

A PM/PM₁₀ emissions limitation of .025 lb/MMBtu for No. 2 fuel oil firing is reasonable as BACT for the Lakeland facility.

In general, the BACT/LAER Clearinghouse does not contain specific emission limits for beryllium from turbines. BACT for these heavy metals is typically represented by the level of particulate control. As this is the case, the emission factor of .025 lb/MMBtu for particulate matter PM₁₀ is judged to also represent BACT for beryllium.

Products of Incomplete Combustion

The emissions of carbon monoxide exceeds the significant level and therefore requires a BACT analysis.

At the proposed BACT NO_x emissions of 25/42 ppmvd (gas/oil) the turbine will be capable of maintaining CO emission rates of 25 ppmvd for either natural gas or No. 2 fuel oil. The applicant states that catalytic reduction could be installed at a levelized cost of 1.0 million/year to further reduce the CO emissions by 140 tons/year while burning natural gas (8760 hrs/yr). The incremental removal cost of using such control would be approximately \$7340/ton of CO removed. This cost exceeds that which is consistent with BACT and is not economically justifiable.

Acid Gases

The emissions of sulfur dioxide, nitrogen oxides, and sulfuric acid mist, represent a significant proportion of the total emissions and need to be controlled if deemed appropriate. Sulfur dioxide emissions from combustion turbines are directly related to the sulfur content of the fuel being combusted.

The applicant has proposed the use of natural gas and No. 2 fuel oil with a maximum sulfur content of 0.20% to control sulfur dioxide emissions. A review of the latest edition (1990) of the BACT/LAER Clearinghouse indicates that sulfur dioxide emissions from combustion turbines have been controlled by limiting fuel oil sulfur content to a range of 0.1 to 0.3%, with the average for the facilities listed being approximately 0.24 percent. As this is the case, the applicant's proposal to use No. 2 fuel oil with a maximum sulfur content of 0.20% is judged to represent BACT.

The applicant has stated that BACT for nitrogen oxides will be met by using wet (water or steam) injection necessary to limit emissions to 42 ppmvd or 25 ppmvd at 15% oxygen when burning No. 2 fuel oil or natural gas, respectively.

A review of the EPA's BACT/LAER Clearinghouse indicates that the lowest NO_x emission limit established to date for a combustion turbine is 4.5 ppmvd at 15% percent oxygen. This level of control was accomplished through the use of water injection and a selective catalytic reduction (SCR) system.

Selective catalytic reduction is a post-combustion method for control of NO_x emissions. The SCR process combines vaporized ammonia with NO_x in the presence of a catalyst to form nitrogen and water. The vaporized ammonia is injected into the exhaust gases prior to passage through the catalyst bed. The SCR process can achieve up to 90% reduction of NO_x with a new catalyst. As the catalyst ages, the maximum NO_x reduction will decrease to approximately 86 percent.

Given the applicant's proposed BACT level for nitrogen oxides control stated above, an evaluation can be made of the cost and associated benefit of using SCR as follows:

The applicant has indicated that the total levelized annual cost (operating plus amortized capital cost) to install SCR for natural gas firing at 100 percent capacity factor is \$2,190,000. Taking into consideration the total levelized annual cost, a cost/benefit analysis of using SCR can now be developed.

Based on the information supplied by the applicant, it is estimated that the maximum annual NOx emissions with wet injection from the Lakeland facility will be 425 tons/year. Assuming that SCR would reduce the NOx emissions by an additional 80-85%, the SCR would control at least 340 tons of NOx annually for natural gas firing. When this reduction is taken into consideration with the total levelized annual cost of \$2,190,000, the cost per ton of controlling NOx is \$6,441. This calculated cost is higher than has previously been approved as BACT.

Since SCR has been determined to be BACT for several combined cycle facilities, the EPA has clearly stated that there must be unique circumstances to consider the rejection of such control on the basis of economics.

In a recent letter from EPA Region IV to the Department regarding the permitting of a combined cycle facility (Tropicana Products, Inc.), the following statement was made:

"In order to reject a control option on the basis of economic considerations, the applicant must show why the costs associated with the control are significantly higher for this specific project than for other similar projects that have installed this control system or in general for controlling the pollutant."

A review of the combined cycle facilities in which SCR has been established as a BACT requirement indicates that the majority of these facilities are also intended to operate at high capacity factors. As this is the case, the proposed project is similar to other facilities in which SCR has been established as BACT, thereby supporting SCR as BACT for the proposed facility.

For fuel oil firing, the cost associated with controlling NOx emissions must take into account the potential operating problems that can occur with using SCR in the oil firing mode.

A concern associated with the use of SCR on combined cycle projects is the formation of ammonium bisulfate. For the SCR process, ammonium bisulfate can be formed due to the reaction of sulfur in the fuel and the ammonia injected. The ammonium bisulfate formed has a tendency to plug the tubes of the heat recovery steam generator leading to operational problems. As this is the case, SCR has been judged to be technically infeasible for oil firing in some previous BACT determinations.

The latest information available now indicates that SCR can be used for oil firing provided that adjustments are made in the ammonia to NOx injection ratio. For natural gas firing operation NOx emissions can be controlled with up to a 90 percent efficiency using a 1 to 1 or greater injection ratio. By lowering the injection ratio for oil firing, testing has indicated that NOx can be controlled with efficiencies ranging from 60 to 75 percent. When the injection ratio is lowered there is not a problem with ammonium bisulfate formation since essentially all of the ammonia is able to react with the nitrogen oxides present in the combustion gases.

Based on this strategy SCR has been both proposed and established as BACT for oil fired combined cycle facilities with NOx emission limits ranging from 11.7 to 25 ppmvd depending on the efficiency of control established.

Assuming that the lowered ammonia injection ratio strategy was used to control NOx emissions by 65%, the SCR would control 386 tons of NOx annually for oil/gas firing, assuming a maximum capacity factor of 33 percent on oil. When this reduction is taken into consideration with the total annual cost of \$2,190,000, the cost per ton of controlling NOx is \$5,674. This cost is lower than that determined for natural gas firing alone; however, it is still higher than what has been previously accepted as BACT.

Environmental Impact Analysis

The predominant environmental impacts associated with this proposal are related to the use of SCR for NOx control. The use of SCR results in emissions of ammonia, which may increase with increasing levels of NOx control. In addition, some catalysts may contain substances which are listed as hazardous waste, thereby creating an additional environmental burden. Although the use of SCR does have some environmental impacts, the disadvantages do not outweigh the benefit which would be provided by reducing nitrogen oxide emissions by 80 percent. The overwhelming benefit of NOx control by using SCR is substantiated by the fact that nearly one half of all BACT determinations have established SCR as the control measure for nitrogen oxides over the last five years.

In addition to the criteria pollutants, the impacts of toxic pollutants associated with the combustion of natural gas and No. 2 fuel oil have been evaluated. Beryllium for oil fired operation exceeds PSD significant levels. Other toxics are expected to be emitted in minimal amounts, with the total emissions combined to be less than 0.1 tons per year.

Although the emissions of the toxic pollutants could be controlled by particulate control devices such as a baghouse or scrubber, the amount of emission reductions would not warrant the added expense. As this is the case, the Department does not believe that the BACT determination would be affected by the emissions of the toxic pollutants associated with the firing of natural gas or No. 2 fuel oil.

Potentially Sensitive Concerns

With regard to controlling NOx emissions with SCR, the applicant has identified the following technical limitations:

1. SCR would reduce output of combustion turbines by one percent.
2. SCR could result in the release of unreacted quantities of ammonia to the atmosphere.
3. SCR would require handling of ammonia by plant operators. Since it is a hazardous material, there is a concern about safety and productivity of operators.
4. SCR results in contaminated catalyst from flue gas trace elements which could be considered hazardous. Safety of operators and disposal of spent catalyst is a concern.

BACT Determination by DER

NOx Control

A review of the permitting activities for combined cycle proposals across the nation indicates that SCR has been required and most recently proposed for installations with a variety of operating conditions (i.e., natural gas, fuel oil, capacity factors ranging from low to high). However, the cost and other concerns expressed by the applicant are valid.

The information that the applicant presented and Department calculations indicates that the incremental cost of controlling NOx (\$6,441/ton) for natural gas is high compared to other BACT determinations which require SCR. However, the cost of controlling NOx emissions for oil firing (\$4,600/ton) could be considered reasonable. Based on the information presented by the applicant and the studies conducted, the Department believes that the use of SCR for NOx control is not justifiable at this time as BACT. Therefore, the Department is willing to accept low NOx combustors with the firing of natural gas as the primary fuel. However, No. 2 distillate oil firing must be limited to 1/3 of the annual capacity factor. The applicant is also expected to design the facility to accommodate SCR should additional oil usage become necessary and SCR becomes a BACT requirement in the future.

SO₂ Control

For sulfur dioxide BACT is represented by firing natural gas or No. 2 fuel oil with an average sulfur content not to exceed 0.20 percent.

Other Emissions Control

The emission limitations for PM and PM₁₀, are based on previous BACT determinations for similar facilities, with the heavy metal beryllium being addressed through the particulate limitation and sulfuric acid mist being addressed through the sulfur dioxide limitation.

The emission limits for the City of Lakeland project are thereby established as follows:

Pollutant	Emission Limit	
	Natural Gas Firing	No. 2 Fuel Oil Firing
NOx	25 ppmvd @ 15% O ₂	42 ppmvd @ 15% O ₂ *
SO ₂	Natural gas as fuel	Sulfur content not to exceed 0.20%
CO	25 ppmvd @ 15% O ₂	25 ppmvd @ 15% O ₂
PM & PM ₁₀	0.006 lb/MMBtu	0.025 lb/MMBtu
Sulfuric Acid Mist	Emissions limited by natural gas and No. 2 fuel oil firing	
Beryllium	Emissions limited by natural gas and No. 2 fuel oil firing	

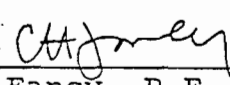
* No. 2 fuel oil usage limited to 1/3 of the total heat input on an annual basis.

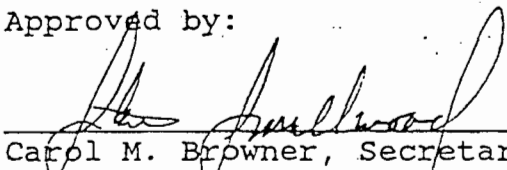
Details of the Analysis May be Obtained by Contacting:

Preston Lewis, P.E., BACT Coordinator
Department of Environmental Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended by:

Approved by:


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


Carol M. Browner, Secretary
Dept. of Environmental Regulation

Date

July 14, 1991

Date

July 26, 1991

Memorandum

Florida Department of Environmental Protection

TO: Clair Fancy

FROM: Marty Costello^{mc}

DATE: February 23, 1998

SUBJECT: DRAFT Permit Amendment No. AC53-190437, PSD-FL-166B
Charles Larsen Memorial Power Plant Unit 8-Combined Cycle Gas Turbine

Attached is a DRAFT letter that re-issues/amends the construction permit (which expired in 1993) for a combined cycle gas turbine located in Polk County near Lakeland.

The attached amendment makes the following changes to the permit:

- Deletes limits for mercury, lead, beryllium, and H₂SO₄ for this combustion turbine which is only authorized to fire natural gas and low sulfur fuel oil.
- Replaces the fuel oil usage limit with a curve of fuel oil usage (gals/hr) vs compressor inlet temperature.
- Clarifies the type of changes at the facility that would require the company to notify the department and apply for a modification.
- Removes annual limits (tpy) for CO.

Although not requested by the applicant, this amendment also adds the short term limit and annual test requirement for CO (25 ppm) that was established in the BACT but inadvertently left out of the original PSD permit.

This amendment does not grant a 30 day rolling average for the NO_x standard as requested by the applicant. The applicant failed to provide the requested analysis demonstrating that the current BACT standard would not be relaxed by the use of the 30 day rolling average.

I recommend your approval and signature.

CF/mc

attachments



Martin Costello, P.E.
New Source Review Section
Department Of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Farzie Shelton
ENVIRONMENTAL COORDINATOR, Ch E.

RECEIVED

January 21, 1998

JAN 26 1998

**BUREAU OF
AIR REGULATION**

**Re: Charles Larsen memorial Power Plant
Unit 8 - Combine Cycle Gas Turbine
Amendment to Permit Nos: PSDFL-166/AC53-190437**

1050003-005-AC

Dear Mr Costello:

We are in receipt of your communication in referenced to the above and the following are our response to your questions:

1. Q. The graph included with the letter did not indicate whether all the CEMS data were used or whether certain periods were excluded from the 30 day rolling averages.

A.. No valid analyzer data was excluded.

2. Q. There is no indication of whether the actual oxygen concentrations were used to correct the No_x data or whether constants were substituted during periods when oxygen concentrations were high.

A.. Actual oxygen concentrations were used to correct No_x. Therefore no constants were used. No_x was corrected to 15% O₂ by using this formula: No_x ppm * ((20.9-15)/(20.9- O₂))

3. Q. It is not clear how an operating day was defined for these 30 day rolling averages, i.e., were only days consisting of 24 hours of continuous operation included in the calculations, or, if only 30 minutes of operation in a day were logged, was this considered an operating day for purposes of the 30 day rolling average.

A. An "operating day" was considered any day that the unit was in operation not restricted to any limited time period i.e. 24-hours operation.

4. Q. During some startups No_x emissions exceeded 25ppm while other startups occurred without exceeding 25 ppm. Please explain

A. Operation of any boiler during Start up period is a very unstable condition. Additionally, startup can take place with different operating conditions i.e. cold startups, warm startups, and hot startups. In each case the fuel air mixture will react slightly differently until the Unit heats up to operating temperatures. In our operational procedures we try to minimize these affects as much as possible. Please also note that, for all gas turbines, water injection for No_x control can not be utilized until the unit achieve certain load as water injection on lower load causes equipment damage. Unit No. 8 water injection does not commence at loads below 25 MW of generation.

In respect to the earlier data, we would like to bring to your attention that this unit has an automatic absolute humidity monitor which adjust the water injection rate taking into consideration the humidity in the inlet air. Please also note that the performance test demonstrating compliance with the NSPS

Martin Costello, P.E.
New Source Review Section
Department Of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

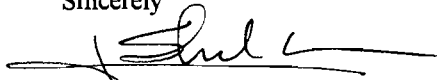
January 21, 1998

Standards was performed with this control equipment in place. However, we had been experiencing malfunction with this control equipment (causing excessive water injection) during the periods indicated by low No_x emission. This control equipment has now been repaired.

We hope the information contained in this letter would satisfy the Department's requirements.

If you should have any questions, please do not hesitate to contact me.

Sincerely

A handwritten signature in black ink, appearing to read 'Farzie Shelton', with a horizontal line extending to the right.

Farzie Shelton
Manager of Permitting & Compliance
Production

cc: M. Costello, BAR



Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

October 7, 1997

Farzie Shelton, Environmental Coordinator
Lakeland Electric and Water
501 East Lemon Street
Lakeland, FL 33801-5050

RE: Charles Larsen Memorial Power Plant
Unit 8--Combined Cycle Gas Turbine
Amendment to Permit Nos: PSD-FL-166/AC53-190437

Dear Ms. Shelton:

The Department has evaluated your recent letter which contained calculations of 30 day averages of NO_x emissions from the CEMS data. The graph included with the letter did not indicate whether all the CEMS data were used or whether certain periods were excluded from the 30 day rolling averages. Also, there is no indication of whether the actual oxygen concentrations were used to correct the NO_x data or whether constants were substituted during periods when oxygen concentrations were high. Lastly, it is not clear how an operating day was defined for these 30 day rolling averages, i.e., were only days consisting of 24 hours of continuous operation included in the calculations, or, if only 30 minutes of operation in a day were logged, was this considered an operating day for purposes of the 30 day rolling average? These questions should be answered to help the Department further analyze your request for a 30 day rolling average.

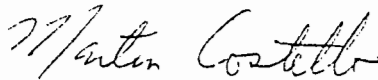
The acid rain CEMS data was used by the Department to calculate long term rolling averages for several quarters, including the 2nd quarter of 1997 as you graphed. Our data shows that during some startups NO_x emissions exceeded 25 ppm while other startups occurred without exceeding 25 ppm. Please explain why excess emissions occur during some startups. When we included all data, including startups, shutdowns, and malfunctions, the 30 day rolling averages all fell below 25 ppm and most of the averages were closer to 20 ppm. This suggests, that with some operational improvements, mainly during startups, an equivalent BACT standard for NO_x based on a 30 day rolling average including startup/shutdown/malfunctions would be close to 20 ppm.

Farzie Shelton
October 7, 1997
page 2 of 2

The current construction permit (referenced above) specifies a BACT limit of 25 ppmvd @ 15% O₂ and compliance demonstration by Method 20. Because the stringency of the original BACT must be preserved, the 30 day rolling average emission limit must be reduced to a level which equates to the original limit.

If you have questions please contact me at (904) 488-1344.

Sincerely



Martin Costello, P.E.
New Source Review Section

cc: Ed Svec

MC/mc

P 265 659 465

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to Ganzie Shelton	
Street & Number Lakeland Electric	
Post Office, State, & ZIP Code Lakeland, FL	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date CLMPP 10-8-97 Unit # 8 PSD FI-166	

PS Form 3800, April 1995

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Ms. Ganzie Shelton, EC.
Lakeland Electric & Water
501 E Lenoir St.
Lakeland, FL

33801-5050

5. Received By: (Print Name)

6. Signature: (Addressee or Agent)

X Brenna Brenna

4a. Article Number

P 265 659 465

4b. Service Type

- | | |
|---|---|
| <input type="checkbox"/> Registered | <input checked="" type="checkbox"/> Certified |
| <input type="checkbox"/> Express Mail | <input type="checkbox"/> Insured |
| <input type="checkbox"/> Return Receipt for Merchandise | <input type="checkbox"/> COD |

7. Date of Delivery

10-14-97

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1994

Domestic Return Receipt

Thank you for using Return Receipt Service.



Excellence Is Our Goal, Service Is Our Job
September 11, 1997

Farzie Shelton
ENVIRONMENTAL COORDINATOR, Ch E.

Marty Costello
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 5505
Tallahassee, FL 32301

RE: Lakeland Electric and Water Utilities
Charles Larsen Memorial Power Plant
Unit No. 8--Combined Cycle Gas Turbine System
Permit Nos. PSD-FL-166 and AC53-190437
Request for Permit Revision

Dear Marty:

Pursuant to our meeting of July 25, 1997 and our letter of July 27, 1997, we are writing to provide the Department with the 30 day rolling Nox PPM data. The enclosed graph was constructed from the data obtained from our Part 75 Nox monitor for the second quarter of 1997. As you will note, except for times that the unit is in a shutdown or startup mode, the average PPM emission are between 25-22 PPM Nox. Therefore, we feel confident that our request for a 30 day rolling average at 25 PPM is warranted and justified. We would appreciate your cooperation in this matter. Additionally, since the time limit for Agency decision on this permit will be expiring on September 19, 1997, in order to facilitate more time for further review of requested NOX limit we are submitting to you a signed "Waiver Of 90 Day Time Limit under Sections 120.60(2) and 403.087 Florida Statutes" extending the time limit to and including October 28, 1997.

If you should have any questions, please contact me at (941) 499-6603, or E-Mail "fshel@citymail.lakeland.net".

Sincerely

Farzie Shelton
Manager of Permitting & Compliance
Production Division

Enc.

cc: Al Linero, DEP
Angela Morrison, HGSS
Ken Kosky, Golders Associate

RECEIVED

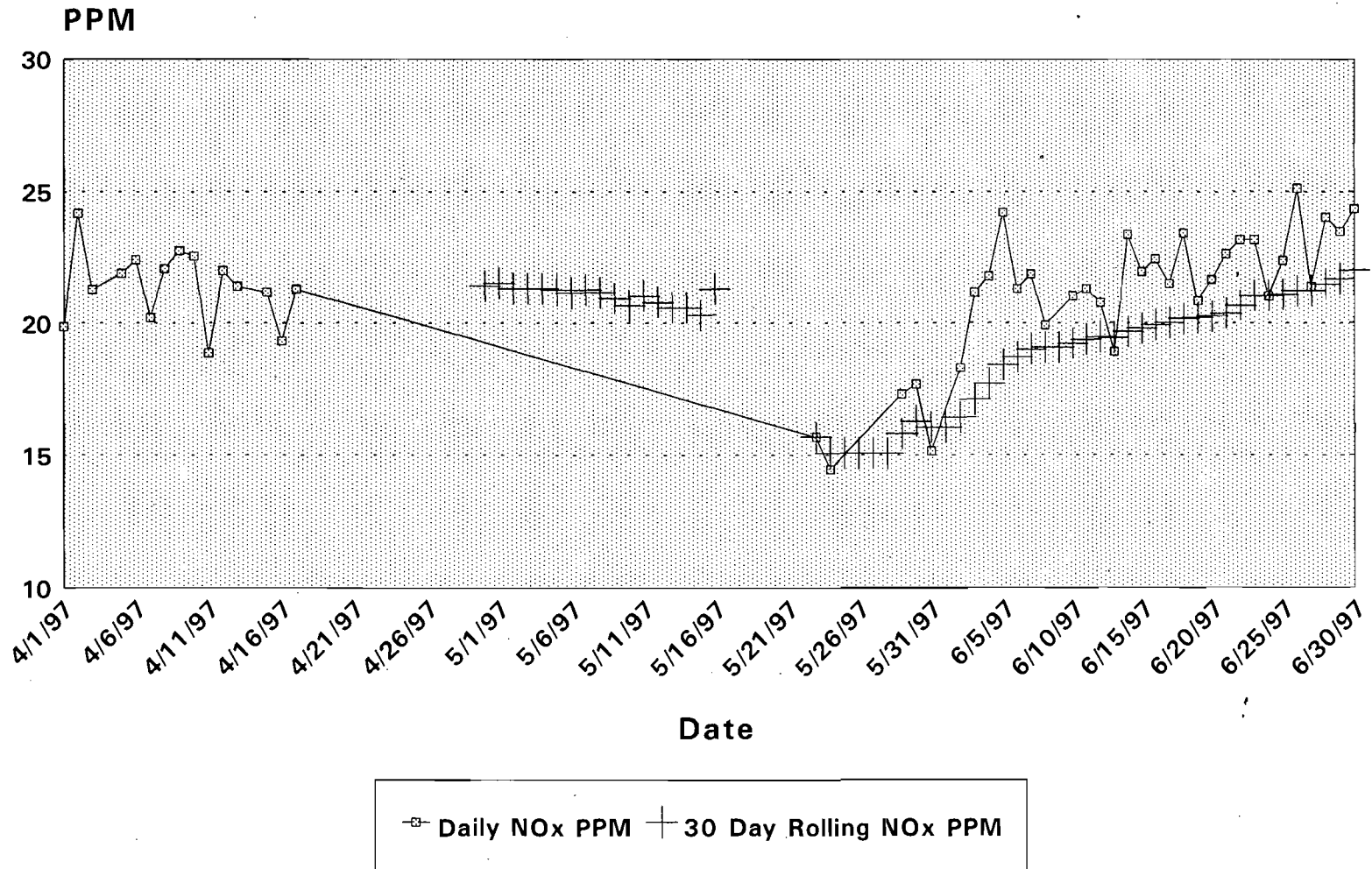
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BUREAU OF
AIR REGULATION

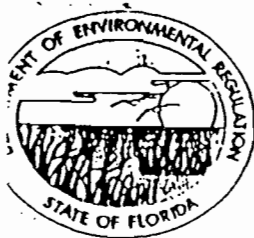
Unit 8

NO_x PPM

1997 CY 2nd Quarter



Standardized to 15% O₂



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

WAIVER OF 90 DAY TIME LIMIT UNDER SECTIONS 120.60(2) and 403.0876, FLORIDA STATUTES

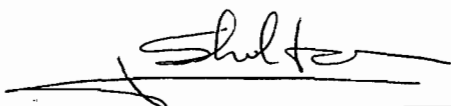
License (Permit, Certification) Application No. 1050003-015-AC

Applicant's Name: Lakeland Electric & Water Utilities

With regard to the above referenced application, the applicant hereby with full knowledge and understanding of applicant's rights under Sections 120.60(2) and 403.0876, Florida Statutes, waives the right to have the application approved or denied by the State of Florida Department of Environmental Regulation within the 90 day time period prescribed by law. Said waiver is made freely and voluntarily by the applicant, with full knowledge, and without any pressure or coercion by anyone employed by the State of Florida Department of Environmental Regulation.

This waiver shall expire on the 28th day of October, 1997.

The undersigned is authorized to make this waiver on behalf of the applicant.



Signature

Farzie Shelton
NAME (PLEASE TYPE OR PRINT)

Revised April, 1990

RECEIVED**JUL 29 1997****BUREAU OF
AIR REGULATION**

July 22, 1997

Marty Costello
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 5505
Tallahassee, FL 32301

RE: Lakeland Electric and Water Utilities
Charles Larsen Memorial Power Plant
Unit No. 8--Combined Cycle Gas Turbine System
Permit Nos. PSD-FL-166 and AC53-190437
Request for Permit Revision

Dear Marty:

We thank you, Al and Pat for the opportunity of meeting with us yesterday in your offices in reference to the above permit revision request. It was a mutually beneficial meeting and we are looking forward to receive a proposed permit revision from you in due course. However, as the 90 day time limit will be expiring on Friday July 25, 1997, in order to facilitate more time for further review of requested NOX limit we are submitting to you a signed "Waiver Of 90 Day Time Limit under Sections 120.60(2) and 403.087 Florida Statutes" extending the time limit to and including September 19, 1997.

Lakeland would endeavor to submit to you data from this unit's CEM depicting present 30 day rolling average for NOX in support of our application. Additionally Lakeland has the following comment in respect of draft revised permit which you graciously supplied to us:

- In carefully reviewing the draft revised Table 1 from the PSD permit, Lakeland noticed that the carbon monoxide emission limits in parts per million were inconsistent with the volatile organic compound (VOC) emission limits in tons per year. A further review indicated that PSD was not triggered for VOC emissions, therefore a Best Available Control Technology determination was not made for VOC emissions. Since the only limits are in tons per year, there are no testing requirements, PSD/BACT was not triggered, and there is no other regulatory basis for the VOC emission limits, Lakeland respectfully requests that the VOC limits be deleted from the revised Table 1.

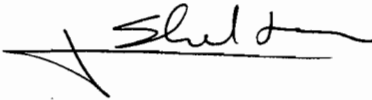
July 22, 1997

Marty Costello
Bureau of Air Regulation
Florida Department of Environmental Protection

- The draft Notice of Intent and draft public notice for the revisions to the PSD permit state that a "revised" draft will be issued if significant changes are made. While this may be appropriate for draft Title V permits, it is not appropriate for PSD permits. The Department's Rule 62-103.150(1)(a)5, F.A.C., states that a renote is necessary only if the activity or project is "substantially modified by the applicant and the Department proposes to issue the permit with the modification." "Substantially modified" means a major relocation or modification of the project that is reasonably expected to cause new or greater adverse environmental impacts upon the substantial interests of a person other than the applicant. The rules for construction permits do not require "revised" drafts to be issued and require renotes to be published only in these limited circumstances. Lakeland therefore requests that the draft Notice of Intent and draft public notice be revised to delete the sentence referencing issuance of a "revised draft" permit and another public notice.

If you should have any questions, please contact me at (941) 499-6603, or E-Mail "fshel@citymail.lakeland.net".

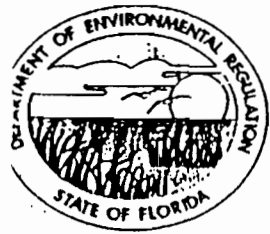
Sincerely



Farzie Shelton

Enc.

cc: Al Linero, DEP
Angela Morrison, HGSS
Ken Kosky, Golders Associate



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

WAIVER OF 90 DAY TIME LIMIT UNDER SECTIONS 120.60(2) and 403.0876, FLORIDA STATUTES

License (Permit, Certification) Application No. 1050003-015-AC

Applicant's Name: Lakeland Electric & Water Utilities

With regard to the above referenced application, the applicant hereby with full knowledge and understanding of applicant's rights under Sections 120.60(2) and 403.0876, Florida Statutes, waives the right to have the application approved or denied by the State of Florida Department of Environmental Regulation within the 90 day time period prescribed by law. Said waiver is made freely and voluntarily by the applicant, with full knowledge, and without any pressure or coercion by anyone employed by the State of Florida Department of Environmental Regulation.

This waiver shall expire on the 19 day of September, 1997.

The undersigned is authorized to make this waiver on behalf of the applicant.

Farzie Shelton
Signature

FARZIE SHELTON
NAME (PLEASE TYPE OR PRINT)

Revised April, 1990



RECEIVED

MAY 27 1997

**BUREAU OF
AIR REGULATION**

May 13, 1997

Martin Costello, P.E.
New Source Review Section
Division of Air Resources Management
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399

**RE: Charles Larsen Memorial Power Plant
Unit 8--Combined Cycle Gas Turbine
Permit No. PSD-FL-166/AC53-190437
Response to Request for Additional Information**

Dear Mr. Costello:

Lakeland Electric and Water Utilities (Lakeland) received your letter dated April 18, 1997, requesting additional information regarding our March 14 request to revise the above-referenced permit. Because Lakeland would like to resolve these pending construction permit revision issues for the Charles Larsen Memorial Power Plant (Larsen Plant) before the Title V permit becomes effective, we would like to meet with you and your staff to further discuss Lakeland's request within the next several weeks. Once the construction permit revision issues are resolved, the Title V permit can be amended accordingly. The information requested by the Department follows.

Item C - Maximum Quantity of Fuel Oil: The maximum annual quantity of fuel oil will vary from year to year and is not just a function of compressor inlet temperature and ambient conditions. As the backup fuel to natural gas, fuel oil is not used on a regular basis to establish relationships. Additionally, with year to year variability establishing a maximum fuel usage would be inappropriate. For clarification, Lakeland requests that the 8,190 gallons/hr in Specific Condition No. 6 be replaced with the curve provided with our March 14th request. The 23,914,800 gallons/year would remain as a specific condition.

Item D - Use of Method 5B: After further review, Lakeland concurs with the Department and our March 14th request to use Method 5B is rescinded.

Item E - Carbon Monoxide Limit: While Lakeland agrees that the Department's Best Available Control Technology (BACT) determination for carbon monoxide was based on an

Martin Costello, P.E.
Division of Air Resources Management
Department of Environmental Protection
May 13, 1997
Page 2

emissions rate of 25 parts per million (ppm), the construction permit appropriately did *not* include this basis as an emissions *limit*. Rather, the construction permit included only an annual, tons-per-year limit. Because add-on pollution control equipment was found to be "not economically justifiable," BACT was determined to be proper combustion techniques. An initial compliance test was performed when Unit 8 first began operations, demonstrating that the unit was properly designed to ensure good combustion. Because this test assured that the unit could meet the annual emissions limit and no subsequent annual testing was required, Lakeland again requests that the Department delete the ton-per-year limitation for carbon monoxide. Lakeland knows of no change in circumstances to cause annual testing requirements to be imposed, and requests that, at a minimum, no additional testing requirements be included in the revised permit.

Lakeland very much appreciates the Department's willingness to remove the mass emission limitations for sulfuric acid mist, lead, mercury, and beryllium and to instead simply clarify that these emissions are limited by restricting the fuels that may be used to natural gas and low sulfur No. 2 fuel oil.

Item F - (1) Heat Input Averaging Period: Because Lakeland is requesting that the Department specify thirty-day rolling averaging periods for the nitrogen oxides emission limits, a thirty-day averaging period would also be appropriate for the heat input limit. Lakeland agrees with the Department's statement that heat input must be determined on an hourly basis; however, compliance with the heat input limit should be consistent with the averaging periods for the emission limits. In addition, the heat content of fuels fluctuates somewhat and a calculation of heat input based on fuel flow and the heating value of the fuel being combusted cannot be done instantaneously. At a minimum, a three-hour averaging period would be appropriate because of the time needed to make the calculations, although Lakeland believes that a thirty-day averaging period is justifiable and would be consistent with the requested averaging period for nitrogen oxide emissions.

Item F - (2) Nitrogen Oxides Averaging Period: Lakeland requests that the Department specify thirty-day rolling averaging periods for the nitrogen oxides emissions limits for Unit 8, consistent with Section 403.0872(13), Florida Statutes. While Lakeland understands that the Department has clarified that this statutory provision applies to existing fossil-fuel-fired steam generators, the statutory language is not limited to a particular type of electrical generating unit and

applies to combustion turbines as well as steam generators--and applies to existing as well as new units. None the less, Unit 8 is a combined cycle unit, a portion of which is an existing steam generating unit (formally Unit 5). The steam cycle for Unit 5, which had a maximum heat input of 321 mmBtu for a nominal 25 MW of generation, was used with a new combustion turbine and heat recovery steam generator (HRSG) to form Unit 8. Thus, Unit 8 is both a steam generating unit a portion had been existing since 1956. EPA has guidance indicating that combined cycle units would, in part, be classified as steam generating units (EPA Memorandum February 2, 1993, Edward Lillis, Chief Permits Programs Branch, OAQPS.)_ While the statutory language is careful to not supersede any requirements of New Source Performance Standards (NSPS), it does not limit its applicability to Best Available Control Technology (BACT) standards. Because BACT limits are often, as in the case of Larsen Unit 8, so much lower than the NSPS standards, the thirty-day rolling average could easily apply to the BACT standard without affecting compliance with a three-hour NSPS standard.

Further, the BACT analysis should not be affected by the establishment of a 30-day rolling average, since the cost-per-ton analysis is based on long-term rather than short-term emission rates. The total tons removed through selective catalytic reduction (SCR) compared to the total tons removed through use of wet injection remains the same--in excess of \$6,400. This amount continues to be considered too expensive and does not justify the use of SCR. The 30-day rolling average will allow for slight variations in the nitrogen oxides concentrations, while assuring that, on average, the emissions are within the appropriate range.

The thirty-day rolling averaging period should also not be a concern from an ambient air quality perspective. As you are aware, the ambient air quality standard for nitrogen oxides is an annual average only, and while nitrogen oxides are a precursor to ozone, ozone formation is not a short-term phenomenon. A longer averaging period for nitrogen oxides should therefore not affect the ambient air quality.

Because the statute seems to require a thirty-day rolling average period when acid rain monitors are installed on a unit, ambient air quality would not be adversely impacted, and the BACT determination should not be affected, Lakeland respectfully requests that the Department specify thirty-day rolling averaging periods for the Unit 8 nitrogen oxide emission limits.

Martin Costello, P.E.
Division of Air Resources Management
Department of Environmental Protection
May 13, 1997
Page 4


Thank you for considering this additional information. Again, we would like to schedule a meeting with you and your staff. I will contact you within the next two to three weeks to schedule a meeting to further discuss the issues addressed in this letter. If you have any questions in the meantime, please call me at 941-499-6603.

Sincerely,

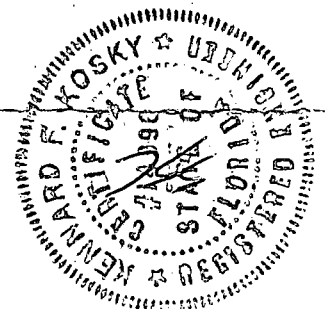


Farzie Shelton
Environmental Coordinator

Signed and Sealed by:



Kennard Kosky, P.E.
Golder and Associates Inc.



cc: Howard Rhodes, DEP
Clair Fancy, DEP
Pat Comer, DEP OGC
Scott Sheplak, DEP



Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

April 18, 1997

Farzie Shelton, Environmental Coordinator
Lakeland Electric and Water
501 East Lemon Street
Lakeland, FL 33801-5050

RE: Charles Larsen Memorial Power Plant
Unit 8--Combined Cycle Gas Turbine
Permit Nos: PSD-FL-166/AC53-190437

Dear Ms Shelton:

The Department has reviewed your recent request for changes to the above referenced permit. Additional information, as discussed below, is needed before the Department can act on this request.

Item C Based on the curve (oil input Vs compressor inlet temperature) and ambient conditions at the facility from the past year, what is the maximum annual quantity of fuel oil required.

Item D Explain the rationale for requesting Method 5B. Pursuant to Method 5B Section 1, the use of this test method requires EPA approval unless specified in the applicable NSPS subpart. Has EPA approved Method 5B for Unit 8?

Item E Unit 8 has no control device for sulfuric acid mist therefore emissions are only limited by the fuel sulfur content. The BACT specified no emission limit but rather limited the available fuels to natural gas or No. 2 fuel oil with an average sulfur content not exceeding 0.2 percent. Other pollutants such as lead, mercury, and beryllium are also a function of the fuel quality. Each of these pollutants can be limited by restricting the fuels to natural gas or low sulfur No. 2 fuel oil. Carbon monoxide emissions by contrast are not only a function of clean fuels usage, but are also affected by the operation of the NO_x

control system. The BACT specifies a 25 ppmvd @ 15% oxygen. We propose to incorporate the 25 ppm BACT limit with a requirement for annual CO testing, while removing limits and testing for lead, mercury, beryllium, and sulfuric acid mist. Please provide comments on this proposed action.

Item F The averaging time for heat input rate is implied in the limit which is in terms of MMBtu/hr. These units indicate an hourly average. Heat input must be calculated on an hourly basis since compliance testing is based on three 1 hour runs while the unit is operating at capacity, i.e., the maximum heat input. What is the rationale for a 30 day rolling average for heat input?

Your request for a 24 hour rolling average for NO_x constitutes a potential relaxation of the BACT emission standard as described the following paragraphs. In order to proceed with our review of proposed amendments, it is necessary for you to submit an evaluation of a NO_x emission limit for the longer averaging time which is equivalent to the existing BACT limit. This analysis shall be sealed by a Professional Engineer licensed in the State of Florida.

Rule 17-296.405, F.A.C., entitled Fossil Fuel Steam Generators with More than 250 Million Btu per Hour Heat Input, was amended to clarify the applicability of Section 403.0872(13), Florida Statutes. The longer averaging time provided in the statute was narrowly applied to the NO_x standards in Rule 17-296.405(d) for **existing Fossil Fuel Steam Generators with More than 250 Million Btu per Hour Heat Input**. Owners of existing fossil fuel steam generators with more than 250 Million Btu per hour heat input, that are subject to continuous monitoring requirements under the Acid Rain Program, must determine compliance with nitrogen oxide emission limits based on a 30-day rolling average.

Since Rule 17-296.405, F.A.C. is not applicable to unit 8, the requirement to determine compliance based on a 30-day rolling average is not applicable. The Department is willing to evaluate an averaging time longer than the

Permit Nos: PSD-FL-166/AC53-190437

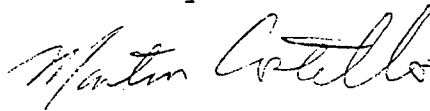
Page 3

current one as long as the numerical emission limit is adjusted downward as discussed below. Subpart GG of the NSPS rules and PSD apply to unit 8. The current BACT limit (25 ppm @ 15% oxygen firing natural gas) established a 1 hour averaging time ~~-(three 1-hour runs)-~~. Extension of the averaging time as proposed affords the opportunity to operate unit 8 in excess of the current BACT emission limit for short periods as long as low load operation emission rates are sufficient to average below the standard on a 24 hour rolling average. This constitutes a relaxation of the original BACT for NO_x. Since the stringency of the original BACT must be preserved, the new emission limit must be reduced to a level which equates to the original (shorter averaging time) limit.

Due to the technical nature of some of the items above, we request that your reply be reviewed and sealed by a professional engineer. It is the Department's practice that applications be submitted on the required forms and sealed in accordance with the instructions.

Please contact me at (904) 488-1344 if you have questions on these matters.

Sincerely



Martin Costello, P.E.
New Source Review Section

cc: Ed Svec



Excellence Is Our Goal, Service Is Our Job
March 14, 1997

Farzie Shelton
ENVIRONMENTAL COORDINATOR, Ch E.

Clair H. Fancy, P.E.
Chief, Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 5505
Tallahassee, FL 32301

RECEIVED

MAR 20 1997

**BUREAU OF
AIR REGULATION**

RE: Lakeland Electric and Water Utilities
Charles Larsen Memorial Power Plant
Unit No. 8--Combined Cycle Gas Turbine System
Permit Nos. PSD-FL-166 and AC53-190437
Request for Permit Revision

Dear Mr. Fancy:

During the Title V permitting process for the Charles Larsen Memorial Power Plant, Lakeland Electric and Water Utilities has identified several construction permit conditions for Unit No. 8 that should be revised. While some of these changes have been incorporated into the draft Title V permit that was issued for the facility on October 23, 1996, Department representatives have indicated that other changes that were requested as part of the Title V process must first be made in the construction permit. Lakeland believes that the changes being requested are appropriate and supported by the Department's air regulations. The specific changes requested are as follows:

A. **Limits Based on Draft Ambient Reference Concentrations.** Specific Condition 2 of the construction permit for Unit No. 8 establishes emission limits for lead, mercury, and beryllium based on Florida's draft Ambient Reference Concentrations. Lakeland requests that this condition be deleted in its entirety because there is no basis under state or federal law for this requirement. The draft Ambient Reference Concentrations are established only in an unpromulgated rule, which has not been properly adopted under Chapter 120, Florida Statutes. As an unpromulgated rule, the policy should not be used as the basis to establish permit limits. Further, any concern regarding the ambient concentrations of these pollutants should have been adequately addressed during the construction permitting process and by the modeling that was submitted with the PSD permit application. Deletion of these limits would also be consistent with recent Department guidance. Unit No. 8 is permitted to burn primarily natural gas with low sulfur No. 2 distillate fuel oil (sulfur content not to exceed 0.20 percent) as a backup, and a Department guidance memorandum dated May 19, 1995, indicates that concentrations of metals such as lead, mercury, and beryllium in low sulfur distillate oil and natural gas are so low as to be non-detectable. The guidance also states that emission limits for these metals are unnecessary. (Department Guidance Memorandum DARM-PER/GEN-18.) Because the quantities of these pollutants are so low and ambient modeling has already been performed indicating that the emissions from Unit No. 8 would not exceed any of the Department's draft Ambient Reference Concentrations, Lakeland requests that Specific Condition 2 (and corresponding Condition 18) be deleted.

Clair H. Fancy, P.E.
Chief, Bureau of Air Regulation
Florida Department of Environmental Protection
March 14, 1997
Page 2

B. Mercury, Lead, and Beryllium Mass Emission Limits. Lakeland also requests deletion of the mercury, lead, and beryllium mass emission limits established in Table 1. The Department's May 19, 1995 guidance referenced above regarding metal concentrations in low sulfur distillate fuel oil and natural gas states that concentrations of metals such as lead, mercury, and beryllium are so low as to be non-detectable, and states that emission limits for metals such as these are unnecessary. (Department Guidance Memorandum DARM-PER/GEN-18.) In addition, the Department's Best Available Control Technology determination for beryllium emissions from Unit No. 8 did not include a numeric emission limit; rather, it stated only that emissions were limited by natural gas and No. 2 fuel oil firing. Best Available Control Technology determinations were apparently not required for lead or mercury emissions. The Department's guidance clearly indicates that mass emission limitations for these metals are unnecessary and further indicates that, to the extent the guidance conflicts with an existing permit, the existing permit should be revised. The Department did not include the lead, mercury, or beryllium emission limits from Table 1 in the draft Title V permit issued on October 23, 1996, and Lakeland requests that the construction permit for Unit No. 8 be revised to be consistent with the Title V permit by deleting these unnecessary emission limits.

C. Limitations on Fuel Oil Quantity. Lakeland requests revision of the specific limitations on the total quantities of fuel oil that may be fired under Condition No. 6. These quantity limitations for fuel oil are based on the *average* heating value of distillate oil, and the actual fuel oil used in this unit would likely vary from the average, especially on a short-term basis. As the heat input into this unit is based on a curve of temperature versus heat input, it would be neither practical nor correct to use an average fuel oil quantity limitation. Furthermore, it is more limiting than necessary to subject this Unit to an annual maximum fuel oil limitation usage based on that average. As demonstrated in the attached curve, different quantities of fuel can be used while still meeting the heat input limits of the unit, based on the ambient temperature and varying heating values of the fuel. The use of the curves should more accurately reflect appropriate limitations on the quantities of fuel oil that may be used to ensure compliance with the maximum heat input limits for this unit. Lakeland therefore requests that the current limitations on the quantities of fuel oil that may be used in Condition No. 6 be replaced with the attached curves.

D. PM Compliance Test Method. Lakeland requests that Method 5B be included as an acceptable method for particulate matter compliance testing under Specific Condition 9.a. This test method is currently authorized in the operation permit for this unit, and has been included in the draft Title V permit as well. Lakeland requests that the construction permit be revised to specifically recognize the authority to use Method 5B, to be consistent with the current operation permit and draft Title V permit.

Clair H. Fancy, P.E.
Chief, Bureau of Air Regulation
Florida Department of Environmental Protection
March 14, 1997
Page 3

E. Sulfuric Acid Mist and Carbon Monoxide Emission Limitations. While Table 1 of the permit states that the annual sulfuric acid mist and carbon monoxide emissions are limited, there are no corresponding short-term limits or annual compliance testing requirements. The draft Title V permit issued by the Department does not include these annual limits, and Lakeland requests that they be deleted from the construction permit as well. Best available control technology for this unit is the use of natural gas as the primary fuel with restricted use of low sulfur diesel oil as the alternative fuel, and good combustion practices. It is not necessary to establish emission limitations for these pollutants, and Lakeland therefore requests that the annual limitations identified in Table 1 for sulfuric acid mist and carbon monoxide be deleted.

F. Averaging Periods for Particulate Matter Nitrogen Oxides, and Heat Input Rate. The U.S. Environmental Protection Agency recently finalized what is called the "Any Credible Evidence" rule, which provides that data from test methods other than the compliance methods identified in permits can be used as evidence in enforcement actions. (62 Fed. Reg.8314, Feb. 24, 1997). Lakeland understands that the federal rule is not yet effective and the Florida Department of Environmental Protection has not yet formally adopted the new rule, it may nevertheless be appropriate to make certain clarifications at this time since the permit is in the process of being revised. While the methods for demonstrating compliance have been identified in the permit, clarification regarding the averaging times applicable to certain emission limits would also be appropriate.

Particulate Matter--The particulate matter emission limits in Table 1 should be identified as being based on a three-hour average, since the compliance test methods (Method 5 and 17 stack tests) recognizes the average of three 1-hour runs.

Nitrogen Oxides--Based on Section 403.0872(13)(b) of the Florida Statutes, if a continuous emissions monitor required under the acid rain program (40 CFR Part 75) is used to demonstrate compliance with a nitrogen oxides (NOx) limit, compliance is to be based on a 24-hour rolling average. This unit is subject to the acid rain program requirements and has installed and certified a continuous emissions monitor for NOx emissions under 40 CFR Part 75. Lakeland hereby requests that Specific Condition 9.b. of the permit be revised to identify the CEM as the method of demonstrating compliance with the permit limits of 25 and 42 ppm for natural gas and fuel oil, respectively, in lieu of a Method 20 stack test. Lakeland further requests, based on Section 403.0872(13)(b), Florida Statutes, that the permit be revised to clarify that compliance with the NOx limits in Table 1 is to be based on a 24-hour rolling average.

Heat Input--Specific Condition 6 provides that the maximum heat input is not to exceed 1055 mmBtu/hour while firing gas and 1040 mmBtu/hour while firing No. 2 fuel oil. Lakeland requests that this condition be revised to clarify that the heat input rate is to be determined

Clair H. Fancy, P.E.
Chief, Bureau of Air Regulation
Florida Department of Environmental Protection
March 14, 1997
Page 4

based on the heating value of the fuel from vendor data and the quantity of fuel used. Lakeland also requests that the averaging time for the limits be specified as a 30-day rolling average.

G. Notice of Changes--Lakeland requests that Specific Condition 7 be deleted from the permit as unnecessary. This condition requires notice of "any changes" in the method of operation, equipment, or operating hours. Changes in the method of operation should require a notice only if the definition of "modification" is triggered, and the Department's rules address the notice and permitting requirements for modifications. There should be no requirement to notify the Department of changes in equipment unless it is a non-routine, non-replacement change that results in an increase in emissions, or is inconsistent with information previously provided to the Department. In addition, the unit is allowed to operate continuously, up to 8,760 hours per year, so it is unnecessary to provide notice the Department as to fluctuations in hours of operation, other than as part of the annual air operating report. For these reasons, Lakeland requests that Condition 7 be deleted in its entirety.

Thank you for your consideration of this request. Three copies of this letter are enclosed along with a \$250 processing fee pursuant to Rule 62-4.050(4)(r)5, F.A.C. If you have any questions or need any additional information, please contact Farzie Shelton at 941-499-6603.

Sincerely,

A handwritten signature in black ink, appearing to read 'Shelton', with a horizontal line drawn through the middle of the signature.

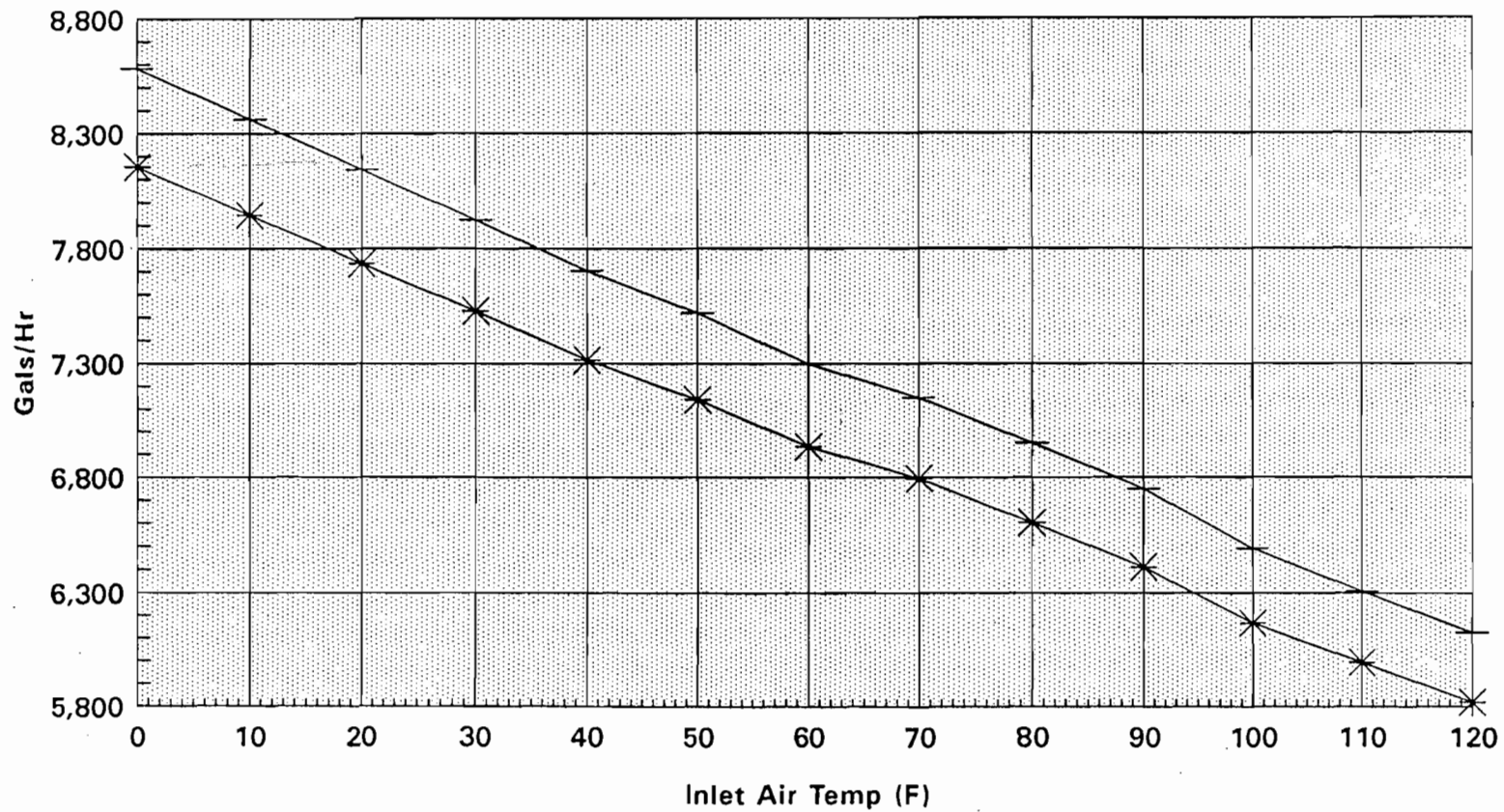
Farzie Shelton
Environmental Division

Enclosures

cc: Howard L. Rhodes, DEP
John Brown, DEP
Pat Comer, DEP OGC
Scott M. Sheplak, DEP
Edward Svec, DEP
Al Linero, DEP
Angela Morrison, HGSS

Unit 8

Oil Input vs Compressor Inlet Temperature



+ Design Input #2 Oil * 95% Design Input #2 Oil

Peak Mode

Using LHV of #2 Oil

2/25/97

Memorandum

Florida Department of
Environmental Protection

DARM-PER/GEN-18
REVISED

TO: District Air Program Administrators
County Air Program Administrators
BAR Air Permitting Staff

FROM: Howard L. Rhodes, Director *HLR*
Division of Air Resources Management

DATE: May 19, 1995

SUBJECT: Guidance on Testing Requirements in Permit Conditions for
the Determination of Metal Concentrations in Fuels.

This guidance replaces "Guidance on Testing Requirements in Permit Conditions for the Determination of Metal Concentrations in Fuels" (DARM-PER/GEN-18) dated April 6, 1995.

Rule 62-297.340(1)(a), F.A.C., requires the owner or operator of a new or modified emissions unit that is subject to an emission limiting standard to conduct a compliance test that demonstrates compliance with the applicable emission limiting standards prior to obtaining an operating permit for such emissions unit.

Recent data from analyses of new distillate fuel oil indicate that metal concentrations are low and in many cases non-detectable by ASTM test methods. Distillate fuel oil is defined as any fuel oil that contains 0.05 or less percent nitrogen, by weight, and complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society of Testing and Materials in ASTM D396-78, Standard Specifications for Fuel Oils. Test data indicate that the metal concentrations in gaseous fuels are non-detectable. Also, the analyses indicate that testing requirements for metal concentrations in gaseous fuels or the above mentioned distillate oils are unnecessary, burdensome, and costly. The metals of concern are lead (Pb), inorganic arsenic compounds (As), cadmium (Cd), chromium (Cr), nickel (Ni), mercury (Hg), vanadium (V), and beryllium (Be).

If permit applications and Department review show that emissions units that exclusively use natural gas, propane, or distillate oil fuels do not trigger Prevention of Significant Deterioration (PSD) or Nonattainment Area (NAA) New Source Review (NSR) determinations, mass emissions limitations for metals should not be included in the permit. Even if the emission levels of one or more of the above mentioned metals trigger PSD or NAA NSR, the permitting authority need not establish mass emissions limitations for such metals. However, the permit (which includes BACT or LAER determinations) should note that the metals emissions levels for natural gas, propane, and distillate fuels (as defined above) are generally non-detectable by ASTM test methods. A BACT or LAER determination that requires the exclusive use of the above referenced fuels automatically minimizes the emissions of the heavy

District Air Program Administrators
County Air Program Administrators
BAR Air Permitting Staff
May 19, 1995
Page Two

metals and should suffice without imposing specific mass emissions limitations for metals, which would require testing pursuant to Rule 62-297.340(1)(a), F.A.C.

Each permit for emissions units exclusively using natural gas, propane, or distillate oils, as defined above, shall include a requirement that the owner maintain records to reflect that all the fuels delivered for these emissions units meet the specifications necessary to classify them as distillate fuels, natural gas, or propane.

To the extent that this conflicts with an existing permit, the existing permit prevails until a new permit is issued. For such changes to be federally enforceable, it is necessary to change both the air construction permit and the air operation permit.

HLR/mc/c

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SunBank / Mid-Florida, N.A.

63-115/631

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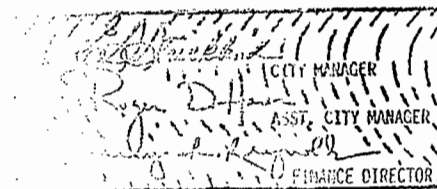
DATE

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3-13-97

*****250.00

FLORIDA DEPT. OF ENVIRONMENTAL
REGULATION





December 13, 1990

Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Attention: Mr. C. H. Fancy, Chief, Bureau of Air Regulation

Gentlemen:

Enclosed is an original and two copies of the City of Lakeland Combustion Turbine Project application for construction permit.

Each bound application prepared by our consultant - Black and Veatch, contains a copy of FDER Form 17-1.202 (1), the Ambient Air Quality Impact Assessment and the BACT Analysis. In addition, computer printouts and a diskette of all the air modeling computer runs supporting the application are enclosed.

Attached you will find a letter of authorization for the undersigned and the required \$5,000 application fee.

If you have any questions please call our Manager of Environmental Affairs, Mr. G. A. "Bill" Rodriguez at (813)/499-6589 or Mr. Steve Day at Black & Veatch (913/339-2820).

Very truly yours,

Alfred M. Dodd

Alfred M. Dodd, P.E.
E & W Engineering Manager
City of Lakeland
Department of Electric and Water Utilities
501 East Lemon Street
Lakeland, Florida 33801-5050
(813) 499-6461

Enclosure

cc: G. A. Rodriguez
Steve Day
File LPE-01-89

*P. Lewis
D. Andrews
C. Holladay*

*J. Hample, EPA
C. Shaw, RPS
D. Shaw, son of C.*

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FEDERAL EXPRESS QUESTIONS? CALL 800-238-5355 TOLL FREE		AIRBILL PACKAGE TRACKING NUMBER 8384312823	
Date 12/14/90		RECIPIENT'S COPY	
From (Your Name) Please Print CITY OF LAKELAND ELEC & WATER		To (Recipient's Name) Please Print City of Lakeland	
Your Phone Number (Very Important) (813) 838-4312		Recipient's Phone Number (Very Important) (813) 838-4312	
Company CITY OF LAKELAND ELEC & WATER		Company City of Lakeland	
Department/Floor No. 01 EAST LEMON ST		Department/Floor No. 01 EAST LEMON ST	
Street Address 01 EAST LEMON ST		Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Codes.) 01 EAST LEMON ST	
City LAKELAND		City LAKELAND	
State FL		State FL	
ZIP Required 33801		ZIP Required 33801	
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SERVICES (Check only one box) Priority Overnight Service (Delivery by next business morning) Standard Overnight Service (Delivery by next business afternoon) 11 <input checked="" type="checkbox"/> OUR PACKAGING 51 <input type="checkbox"/> 16 <input type="checkbox"/> FEDEX LETTER 56 <input type="checkbox"/> FEDEX LETTER 12 <input type="checkbox"/> FEDEX PAK 52 <input type="checkbox"/> FEDEX PAK 13 <input type="checkbox"/> FEDEX BOX 53 <input type="checkbox"/> FEDEX BOX 14 <input type="checkbox"/> FEDEX TUBE 54 <input type="checkbox"/> FEDEX TUBE Economy Two-Day Service (formerly Standard Air) (Delivery by second business day) Heavyweight Service (for Extra Large or any package over 150 lbs.) 30 <input type="checkbox"/> ECONOMY TWO-DAY SVC. 80 <input type="checkbox"/> HEAVYWEIGHT 80 <input type="checkbox"/> HEAVYWEIGHT 70 <input type="checkbox"/> HEAVYWEIGHT † Delivery commitment may be later in some areas. ** Declared Value Limit \$100. ** Call for delivery schedule.		DELIVERY AND SPECIAL HANDLING (Check services required) 1 <input type="checkbox"/> HOLD FOR PICK-UP (Fill in Box #) 2 <input type="checkbox"/> DELIVER WEEKDAY 3 <input type="checkbox"/> DELIVER SATURDAY (Extra charge) (Not available to all locations) 4 <input type="checkbox"/> DAUEROUS GOODS (Extra charge) 5 <input type="checkbox"/> DRY ICE _____ Lbs. 7 <input type="checkbox"/> OTHER SPECIAL SERVICE 8 <input type="checkbox"/> 9 <input type="checkbox"/> SATURDAY PICK-UP (Extra charge) 10 <input type="checkbox"/> 11 <input type="checkbox"/> DESCRIPTION 12 <input type="checkbox"/> HOLIDAY DELIVERY (If offered) (Extra charge)	
PACKAGES WEIGHT In Pounds Only YOUR DECLARED VALUE Total Total Total DIM SHIPMENT (Chargeable Weight) _____ lbs. Received At: 1 <input type="checkbox"/> Regular Stop 3 <input type="checkbox"/> Drop Box 2 <input type="checkbox"/> On-Call Stop 4 <input type="checkbox"/> B.S.C. 5 <input type="checkbox"/> Station		Federal Express Use Base Charges Declared Value Charge Other 1 Other 2 Total Charges REVISION DATE 8/90 PART #119501 EXEM 8/90 FORMAT #041 041 © 1990 F.E.C. PRINTED IN U.S.A.	
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City of Lakeland
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City of Lakeland
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OF POLK COUNTY, WINTERHAVEN, FL

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FIVE THOUSAND DOLLARS NO CENTS

PAY TO THE ORDER OF
DEPT OF ENVIRONMENTAL REG.

DATE
12-13-90

CHECK AMOUNT
*****5,000.00

[Signature] CITY MANAGER
[Signature] CITY TREASURER
[Signature] FINANCE DIRECTOR

CITY OF LAKE LAND, FLORIDA
COMBUSTION TURBINE PROJECT

AMBIENT AIR QUALITY IMPACT ANALYSIS

FILE 16587.32.0402

DECEMBER 1990



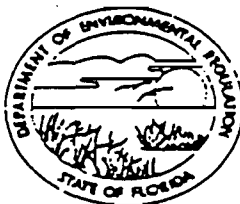
Black & Veatch
Engineers-Architects

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

\$5,000.00
12-17-90
Receipt # 151223

SOUTHEAST DISTRICT

3426 BILLS ROAD
JACKSONVILLE, FLORIDA 32207



AC 53-190437
PSD-FL-166

BOB GRAHAM
GOVERNOR
VICTORIA J. TSCHINKEL
SECRETARY
G. DOUG BUTTEN
DISTRICT MANAGER

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Combustion Turbine (CT) ☒ New¹ ☐ Existing¹

APPLICATION TYPE: ☒ Construction ☐ Operation ☐ Modification

COMPANY NAME: City of Lakeland, Florida COUNTY: Polk

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) CT, Gas/Distillate Fired

SOURCE LOCATION: ~~Street~~ Charles Larsen Power Plant City Lakeland

UTM: East 409.185 km North 3102.754 km

Latitude 28° 2' 56"N Longitude 81° 55' 25"W

APPLICANT NAME AND TITLE: City of Lakeland Department of Electric and Water Utilities

APPLICANT ADDRESS: 501 E. Lemon Street, Lakeland, FL 33801-5050

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of the City of Lakeland

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: Alfred M. Dodd

Alfred M. Dodd, Engr. Mgr.
Name and Title (Please Type)

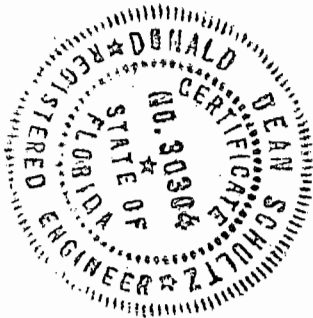
Date: 12/13/90 Telephone No. 813/499-6461

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 this
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

Donald D. Schultz, Project Manager

Name (Please Type)

Black & Veatch

Company Name (Please Type)

P. O. Box 8405, Kansas City, MO 64114

Mailing Address (Please Type)

Florida Registration No. 30304 Date: November 20, 1980 Telephone No. (913)339-2028

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.

See Sections 2.0 and 6.0 of the AAQIA. The project will result in full compliance with all applicable regulations.

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

Start of Construction June 1991 Completion of Construction December 1992

- 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.)

See Section 6.0 of the AAQIA. Note that water injection for reduction of NO_x emissions is an integral part of the gas turbine.

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

NA

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52
if power plant, hrs/yr 8760 ; if seasonal, describe: NA

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? No
 - a. If yes, has "offset" been applied?
 - b. If yes, has "Lowest Achievable Emission Rate" been applied?
 - c. If yes, list non-attainment pollutants.
 2. Does best available control technology (BACT) apply to this source?
If yes, see Section VI. Yes
 3. Does the State "Prevention of Significant Deterioration" (PSD)
requirement apply to this source? If yes, see Sections VI and VII. Yes
 4. Do "Standards of Performance for New Stationary Sources" (NSPS)
apply to this source? Yes
 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 17-2.630 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justifi-
cation 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:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	Sw		
NA				

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

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)

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/yr	T/yr	
See Section 3.3 of the AAQIA.							

¹See Section V, Item 2.

²Reference applicable emission standards and units (e.g. Rule 17-2.600(3)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

³Calculated from operating rate and applicable standard.

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

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
See Sections 3.3 and 6.0 of the AAQIA.				

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural Gas		1.14 MMCF/hr	1054.6 MMBtu/hr
or		(@ 25 F Ambient Conditions)	
No. 2 Fuel Oil		8.17x10 ³ gal/hr	1038.1 MMBtu/hr
		(@ 25 F Ambient Conditions)	

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

Fuel Analysis:

Gas: 2,000 gr/MMCF

Percent Sulfur: Oil: 0.20% by wgt.

Percent Ash: Nil (both fuels)

Gas: 1 lb/23.8 CF

Density: Oil: 7.05 lb/gal lbs/gal Typical Percent Nitrogen: 0.73%

Gas: 22,090

Gas: 928 Btu/CF

Heat Capacity: Oil: 18,010 BTU/lb Oil: 127,000 Btu/gal (LHV) BTU/gal

Other Fuel Contaminants (which may cause air pollution): Negl.

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average None Maximum None

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

NA

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

Stack Height: See Table 3-1 in the AAQIA ft. Stack Diameter: _____ ft.

Gas Flow Rate: _____ ACFM _____ OSCFM Gas Exit Temperature: _____ °F

Water Vapor Content: _____ % Velocity: _____ FP

SECTION IV: INCINERATOR INFORMATION

NA

Type of Waste	Type I (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 (lb/hr)							

Description of Waste _____

Total Weight Incinerated (lb/hr) _____ Design Capacity (lb/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 Diameter: _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ OSCFM Velocity: _____ FP

*If 30 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 30% 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)]
2. For 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. For 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 is made.
See Appendix B of the AAQIA
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
See Appendix B of the AAQIA
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.)
See Section 6.0 of the AAQIA
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).
See Section 6.0 of the AAQIA
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. See Figure 2-3 in the AAQIA
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 Figure 2-1 in the AAQIA
8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing process and outlets for airborne emissions. Relate all flows to the flow diagram.

See Figure 2-2 in the AAQIA

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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

- A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 61 applicable to the source?

☒ Yes ☐ No Subpart GG

Contaminant	Rate or Concentration
SO ₂	150 ppmvd at 15% O ₂
NO _x	*

*75 ppmvd at 15% O₂ corrected for nitrogen content and heat rate, or 84 ppmvd at 15% O₂

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

☐ Yes ☒ No Case by case determination

Contaminant	Rate or Concentration

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

Contaminant	Rate or Concentration
See Section 6.0 of the AAQIA	
NO _x	25 ppmvd at 15% O ₂ (Natural Gas) for FBN 42 ppmvd at 15% O ₂ (Distillate) <0.015%
SO ₂	0.2 percent Fuel Oil (Distillate)

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

1. Control Device/System:

2. Operating Principles:

3. Efficiency:

4. Capital Costs:

Explain method of determining

5. Useful Life:

7. Energy:

9. Emissions:

6. Operating Costs:

8. Maintenance Cost:

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. See Section 6.0 of the AAOIA

a. Control Devices:

b. Operating Principles:

c. Efficiency:¹

d. Capital Cost:

e. Useful Life:

f. Operating Costs:

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 Devices:

b. Operating Principles:

c. Efficiency:¹

d. Capital Cost:

e. Useful Life:

f. Operating Costs:

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 Costs:

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: See Section 6.0 of the AAQIA

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:

¹Explain method of determining efficiency.

²Energy 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:

¹Applicant 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

A. Company Monitored Data See Section 5.2 of the AAQIA

1. _____ no. sites _____ TSP _____ () SO₂ _____ 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).

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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

8. Meteorological Data Used for Air Quality Modeling See Section 4.3 of the AAQIA

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 See Section 4.1 of the AAQIA

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.

Applicants Maximum Allowable Emission Data See Section 3.3 of the AAQIA

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 NEQS 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. *

* E-H: See AAQIA for details

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1.0 INTRODUCTION

The City of Lakeland Department of Electric and Water Utilities proposes to construct and operate a combustion turbine generator at the existing Charles Larsen Power Plant located in Lakeland, Florida. The combustion turbine (CT) will be capable of generating approximately 80 MW while operating in simple cycle, and 120 MW when in combined cycle operation. While in combined cycle, a single heat recovery steam generator (HRSG) will be used to repower an existing steam turbine generator (Larsen Unit 5). No expansion in steam capacity at the site is planned, and thus the facility is not required to be licensed under the Electrical Power Plant Siting Act which requires an increase in steam capacity before coverage is applied.

This report describes the Ambient Air Quality Impact Analysis (AAQIA) performed in support of a Florida Department of Environmental Regulation (FDER) permit to construct an air pollution source at the Larsen facility. The purpose of the AAQIA is to demonstrate that the combustion turbine installation will not cause or contribute to an exceedance of any national or state Ambient Air Quality Standards (AAQs) and will not consume more than the applicable amount of Prevention of Significant Deterioration (PSD) air quality Class II increment. A Workplan which described the proposed methodology to be followed in this AAQIA was submitted to and conditionally approved by the appropriate FDER staff.

2.0 PROJECT DESCRIPTION

The Lakeland Combustion Turbine Project is located at the existing City of Lakeland Charles Larsen Plant site in Lakeland, Florida. The site is located on the south side of Lake Parker as shown in Figure 2-1. The plant site arrangement and a flowchart showing the combustion turbine process are shown in Figures 2-2 and 2-3, respectively.

The Project will consist of a new CT generator with the addition of a heat recovery steam generator (HRSG). When operating in the combined cycle mode, the CT will exhaust combustion gases to a dedicated HRSG and eventually to a 155-foot high stack. Steam produced in the HRSG will be directed to the existing Larsen Unit 5 steam turbine. During periods when the HRSG is not operating, the combustion turbine will operate in a simple cycle mode and exhaust through a 100-foot bypass stack. The new CT will be natural gas or No. 2 fuel oil (distillate) fired.

The proposed CT will have an independent air cooling system. The steam cycle and associated equipment will be cooled using the existing once-through cooling system. Makeup water for the HRSG boiler and NO_x control water injection for the CT will be supplied from the Larsen Plant demineralized water supply. Wastewater will be routed to the existing wastewater system.

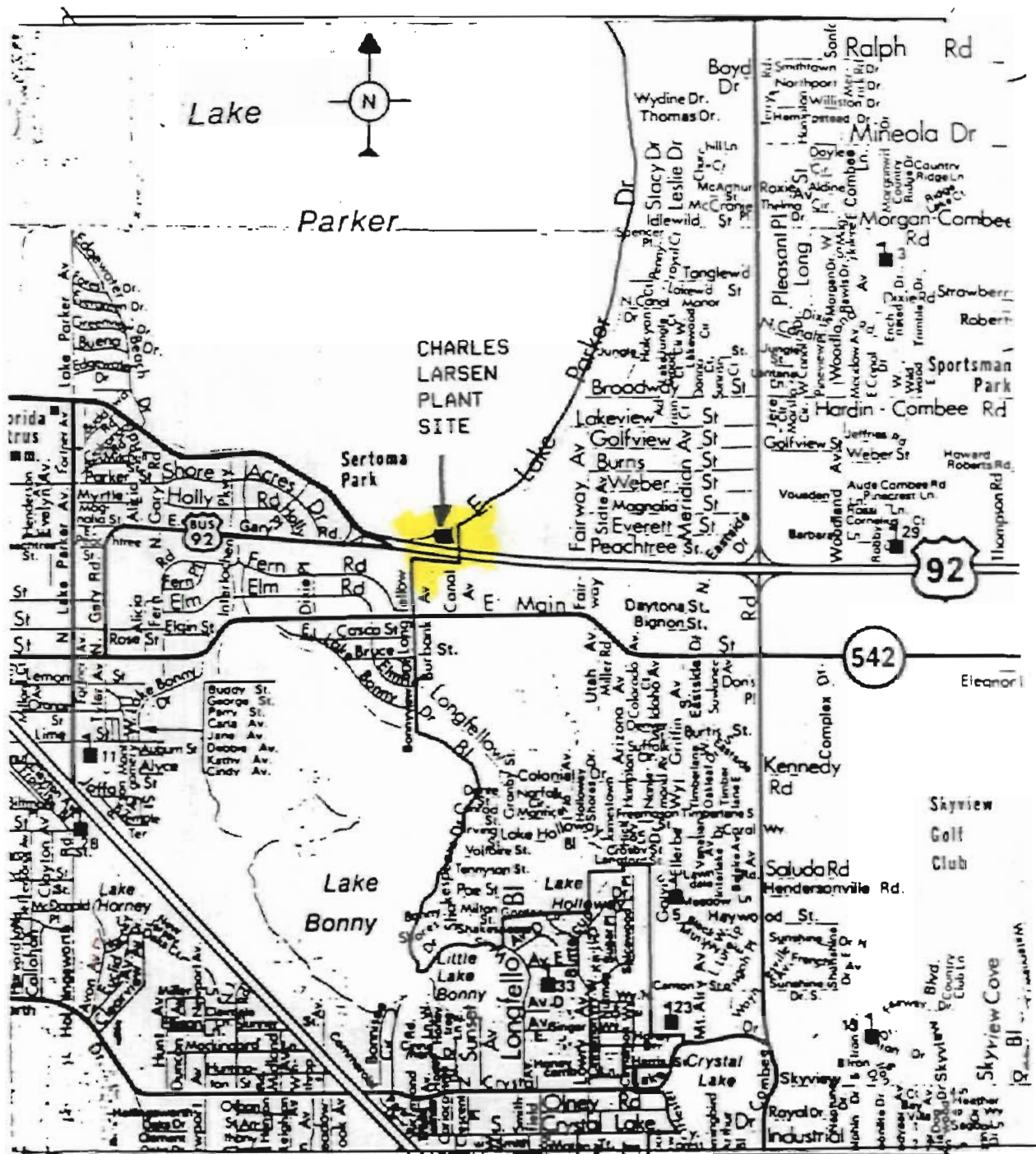
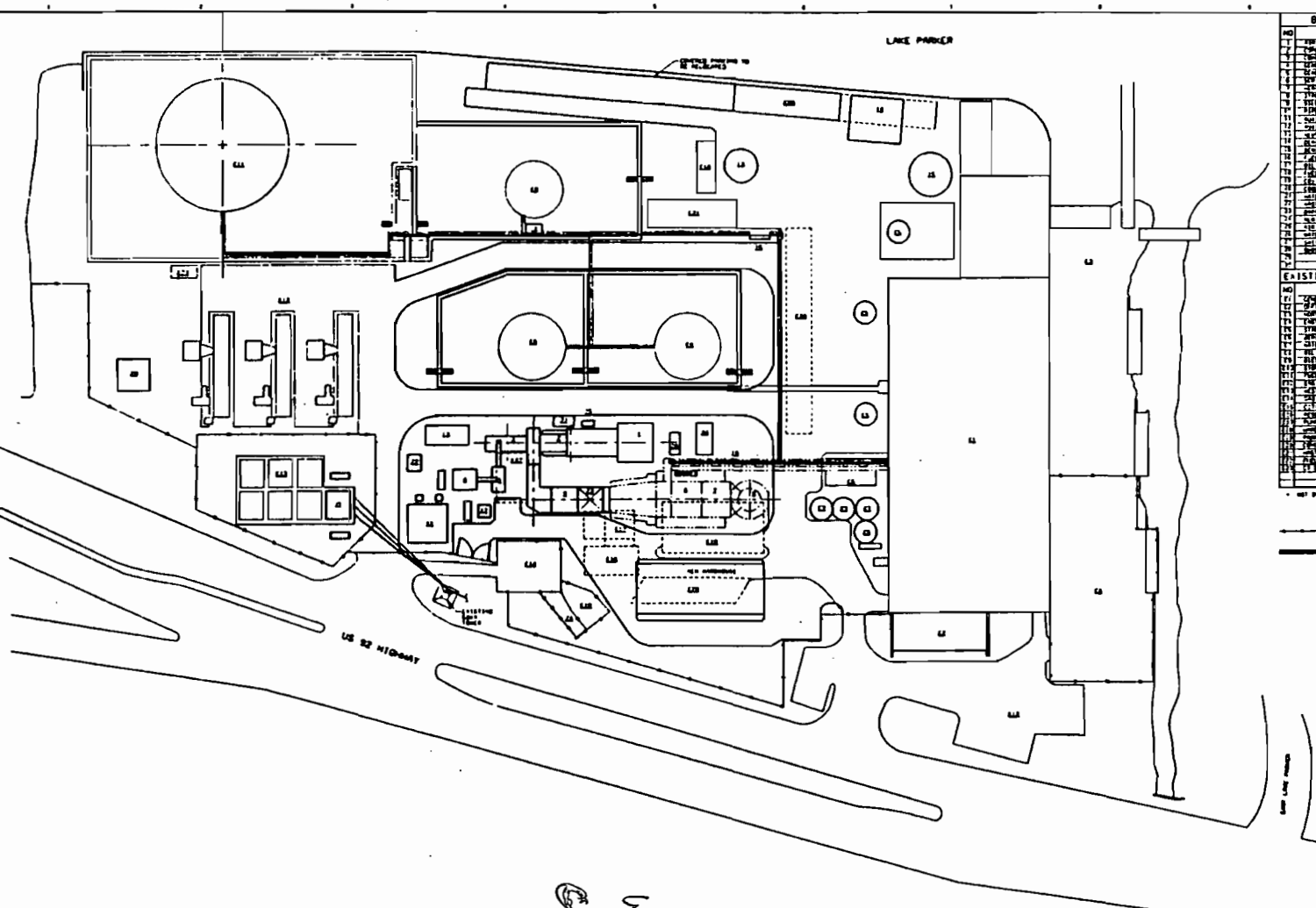


FIGURE 2-1. LOCATION OF CHARLES LARSEN PLANT SITE

FIGURE 2-2. CHARLES LARSEN PLANT SITE ARRANGEMENT



BUILDING AND FACILITIES LEGEND	
NO.	NOMENCLATURE
1	1ST FLOOR
2	2ND FLOOR
3	3RD FLOOR
4	4TH FLOOR
5	5TH FLOOR
6	6TH FLOOR
7	7TH FLOOR
8	8TH FLOOR
9	9TH FLOOR
10	10TH FLOOR
11	11TH FLOOR
12	12TH FLOOR
13	13TH FLOOR
14	14TH FLOOR
15	15TH FLOOR
16	16TH FLOOR
17	17TH FLOOR
18	18TH FLOOR
19	19TH FLOOR
20	20TH FLOOR
21	21ST FLOOR
22	22ND FLOOR
23	23RD FLOOR
24	24TH FLOOR
25	25TH FLOOR

EXISTING BUILDING AND FACILITIES LEGEND	
NO.	NOMENCLATURE
1	EXISTING BUILDING
2	EXISTING FACILITY
3	EXISTING STRUCTURE
4	EXISTING EQUIPMENT
5	EXISTING UTILITY
6	EXISTING ROAD
7	EXISTING FENCE
8	EXISTING DITCH
9	EXISTING POND
10	EXISTING LAKE
11	EXISTING RIVER
12	EXISTING STREAM
13	EXISTING CREEK
14	EXISTING BRANCH
15	EXISTING TRIBUTARY
16	EXISTING CONFLUENCE
17	EXISTING DELTA
18	EXISTING ESTUARY
19	EXISTING BAY
20	EXISTING GULF
21	EXISTING OCEAN
22	EXISTING SEA
23	EXISTING TIDE
24	EXISTING WAVE
25	EXISTING CURRENT

Cannot
need
where is - blue
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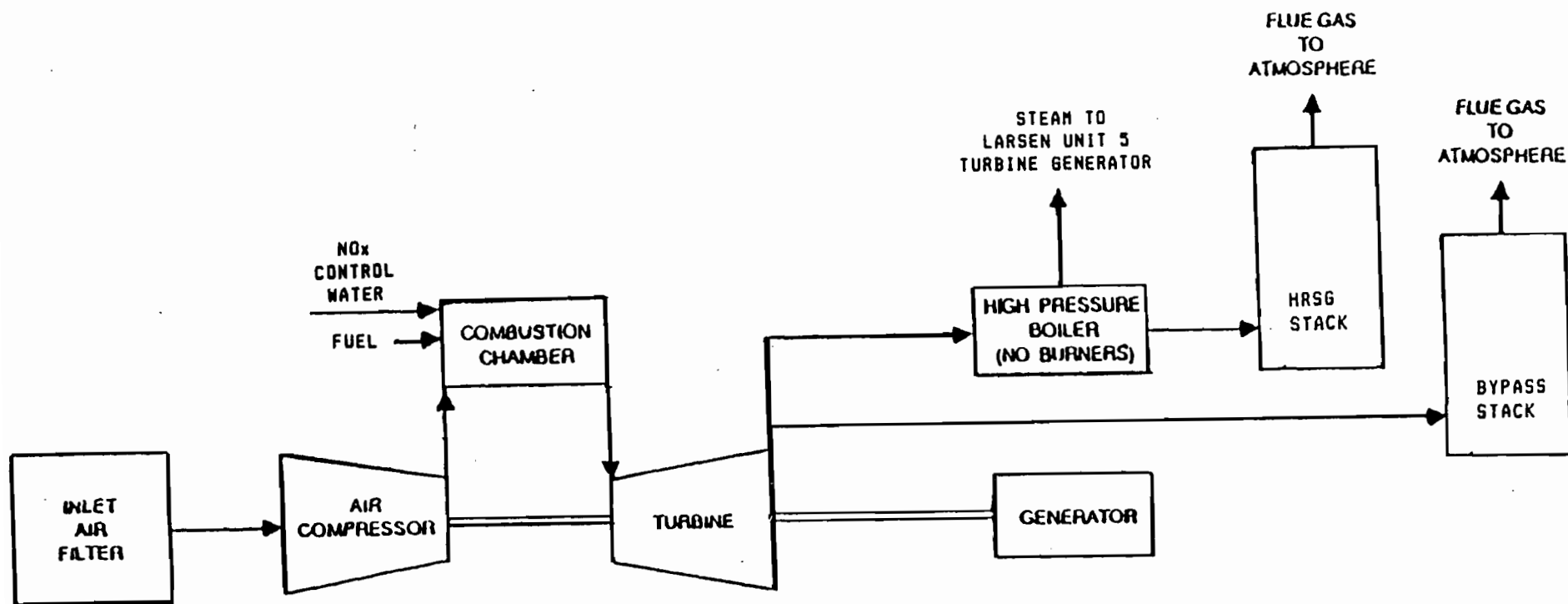


FIGURE 2-3. COMBUSTION TURBINE FLOW DIAGRAM

3.0 SOURCE CHARACTERIZATION

This section discusses the applicability of federal, state and local air quality regulations, good engineering practice (GEP) stack height determination, stack parameters and source emission rates, and the current air quality status at the Lakeland site. Best engineering estimates and plant conceptual design information were used to establish the modeling parameters.

3.1 APPLICABILITY OF REGULATIONS

The proposed Lakeland Project is subject to PSD regulations because the installation of the combustion turbine constitutes a major modification to an existing major stationary source and the plant will be located in an area designated as "attainment" for applicable pollutants. In addition, the requirements of the Florida Air Pollution and Permit Rules and Regulations and New Source Performance Standards (NSPS) Subpart GG will be applicable.

3.2 GEP STACK HEIGHT DETERMINATION

A GEP stack height analysis was conducted for the existing and proposed buildings and structures at the Larsen Power Plant. Pollutant dispersion from stacks built to the maximum GEP height are not influenced by surrounding building turbulence. If stacks are built lower than GEP, special air quality modeling techniques such as downwash and cavity analyses are required to demonstrate compliance with air quality standards.

EPA's Guideline For Determination of Good Engineering Practice Stack Height (1985) was used as a basis for this GEP analysis. The dominant structure influencing the proposed combustion turbine stacks is the existing turbine generator building. The maximum height of the generation building is 121.5 feet above grade. The maximum projected width of the generation building is 73.6 feet. The GEP height is calculated as the height of the dominant nearby building plus 1.5 times the lesser of the building height or maximum projected width. Therefore, the maximum GEP height is calculated to be 232 feet. Since the CT stack heights (155 and 100 feet) are less than the GEP height, building downwash considerations were

included in the modeling analysis. In fact, since the proposed stacks will be subject to Schulman-Scire downwash, direction-specific building heights and widths were used in the modeling analysis. Appendix A shows the output of Trinity Consultant's "BRZWAKE" program, which was used to determine direction-specific building dimensions.

3.3 STACK PARAMETERS AND SOURCE EMISSIONS

Stack parameters for both natural gas and fuel oil firing are given in Table 3-1 for both combined and simple cycle operation. All calculations were based on preliminary engineering design information and manufacturer performance data. Combustion turbine outputs (megawatts, fuel burn rates, and emissions) increase for operation at lower ambient temperatures. Therefore, the maximum emission rates for a combustion turbine do not occur at 59 F ISO standard day conditions, but occur during lower ambient temperatures. The lowest anticipated temperature for the Lakeland project is 25 F. To keep the analysis conservative, the maximum short-term emission rates and stack parameters used in the modeling analysis are based on an ambient temperature of 25 F. Annual impacts are based on ISO condition (59 F and 60 percent relative humidity) emission rates. The stack parameters given in Table 3-1 are based on the 25 F ambient condition.

Estimated maximum hourly emissions for the combustion turbine when firing either natural gas or fuel oil is provided in Table 3-2. These emissions are applicable for both simple and combined cycle operation. Duct burning is not proposed for the project. Estimates are based on a design fuel burn rate assuming the lower heating value (LHV) of the fuels and both the 25 and 59 F ambient temperature conditions. As stated previously, the 25 F emission rates are used to calculate short-term impacts and the ISO emission rates are used for annual calculations. These assumptions are representative of the facility's maximum generation capability.

The nitrogen oxides (NO_x) emission rate for natural gas firing is based on operations with low NO_x burner technology and multi-nozzle water injection (see BACT determination in Section 6.0). These controls result in an outlet concentration of 25 ppmvd referenced to 15 percent oxygen when

TABLE 3-1. COMBUSTION TURBINE SOURCE PARAMETERS AT 25 F

Parameter	Combined Cycle		Simple Cycle	
	Natural Gas	No. 2 Fuel Oil	Natural Gas	No. 2 Fuel Oil
Fuel LHV (Btu/ft ³)	928	--	928	--
(Btu/gal)	--	127,000	--	127,000
Heat Rate (MMBtu/h)	1,055	1,038	1,055	1,038
Exhaust Temperature (F)	481	481	949	950
Exhaust Flow (lb/h)	2,588,000	2,589,000	2,588,000	2,589,000
Exhaust Gas Molecular Weight (lb/lb-mole)	28.16	28.66	28.16	28.66
Exhaust Flow Water Vapor Content (% vol)	10.13	7.25	10.13	7.25
Exhaust Flow Oxygen Content (% vol)	12.93	13.44	12.93	13.44
Exhaust Volumetric Flow (acfm)	1,058,000	1,040,000	1,570,000	1,575,000
Exhaust Flow Velocity (fpm)	3,732	3,668	5,537	5,555
Stack Height (ft)	155	155	100	100
Stack Diameter (ft)	19	19	19	19
Dominant Building Height (ft)	121.5	121.5	121.5	121.5
Maximum Projected Width (ft)	73.6	73.6	73.6	73.6

TABLE 3-2. COMBUSTION TURBINE SOURCE EMISSIONS¹

Parameter	@ 25 F ²		@ 59 F ³	
	Natural Gas	No. 2 Fuel Oil	Natural Gas	No. 2 Fuel Oil
SO ₂ (lb/h) ⁴	0.7	231	0.6	210
NO _x (ppmvd @ 15% O ₂) ⁵	25	42	25	42
NO _x (lb/h) ⁵	106	183	97	167
CO (ppmvd) ⁵	25	25	25	25
CO (lb/h) ⁵	58	58	53	54
VOC (ppmvw) ⁵	1.4	3.5	1.4	3.5
VOC (lb/h) ⁵	2	5	2	4.5
Particulate (lb/h) ⁵	5	15	5	15

¹HRSG and Bypass stack emissions are equivalent.

²25 F emissions are used to calculate short-term impacts.

³59 F emissions are used to calculate annual emissions and impacts.

⁴Natural gas emissions are based on 2,000 gr/MMCF sulfur content. No. 2 fuel oil emissions are based on 0.2 percent sulfur by weight. See Appendix B for a derivation of SO₂ emission rates.

⁵Based on manufacturer performance data.

firing natural gas. The NO_x emission rate for fuel oil firing is also based on operations with low NO_x burner technology and multi-nozzle water injection. These controls result in an outlet concentration of 42 ppmvd referenced to 15 percent oxygen.

The sulfur dioxide (SO_2) emission rate with natural gas firing is based on a sulfur content of 2,000 grains of sulfur per million cubic feet (MCF) of natural gas and a heat content of 928 Btu/ft³ (LHV). The SO_2 emission rate for fuel oil combustion is based on a 0.2 percent by weight fuel sulfur content and a heat content of 127,000 Btu/gal. SO_2 emission rates are derived in Appendix B.

The emission rates of carbon monoxide (CO), volatile organic compounds (VOCs), and particulate matter (PM) were obtained from typical manufacturer performance data for the GE PG7111(EA) Frame 7 improved low NO_x combustion turbine.

Emission rates for other regulated and hazardous air pollutant emissions were based on manufacturer information and on information contained in the EPA publication Toxic Air Pollutant Emissions Factors - A Compilation For Selected Air Toxic Compounds and Sources (EPA-450/2-88-006a). Emissions of beryllium (Be), lead (Pb), mercury (Hg), and sulfuric acid (H_2SO_4) mist were estimated for fuel oil combustion. These pollutants are not found in natural gas firing. Asbestos (As), fluoride (F), and vinyl chloride ($\text{C}_2\text{H}_3\text{Cl}$) are not found in No. 2 fuel oil or natural gas.

Be, Pb, and Hg are found in No. 2 fuel oil in trace amounts. A typical Be concentration in fuel oil is 2.5×10^{-6} pounds per million Btu. Pb concentrations are estimated at 2.8×10^{-5} pounds per million Btu. Hg concentrations are estimated to be 3.0×10^{-6} pounds per million Btu.

H_2SO_4 mist results from oxidation of the SO_2 in the flue gas to sulfur trioxide (SO_3). The SO_3 then combines with water vapor to form H_2SO_4 mist. Approximately 3 percent of the SO_2 is converted to H_2SO_4 mist. Based on these estimates, the H_2SO_4 mist concentration is 6.7×10^{-3} pounds per million Btu for fuel oil firing, and 1.9×10^{-5} pounds per million Btu for natural gas.

Table 3-3 presents the maximum potential annual emissions from the combustion turbine addition assuming 8,760 hours of annual operation. Appendix B shows the calculations supporting the annual emission rates.

TABLE 3-3. POTENTIAL ANNUAL EMISSIONS FROM THE COMBUSTION TURBINE

Pollutant	Potential Annual Emission @ 59 F		PSD Significance Levels (tpy)	PSD Significance (yes/no)
	Natural Gas (tpy)	Fuel Oil (tpy)		
CO	232	237	100	yes
NO _x	425	732	40	yes
SO ₂	2.6	920	40	yes
TSP	22	66	25	yes
PM ₁₀ *	22	66	15	yes
VOC	9	20	40	no
Lead	0.0	0.12	0.6	no
Asbestos	0.0	0.0	0.007	no
Beryllium	0.0	0.01	0.0004	yes
Mercury	0.0	0.01	0.1	no
Vinyl Chloride	0.0	0.0	1.0	no
Fluorides	0.0	0.0	3.0	no
H ₂ SO ₄ mist	0.03	27.6	7.0	yes
Total Reduced S	<<10	<<10	10	no
Reduced S	<<10	<<10	10	no
H ₂ S	<<10	<<10	10	no

*The assumption is made that all particulate matter is less than 10 microns in diameter (PM₁₀).

NOTE: Emissions are based on the combustion turbine operating at ISO conditions (59 F and 50 percent relative humidity) with natural gas or fuel oil for 8,760 hours per year (See Appendix B for calculations). PSD significance for a pollutant is triggered if emissions from either fuel exceed the significance levels.

The results indicate that the new unit will require additional PSD review for CO, NO_x, SO₂, PM, Be, and H₂SO₄ mist. VOC, Pb, As, Hg, C₂H₃Cl, F, and reduced sulfur compounds require no further analyses. PSD review requires a BACT analysis, an ambient air quality impact analysis, and additional impact analysis.

3.4 CURRENT AIR QUALITY STATUS

The Charles Larsen Power Plant is located in an area which is designated as attainment for all applicable criteria pollutants.

4.0 MODELING METHODOLOGY

This section discusses the modeling methodology used for determining ambient air quality impacts for SO₂, NO_x, CO, and PM resulting from the proposed combustion turbine addition. The proposed methodology was reviewed and approved by FDER in the AAQIA Workplan. Section 5.0 gives the results of the dispersion modeling analysis.

4.1 MODEL SELECTION AND DESCRIPTION

The combustion turbine will burn either natural gas or low sulfur No. 2 fuel oil. Tables 3-2 and 3-3 show that the SO₂, NO_x, and PM emissions from fuel oil combustion are significantly higher than natural gas combustion, while the gas flow characteristics are fairly similar. Therefore, it can be concluded without screening-level analysis that fuel oil combustion will result in the higher ground-level pollutant impacts.

The terrain surrounding the Larsen facility is relatively flat. Following the recommended EPA guidance for refined models, the Industrial Source Complex Short Term (ISCST) dispersion model was used with five years of hourly meteorological data to predict maximum and highest, second-highest ambient pollutant impacts at receptor locations surrounding the plant site. The ISCST model is designed to predict ambient pollutant impacts for several averaging periods and from a variety of industrial sources. In addition, the model has the ability to evaluate external parameters such as rural or urban environments and building downwash.

All recommended EPA default options were utilized. The following is a listing of the options selected for the modeling:

- | | | | |
|---|---|---|---------|
| o | Rural-urban option | : | rural |
| o | Wind profile exponents | : | default |
| o | Vertical potential temperature
gradient values | : | default |
| o | Final plume rise only | : | yes |
| o | Adjust stack heights for downwash | : | yes |
| o | Buoyancy induced dispersion | : | yes |

- o Calm processing option : yes
- o Above ground receptors used : no
- o Schulman - Scire downwash : yes

For unstable through stable atmospheric conditions, the wind profile exponents are 0.07, 0.07, 0.10, 0.15, 0.35, and 0.55, respectively.

4.2 RECEPTOR LOCATIONS

Receptor locations were selected with adequate density to ensure that the maximum and highest, second-highest predicted concentrations were determined. Dispersion modeling for the HRSG and bypass stacks was performed with receptors placed along the 36 standard radial directions surrounding a point half-way between the two stacks at the following downwind distances: 100-meter intervals from 100 to 1,000 meters, 250-meter intervals from 1,250 to 3,000 meters, and 1,000-meter intervals from 4,000 to 15,000 meters. Furthermore, discrete receptors were placed at the boundaries that restrict public access along the 36 radial directions.

4.3 METEOROLOGICAL DATA

The ISCST dispersion model was used with five years (1982-1986) of sequential hourly surface meteorological data and twice-daily mixing heights. The surface and mixing height data were selected from a location most representative of the general area being modeled. A representative location corresponds to the station closest to the location being modeled which is in the same climatic regime.

Hourly surface and mixing height data from the Tampa, Florida NWS reporting station were obtained from FDER. The data were selected by FDER as the most representative of meteorological conditions at the City of Lakeland Charles Larsen Power Plant. The data had been preprocessed into the "CRSTER" format and all five years were used in the modeling.

5.0 AIR QUALITY IMPACT ANALYSIS

An air quality impact analysis was performed using the modeling methodology approved by the FDER in the AAQIA Workplan and reviewed in Section 4.0. The analysis was performed to determine which pollutants emitted from the combustion turbine project have the potential to impact ambient air quality above PSD ambient air quality "significance levels". In addition, if significant impacts are determined, a "significant impact area" must be defined, preconstruction monitoring requirements need to be examined, and an ambient air quality standard (AAQS) and PSD increment consumption analysis outline must be developed.

5.1 MODELING RESULTS

The results of the refined-level dispersion modeling are presented in Tables 5-1 and 5-2. Table 5-1 shows the modeled concentrations for each averaging period assuming a nominal (1 g/s) SO₂ emission rate. Table 5-2 shows the impacts for each pollutant after ratioing the annual nominal impacts to the 59 F actual emission rates and the short-term nominal impacts to the 25 F actual emission rates. A description of the modeling runs is given in Appendix C. Printed and floppy diskette copies of the runs will be provided to the FDER.

Table 5-1 shows that the highest impacts for all averaging periods except the 24-hour period are predicted to occur when the combustion turbine is operating in the simple cycle mode (Bypass). The highest 24-hour impact occurs in the combined cycle mode (HRSG). The maximum impact location for the annual averaging period is 100 meters from the plant. The highest, second-highest 1-, 3-, 8-, and 24-hour average impact locations are also 100 meters from the plant. The highest, second-highest 24-hour impact occurred 200 meters from the plant.

Table 5-2 shows the maximum annual and highest, second-highest 3-, and 24-hour average impacts of SO₂ are 0.2, 4.7, and 19.2 ug/m³, respectively. These values are below the PSD significance levels of 1.0, 5.0, and 25.0 ug/m³, respectively. Therefore, no further air quality impact analysis is required for SO₂.

TABLE 5-1. REFINED MODELING RESULTS - FUEL OIL COMBUSTION

Operating Condition	1-Hour Impact*	3-Hour Impact*	8-Hour Impact*	24-Hour Impact*	Annual Impact**
Simple Cycle - Bypass***					
Concentration (ug/m ³)	1.28234	0.66011	0.37247	0.14412	0.00698
Receptor Dist. (m)	100	100	100	100	100
Receptor Dir. (deg)	100	350	20	100	260
Modeled Year	1984	1985	1985	1983	1982
Combined Cycle - HRSG***					
Concentration (ug/m ³)	0.78584	0.47293	0.25268	0.15978	0.00484
Receptor Dist. (m)	200	200	200	200	4,000
Receptor Dir. (deg)	290	120	120	120	90
Modeled Year	1983	1984	1984	1984	1986

*Concentrations are highest, second-highest values.

**Concentrations are maximum values when averaged over 8,760 hours.

***All impacts are based on a nominal 1 g/s emission rate.

TABLE 5-2. MODELED POLLUTANT IMPACT DETERMINATION

<u>Pollutant</u>	<u>Averaging Period</u>	<u>Significant Impact Criteria</u> ug/m3	<u>Monitoring Criteria</u> ug/m3	<u>Maximum Impact*</u> ug/m3	<u>Location</u>		<u>Year</u>	<u>Operating Mode**</u>
					<u>Dist.</u> m	<u>Dir.</u> deg		
SO ₂	Annual	1	--	0.2	100	260	1982	SC
	24-Hour	5	13	4.7	200	120	1984	CC
	3-Hour	25	--	19.2	100	350	1985	SC
NO _x	Annual	1	14	0.2	100	260	1982	SC
CO	8-Hour	500	575	2.7	100	20	1985	SC
	1-Hour	2,000	--	9.4	100	100	1984	SC
PM	Annual	1	--	0.01	100	260	1982	SC
	24-Hour	5	10	0.3	200	120	1984	CC

*Annual pollutant impacts are based on maximum modeled concentrations assuming 8,760 hours per year operation. The 3-hour and 24-hour impacts are based on highest, second-highest modeled concentrations.

**CC - Combined Cycle Operation.
SC - Simple Cycle Operation.

The maximum annual average impact for NO_x is 0.2 ug/m^3 . This value is below the significant ambient air quality impact level of 1.0 ug/m^3 . No further air quality impact analysis is necessary for NO_x .

The highest, second-highest 1- and 8-hour CO impacts are 9.4 and 2.7 ug/m^3 , respectively. These values are well below the significant ambient air quality levels of 2,000 and 500 ug/m^3 , respectively. Consequently, no further air quality impact analysis is required for CO.

The maximum annual and highest, second-highest 24-hour average impact for PM (TSP/ PM_{10}) are 0.01 and 0.3 ug/m^3 , respectively. These values are well below the significant ambient air quality impact levels of 1.0 and 5.0 ug/m^3 , respectively. No further air quality impact analysis is necessary for particulates.

5.2 PRECONSTRUCTION MONITORING REQUIREMENTS

Based on the results of the ISCST modeling presented in Table 5-2, pollutant emissions from the project will not result in ambient impacts above PSD de minimis monitoring levels. Therefore, ambient monitoring will not be required.

5.3 SIGNIFICANT IMPACT AREA DETERMINATION

For each PSD applicable pollutant, the extent of the significant impact area must be defined. The radii of significant impacts are determined by extending the receptor array outward until the predicted maximum concentration at the farthest receptor is less than the appropriate ambient significance level.

Modeling results from Section 5.1 show that none of the applicable pollutants have impacts above ambient significance levels. Therefore, there is not a significant impact area for this project.

5.4 AAQS AND PSD INCREMENT COMPLIANCE DETERMINATION

Criteria pollutants with ambient air quality impacts above significance levels must demonstrate compliance with AAQS and PSD increment consumption. Based on the ISCST modeling results, no compliance determination is required for the project since all impacts are below significance levels.

6.0 BEST AVAILABLE CONTROL TECHNOLOGY (BACT)

6.1 INTRODUCTION

The Lakeland Combustion Turbine Project will consist of one combustion turbine operating in combined cycle. The primary fuel for the project will be natural gas. However, No. 2 fuel oil will be used as a backup combustion turbine fuel. Pollutant emissions are generally higher when burning No. 2 fuel oil. Section 3.0 concluded that when fuel oil is used for the maximum project operation or 8,760 hours per year (100 percent capacity factor), the following regulated pollutants are subject to the provisions of the PSD Program.

- | | |
|--|--------------------------------|
| o Nitrogen Oxides (NO _x) | o Particulate (Total and PM10) |
| o Sulfur Dioxide (SO ₂) | o Beryllium (Be) |
| o Sulfuric acid mist (H ₂ SO ₄) | o Carbon Monoxide (CO) |

Consequently, this BACT analysis will address the control of emissions of these PSD applicable pollutants when burning either natural gas, or No. 2 fuel oil. Also included are evaluations of the effects of the BACT systems selected on the emissions of unregulated hazardous pollutants.

Under the federal Clean Air Act, BACT represents the maximum degree of pollutant reduction determined on a case-by-case basis considering technical, economic, energy, and environmental considerations. However, BACT cannot be less stringent than the emission limits established by the applicable New Source Performance Standards (NSPS) Subpart GG.

This BACT analysis follows the general requirements of EPA's draft "top down" BACT guidance document. This approach requires that the BACT analysis start by assuming the use of the LAER control alternative. Other, less efficient emission control technologies are subsequently evaluated if LAER is determined to be unreasonable considering the above factors.

Based on a review of EPA's BACT/LAER Clearinghouse - A Compilation of Control Technology Determinations including the 1990 edition, a combustion turbine with HRSG that utilizes water or steam injection and selective catalytic reduction (SCR) for NO_x emission control represents LAER. A recent FDER BACT decision for the TECO, Hardee County Project allowed for

the use of water or steam injection for NO_x control to 42 ppmvd (@ 15 percent O₂) and no supplemental control devices. The TECO Project is very similar to the proposed Lakeland Project with the exception of some operating limitations. The TECO project is restricted to a lifetime average capacity factor of 60 percent and limitations on the fuel burn rate. The permit also stipulated that only natural gas or No. 2 fuel oil can be burned in the combustion turbine. SO₂ emissions for the TECO project will be controlled by limiting the average annual sulfur content of the fuel oil to 0.3 percent by weight with the maximum not to exceed 0.5 percent.

The BACT analysis for the Lakeland Combustion Turbine Project is contained in the following sections.

6.2 NITROGEN OXIDES EMISSIONS CONTROL

During combustion, two types of NO_x are formed; fuel NO_x and thermal NO_x. Fuel NO_x emissions are formed through the oxidation of a portion of the nitrogen contained in the fuel. Thermal NO_x emissions are generated through the oxidation of a portion of the nitrogen contained in the combustion air. Nitrogen oxides formation can be limited by lowering combustion temperatures, and staging combustion (a reducing atmosphere followed by an oxidizing atmosphere).

6.2.1 Alternative NO_x Emission Reduction Systems

The EPA has established an NSPS limitation for NO_x emissions from electric utility combustion turbines at 75 parts per million dry volume (ppmvd) at 15 percent oxygen (O₂), with a correction for fuel nitrogen content and turbine heat rate [40 CFR 60.332(b)]. A review of EPA's BACT/LAER Clearinghouse - A Compilation of Control Technology Determinations through the 1990 edition, indicated that the lowest NO_x emission limit to be 4.5 ppmvd at 15 percent O₂. This limit is for a combustion turbine with an HRSG located in California. That permit value was based on the use of water injection in the combustion turbine and a SCR system contained within the HRSG (combined cycle operation).

Either water or steam could be used to limit NO_x formation during combustion. Therefore, the LAER NO_x emission control alternative for use with combustion turbines is established as water or steam injection followed by an SCR system.

Other NO_x emission control systems have been identified for evaluation as BACT. Injection of water into a turbine with a low NO_x combustion chamber(s) can limit NO_x emissions to 25 ppmvd (at 15 percent O₂) when burning natural gas and 42 ppmvd when burning fuel oil.

In addition to the two alternatives, NO_x emissions from other types of combustion sources have also been controlled through installation of selective non-catalytic reduction (SNCR) systems such as Thermal DeNO_x. A SNCR system requires gas temperatures of at least 1,500 F for NO_x reduction. The temperature at the outlet of a combustion turbine is too low (950 F to 1,100 F) for such systems. Since raising the flue gas exit temperature to 1,500 F would require supplemental heating of the flue gas, thereby increasing total emissions due to increased fuel usage, this alternative is judged technically unacceptable for application on a combustion turbine.

6.2.1.1 Selective Catalytic Reduction. SCR is a post-combustion method for control of NO_x emissions. The SCR process combines vaporized ammonia with NO_x in the presence of a catalyst to form nitrogen and water. The vaporized ammonia is injected into the exhaust gases prior to passage through the catalyst bed. The SCR process can achieve up to 90 percent reduction of NO_x with a new catalyst. An aged catalyst will provide a maximum of approximately 80 to 85 percent NO_x reduction.

The optimum flue gas temperature range for SCR operation is approximately 650 to 750 F. Flue gas from the combustion turbines will typically be 950 F to 1100 F. Therefore, an SCR would be installed in an intermediate point of the HRSG where a temperature of approximately 700 F occurs.

Operation of the unit in the simple cycle mode would require that the SCR be bypassed in order to prevent permanent damage to the catalyst from the high exhaust gas temperatures due to the HRSG not being in operation.

6.2.1.2 Improved Low NO_x Combustion Chamber. Combustion turbine manufacturers have begun to market an improved low NO_x burner design.

These burners provide improved air/fuel mixing and reduced flame temperatures. The result is lower concentrations of NO_x in comparison to standard combustion chamber design (25 versus 42 ppmvd when firing natural gas). However, these machines also have significantly higher CO emissions.

The capital and annual cost of a low NO_x combustor which meets a 25/42 (natural gas/oil) ppmvd NO_x emission limit is considered base for this project.

6.2.1.3 Water/Steam Injection. Use of water or steam injection in the combustion zones of a combustion turbine can limit the amount of NO_x formed. Thermal NO_x formation is avoided due to lower combustion temperatures resulting from the water or steam injection. The degree of reduction in NO_x formation is somewhat proportional to the amount of water or steam injected into the turbine.

Since the combustion turbine NSPS was last revised in 1982, combustion turbines have improved their tolerance to the water steam necessary to control NO_x emissions below the current NSPS level. However, there is still a point at which the amount of water or steam injected into the turbine seriously degrades the turbine's reliability and operational life. With the manufacturers' existing turbine designs and standard combustors, this generally occurs below a NO_x emission level of about 42 ppmvd (at 15 percent O₂) when firing natural gas and 65 ppmvd when firing fuel oil.

These NO_x emission levels can be achieved with little additional cost and without significant impact on reliability or power output over those costs required to comply with the NSPS.

6.2.2 Capital and Operating Costs of Alternatives

Tables 6-1 and 6-2 present the capital and levelized annual costs of the two feasible NO_x control systems for the combustion turbine facility: a low NO_x combustor with and without an SCR. The incremental annual NO_x emissions are based on firing natural gas for a maximum of 8,760 hours per year (100 percent capacity factor) in the turbines.

The differential capital costs for the SCR system include the costs of the ammonia storage/injection system, the catalytic reactors, HRSG modifications and balance of plant equipment.

TABLE 6-1. COMPARATIVE CAPITAL COSTS OF ALTERNATIVE NO_x CONTROL TECHNOLOGY*

	Low NO _x Combustor Design <u>Plus SCR</u>	Low NO _x Combustor Design <u>Design</u>
Differential combustion turbine costs	Base	Base
SCR reactors	\$1,990,000	NA
Ammonia storage and injection equipment	\$200,000	NA
HRSG Modification	NA	Base
Water Treatment, Storage and injection equipment	NA	Base
Balance of plant	<u>\$60,000</u>	<u>Base</u>
Direct capital cost (1990)	\$2,250,000	Base
Contingency	\$230,000	Base
Escalation	<u>\$280,000</u>	<u>Base</u>
Direct capital cost	\$2,760,000	Base
Indirects	\$410,000	Base
Interest during construction	<u>\$160,000</u>	<u>Base</u>
Total Capital Costs (1992)	\$3,330,000	Base

*Based on one turbine.

TABLE 6-2. COMPARATIVE LEVELIZED ANNUAL COSTS OF ALTERNATIVE NO_x CONTROL TECHNOLOGY*

	Low NO _x Combustor Design Plus SCR	Low NO _x Combustor Design
Operation and maintenance costs	\$1,090,000	Base
Ammonia	\$90,000	NA
Energy	\$210,000	Base
Generating Cost Adjustment	\$270,000	Base
Fixed charges	<u>\$530,000</u>	<u>Base</u>
Total Annual Costs	\$2,190,000	Base
Annual NO _x Emissions (tpy)	150	425
Incremental Annual NO _x Emissions Reduction (tpy)	275	Base
Incremental Levelized Cost per Ton of NO _x Removed	\$7,960	Base

*Based on one turbine and 8,760 hours/year of natural gas fired operation at ISO conditions (59 F and 60 percent relative humidity).

In addition to the 1990 equipment costs of the two alternatives, the total capital costs include a contingency charge, escalation, indirect costs, and interest during construction.

The levelized annual costs assume a total station fuel consumption of about 8.5×10^6 MMBtu/yr (8,760 h/yr per turbine at base load). This same annual fuel consumption was used in Section 3.0 of this application as the basis for determining pollutant applicability to the PSD Program.

Levelized annual costs include operating and maintenance costs (including catalyst replacement), ammonia additive, energy, lost generating capacity and fixed charges on capital investment. The differential energy cost and lost generating capacity for the SCR alternative is the result of the reduced net output of the turbine due to the additional back pressure added by the SCR and the energy requirements of the associated equipment.

The incremental levelized annual cost for adding an SCR to a low NO_x combustor is about \$2.2 million/year. This cost results in an incremental removal cost of approximately \$7,960 per ton of NO_x reduction (275 tons per year while burning natural gas).

6.2.3 Other Considerations

The following lists other considerations that effect the operation of the facility.

- o Compared to the low NO_x combustor with water or steam injection, the energy requirements of the SCR system would reduce the output of the combustion turbines by approximately one percent.
- o The use of an SCR system could result in a negative environmental impact due to the release of quantities of unreacted ammonia to the atmosphere. Ammonia and a number of amine compounds are recognized hazardous air pollutants. Although ammonia emissions are not regulated nationally, at least one air pollution control district in California recently set a limit of 10 ppm. Unreacted ammonia emissions from an SCR system could average 7 to 10 ppm. This emission level could create an objectionable odor and health hazards.

3 { Ammonia is also a hazardous material. Accordingly, this material must be handled and stored with extreme care. Working on and around ammonia equipment will cause operational personnel to be less productive and functional than under normal working conditions.

4 { o Over time with exposure to trace elements in the flue gas, catalysts become contaminated and could be classified as a hazardous waste. Therefore, the spent catalyst must be handled and disposed of following hazardous waste procedures. Some catalytic elements are toxic and must be replaced periodically. This replacement must follow hazardous waste disposal procedures.

o The ambient air modeling did not show any significant impacts for NO_x emissions of 25/42 ppmvd (at 15 percent O₂) when burning natural gas or fuel oil, respectively.

6.2.4 Conclusions

Installation of an SCR system designed to meet a NO_x emission limit of 9 ppm (approximately 64 percent reduction) would add over \$3.3 million to the capital cost of the project. The addition of an SCR system increases the total levelized annual costs for the project by about \$2.2 million. This increase results in an incremental removal cost of approximately \$7,960 per ton of NO_x removed while burning natural gas (100 percent capacity factor).

Natural gas will be the primary fuel for the project and fuel oil will be used only in the event of an interruption of natural gas supply. The use of an SCR system could result in adverse environmental effects due to unreacted ammonia being released to the atmosphere causing a potential human health hazard.

Therefore, based on economic, energy, and environmental considerations NO_x BACT proposed for this combustion turbine facility is the use of a low NO_x combustor with water or steam injection. The low NO_x combustor will achieve NO_x emissions of 25/42 ppmvd (at 15 percent O₂) while burning natural gas or No. 2 fuel oil, respectively. The economics are based on

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operating the unit for 8,760 hours per year (100 percent capacity factor). This proposed level of BACT represents a level of NO_x control that is lower than recent determinations in the state of Florida.

6.3 SULFUR DIOXIDE AND SULFURIC ACID MIST EMISSIONS

The NSPS established by EPA for emissions from combustion turbines sets a maximum SO_2 level in the flue gas of 150 ppmvd (at 15 percent O_2) and a maximum fuel sulfur content of 0.8 percent by weight (40 CFR 60.333). The EPA has not established a combustion turbine NSPS for sulfuric acid mist (H_2SO_4). The turbine manufacturers' emission data indicate that on average, approximately 3 percent of the SO_2 in the flue gas is oxidized to SO_3 which combines with water to form H_2SO_4 .

Typically, natural gas has only a trace of sulfur (2,000 grains per million standard cubic feet or less). Recent permits for No. 2 fuel oil fired combustion turbines have included limits on maximum allowable fuel sulfur contents. Current BACT/LAER Clearinghouse documents do not list any natural gas, or No. 2 fuel oil fired combustion turbines that are required to use flue gas desulfurization (FGD) systems to meet SO_2 emission requirements. Addition of an FGD system would be a superfluous method of SO_2 emission control. The significant capital and operating cost associated with FGD systems would result in termination of the project.

The primary fuel for the Lakeland Combustion Turbine Project will be natural gas. Fuel oil will only be fired when the supply of natural gas is limited to this project.

The use of low sulfur fuel oil (maximum of 0.20 percent sulfur) would impose no differential capital costs on the project. Additionally modeling showed that no significant impacts for SO_2 emissions resulted when burning 0.20 percent sulfur fuel oil.

Based on economic, energy, and environmental considerations limitation of the fuel sulfur content to 0.20 percent by weight is proposed as BACT for the SO_2 emissions during oil firing from the Lakeland Combustion Turbine Project. Natural gas typically contains only trace amounts of sulfur and no further controls will be necessary.

6.4 PARTICULATE MATTER EMISSIONS

The natural gas and No. 2 fuel oil fuels to be used in the proposed combustion turbines will only contain trace quantities of noncombustible material. Therefore, emission of particulate matter from the combustion turbine facility will be controlled by ensuring as complete combustion of the fuel as possible. The NSPS for combustion turbines do not establish an emission limit for particulate matter. A review of the EPA's BACT/LAER Clearinghouse documents did not reveal any post-combustion particulate matter control technologies being used on gas/oil fueled combustion turbines. The manufacturers' standard combustion turbine operating procedures will ensure as complete combustion of the fuel as possible. Accordingly, combustion control is proposed as BACT for total particulate matter and PM-10.

6.5 BERYLLIUM EMISSIONS

The emissions of beryllium (Be) from the combustion turbine facility will be determined by the Be content of the fuels. Natural gas has no measurable Be content and the Be emissions when firing natural gas are predicted to be insignificant on an annual basis. No. 2 fuel oil typically contains a trace amount of Be, on the order of 2.5×10^{-6} pounds per million Btu (lb/MMBtu). The annual Be emissions when firing fuel oil for 8,760 hours/year (100 percent capacity factor) are predicted to be 0.01 tons per year. While this is above EPA's significant emission rate of 4.0×10^{-4} tons per year, a review of the EPA's BACT/LAER Clearinghouse documents did not reveal any combustion turbine project which has been required to install supplemental pollution control equipment to reduce Be emissions. Accordingly, complete combustion of the No. 2 fuel oil is proposed as BACT for Be emissions.

6.6 CARBON MONOXIDE (CO)

Based on a review of EPA's BACT/LAER Clearinghouse - A Compilation of Control Technology Determinations (1990 edition), a combustion turbine with proper combustion control and an oxidizing catalyst that limits carbon monoxide (CO) emissions to 2 ppmvd represents LAER.

Due to the combustion characteristics of a combustion turbine, it is necessary to consider the BACT determination for the emissions of NO_x in establishing the emissions of CO. Typically, measures taken to minimize the formation of NO_x during combustion inhibit complete combustion which increases the emissions of CO.

CO is formed during the combustion process due to incomplete oxidation of the carbon contained in the fuel. CO is limited by ensuring complete, efficient combustion of the fuel in the turbines. High combustion temperatures, adequate excess air, and good fuel/air mixing during combustion minimize CO. Therefore, staging combustion and lowering combustion temperatures by water injection, which are used for NO_x emission control, can be counterproductive with regard to CO emissions.

Combustion turbines designed to meet the proposed BACT NO_x emissions of 25/42 ppmvd (gas/oil) will be capable of maintaining CO emission rates of 25 ppmvd (15 percent O_2). At this emission rate, the annual emission will exceed the PSD significance level for carbon monoxide. The use of an CO catalyst would not result in appreciably lower CO emissions.

6.6.1 Catalytic Reduction.

Catalytic reduction is a post-combustion method for removal of CO emissions. The process oxidizes CO to CO_2 with the use of a catalyst. Carbon monoxide control catalyst utilizes a precious metal based catalyst to promote to oxidation process. None of the catalyst components are considered toxic.

The optimum flue gas temperature range for CO catalyst operation is between 850 F and 1100 F. Flue gas from the combustion turbine will typically be between 950 F to 1100 F. Therefore, a CO catalyst can be installed between the discharge of the combustion turbine and the inlet to the HRSG.

6.6.2 Capital and Operating Costs.

Table 6-3 presents the capital and levelized annual costs of a CO emissions control system. The CO emissions are based on firing natural gas for a maximum of 8,760 hr/yr (100 percent capacity factor) in the turbine. The capital costs of the SCR system includes the cost of the catalytic

TABLE 6-3 COMPARATIVE CAPITAL COSTS OF ALTERNATIVE CO
CONTROL TECHNOLOGY*

	Carbon Monoxide Catalyst
SCR reactors	\$890,000
Balance of plant	<u>\$100,000</u>
Direct capital cost (1990)	\$990,000
Contingency	\$100,000
Escalation	<u>\$120,000</u>
Direct capital cost	\$1,210,000
Indirects	\$180,000
Interest during construction	<u>\$70,000</u>
Total Capital Costs (1992)	\$1,460,000
Operation and maintenance costs	\$560,000
Generating Cost Adjustment	\$250,000
Fixed charges	<u>\$230,000</u>
Total Annual Costs	\$1,040,000
Annual CO Emissions (tpy)	140
Incremental Annual CO Emissions Reduction (tpy)	140
Incremental Levelized Cost per Ton of CO Removed	\$7,430

*Based on one turbine and 8,760 hours/year of natural gas fired operation at ISO conditions (59 F and 60 percent relative humidity).

reactor and balance-of-plant equipment. In addition to the 1990 equipment costs, the total capital costs include a contingency charge, escalation, indirect costs, and interest during construction. Levelized annual costs include operating and maintenance costs (including catalyst replacement), lost generating capacity, and fixed charges on capital investment.

An incremental levelized cost for the SCR of \$1.0 million/year results in an incremental removal cost of approximately \$7,340 per ton of CO removed (140 tons per year while burning natural gas).

6.6.3 Other Considerations.

The following are other considerations that are associated with a CO catalyst.

- o A CO catalyst reactor located downstream of the combustion turbine exhaust will produce an additional backpressure on the combustion turbine. The added backpressure will reduce the output capability of the turbine. Additional backpressure of 3 to 4 inches of water gage would reduce turbine output by approximately 0.5 percent. Lost generating capacity translates directly into lost revenue to the project.
- o A CO catalyst is an oxidizing catalyst, consequently it will also oxidize SO₂ to SO₃ which upon condensation will form sulfuric acid mist. The formation of sulfuric acid will result in increased corrosion in the cold end of the heat recovery steam generator.
- o There is no long term operating experience with a CO catalyst on the size of combustion turbine proposed for this project.

6.6.4 Conclusions.

Installation of a CO catalyst control system designed to meet a CO emission limit of 10 ppmvd would add approximately \$1.5 million to the capital cost of the project. The total levelized annual costs for the

project increases by \$1.0 million resulting in an incremental removal cost of approximately \$7,430 per ton of CO removed while burning natural gas (100 percent capacity factor).

Therefore, based on economic, energy, and environmental considerations CO BACT proposed for this combustion turbine facility is the use of good combustion controls to achieve CO emissions of 25 ppmvd when burning natural gas or fuel oil and operating the unit for 8,760 hours per year (100 percent capacity factor).

6.7 OTHER EMISSIONS

The following sections discuss pollutants which are either below the significant emission levels established for the PSD program or have been identified by EPA as hazardous pollutants. Federal and state regulations do not require that BACT be applied for these pollutants, but the effects of the proposed BACT determinations on these pollutants must be considered.

6.7.1 Other Regulated and Hazardous Pollutants

Table 6-4 presents uncontrolled emission estimates for other regulated pollutants (fluorides, mercury, and lead) and hazardous pollutants when firing No. 2 fuel oil. These emission rates have been developed based on manufacturers' information and on information contained in the EPA publication Toxic Air Pollutant Emission Factors - A Compilation For Selected Air Toxic Compounds and Sources (EPA-450/2-88-006a).

The only identified methods of controlling the emission of these pollutants are complete combustion of the fuel and the inherent quality of the fuel. Injection of water into the turbines to control NO_x emissions is not expected to have a significant effect on the emissions of these pollutants. Complete combustion will be required to achieve the identified emission rates of formaldehyde. The quality of the fuel will comply with standard commercial No. 2 fuel oil.

When fuel oil is used, no adverse environmental impacts would occur at the tabulated, uncontrolled emission rates.

TABLE 6-4. OTHER REGULATED AND HAZARDOUS POLLUTANT EMISSIONS

<u>Pollutant</u>	<u>Emission Rate lb/MMBtu</u>	<u>Annual Emission*</u> tpy
Arsenic	4.2 E-6	0.02
Beryllium	2.5 E-6	0.01
Cadmium	1.1 E-5	0.05
Chromium	4.8 E-5	0.20
Copper	2.8 E-4	1.16
Formaldehyde**	4.1 E-4	1.70
Lead	2.8 E-5	0.12
Manganese	2.6 E-5	0.11
Mercury	3.0 E-6	0.012
Nickel	1.7 E-4	0.70

*Annual emissions are total for one combustion turbine and are based on annual operation of 8,760 hours firing No. 2 fuel oil at ISO conditions (59 F and 60 percent relative humidity) and a fuel burn rate of 945.5 MMBtu/h.

**Formaldehyde is also found in natural gas combustion. The emission rates are 8.8 E-5 lb/MMBtu or 0.37 tpy.

APPENDIX A

DIRECTION-SPECIFIC BUILDING ANALYSIS

RBRZWAKE

IBM-PC VERSION (2.0)

(C) COPYRIGHT 1989, TRINITY CONSULTANTS, INC.

SERIAL NUMBER 6440 SOLD TO BLACK & VEATCH CONSULTING ENG

RUN NAME: TEMP

RUN BEGAN ON 09-28-90 AT 08:07:58

NUMBER OF SOURCES = 2

THE FOLLOWING OPTIONS HAVE BEEN CHOSEN:

CALCULATIONS ARE MADE FOR THE ISCST MODEL.

ALL STACKS MUST BE WITHIN 5L TO BE CONSIDERED FOR DIRECTION SPECIFIC DOWNWASH.

DOWNWASH IS CALCULATED IN 36 RADIAL DIRECTIONS.

BUILDINGS ARE COMBINED REPEATEDLY.

ALGORITHMS:

0 = NO DOWNWASH

1 = HUBER-SNYDER DOWNWASH

2 = SCHULMAN-SCIRE DOWNWASH

INPUT BUILDINGS

DESCRIPTION	BLDG #	BLDG HT(M)	# OF CORNERS	X(M)	Y(M)
NW CORNER GEN BLDG.	1	37.03	4		
				50.60	57.00
				68.58	57.00
				68.58	70.41
				50.60	70.41
GEN BLDG.	2	20.27	6		
				52.43	-27.13
				91.44	-27.13
				91.44	77.11
				69.80	77.11
				69.80	52.43
				52.43	52.43
STORAGE TANK 1	3	15.24	10		
				-28.87	42.99
				-25.99	39.03
				-25.99	34.13
				-28.87	30.17
				-33.53	28.66
				-38.19	30.17
				-41.07	34.13
				-41.07	39.03
				-38.19	42.99
				-33.53	44.51
STORAGE TANK 2	4	15.24	10		
				9.23	42.99
				12.11	39.03
				12.11	34.13
				9.23	30.17
				4.57	28.66
				-0.09	30.17
				-2.97	34.13
				-2.97	39.03
				-0.09	42.99
				4.57	44.51
AIR INLET	5	13.72	4		
				-12.80	5.79
				-4.27	5.79
				-4.27	18.29
				-12.80	18.29

COMBINED BUILDINGS

STRUCTURE 1 HAS A HEIGHT 37.03 METERS AND CONTAINS THE FOLLOWING BUILDINGS:
BUILDING # 1: NW CORNER GEN BLDG.

STRUCTURE 2 HAS A HEIGHT 20.27 METERS AND CONTAINS THE FOLLOWING BUILDINGS:
BUILDING # 1: NW CORNER GEN BLDG.
BUILDING # 2: GEN BLDG.

STRUCTURE 3 HAS A HEIGHT 15.24 METERS AND CONTAINS THE FOLLOWING BUILDINGS:
BUILDING # 3: STORAGE TANK 1

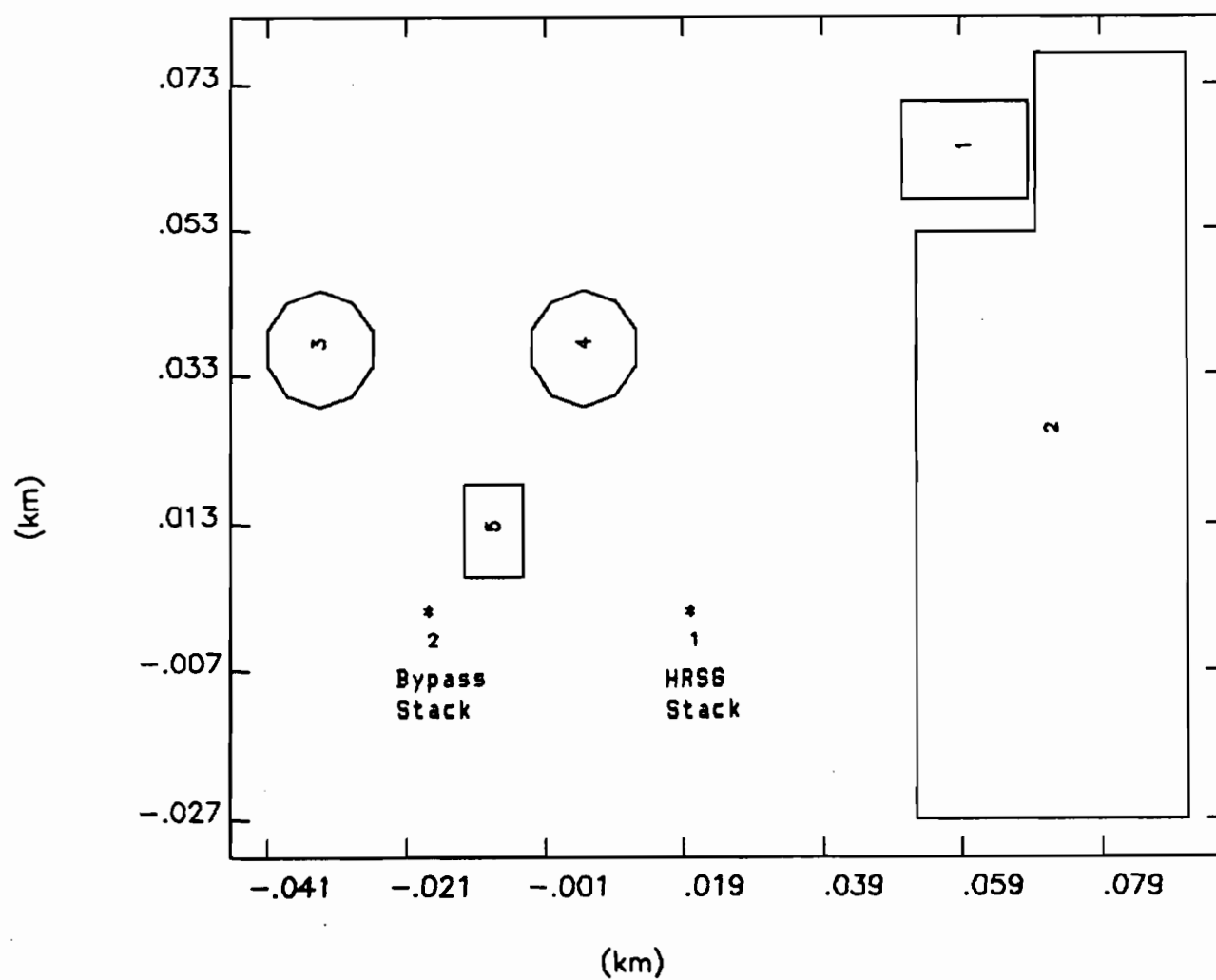
STRUCTURE 4 HAS A HEIGHT 15.24 METERS AND CONTAINS THE FOLLOWING BUILDINGS:
BUILDING # 4: STORAGE TANK 2

STRUCTURE 5 HAS A HEIGHT 13.72 METERS AND CONTAINS THE FOLLOWING BUILDINGS:
BUILDING # 4: STORAGE TANK 2
BUILDING # 5: AIR INLET

INPUT STACKS

STACK ID #	STACK #	STACK HT(M)	X(M)	Y(M)
1	1	47.24	18.90	.00
2	2	30.48	-18.90	.00

CITY OF LAKELAND SITE



STACK ID # 1, STACK # 1

THE DOMINANT STRUCTURE WITHIN 5L IS
STRUC= 1 H= 37.03 W= 22.43 GEP= 70.68

DIRECTION SPECIFIC BUILDING DOWNWASH					
DEGREE	STRUCTURE #	HEIGHT	WIDTH	GEP	ALGORITHM
10	0	.00	.00	.00	0
20	2	20.27	71.74	50.68	1
30	2	20.27	84.14	50.68	1
40	2	20.27	93.98	50.68	1
50	2	20.27	100.97	50.68	1
60	2	20.27	104.89	50.68	1
70	2	20.27	105.63	50.68	1
80	2	20.27	106.41	50.68	1
90	2	20.27	104.24	50.68	1
100	2	20.27	109.43	50.68	1
110	2	20.27	111.30	50.68	1
120	2	20.27	109.78	50.68	1
130	2	20.27	104.93	50.68	1
140	2	20.27	96.89	50.68	1
150	0	.00	.00	.00	0
160	0	.00	.00	.00	0
170	0	.00	.00	.00	0
180	0	.00	.00	.00	0
190	0	.00	.00	.00	0
200	1	37.03	21.48	69.25	2
210	1	37.03	22.28	70.44	2
220	1	37.03	22.39	70.62	2
230	2	20.27	100.97	50.68	1
240	2	20.27	104.89	50.68	1
250	2	20.27	105.63	50.68	1
260	2	20.27	106.41	50.68	1
270	2	20.27	104.24	50.68	1
280	2	20.27	109.43	50.68	1
290	2	20.27	111.30	50.68	1
300	2	20.27	109.78	50.68	1
310	2	20.27	104.93	50.68	1
320	2	20.27	96.89	50.68	1
330	0	.00	.00	.00	0
340	0	.00	.00	.00	0
350	0	.00	.00	.00	0
360	0	.00	.00	.00	0

STACK ID # 2, STACK # 2

THE DOMINANT STRUCTURE WITHIN 5L IS
STRUC= 1 H= 37.03 W= 22.43 GEP= 70.68

DIRECTION SPECIFIC BUILDING DOWNWASH					
DEGREE	STRUCTURE #	HEIGHT	WIDTH	GEP	ALGORITHM
10	5	13.72	21.78	34.30	1
20	5	13.72	17.99	34.30	1
30	5	13.72	15.50	34.30	1
40	2	20.27	93.98	50.68	1
50	2	20.27	100.97	50.68	1
60	5	13.72	30.13	34.30	1
70	5	13.72	33.53	34.30	1
80	5	13.72	36.59	34.30	1
90	5	13.72	38.71	34.30	1
100	5	13.72	41.14	34.30	1
110	0	.00	.00	.00	0
120	0	.00	.00	.00	0
130	0	.00	.00	.00	0
140	3	15.24	15.38	38.10	1
150	3	15.24	15.50	38.10	1
160	3	15.24	15.84	38.10	1
170	3	15.24	15.70	38.10	1
180	3	15.24	15.07	37.85	1
190	5	13.72	21.78	34.30	1
200	4	15.24	15.84	38.10	1
210	4	15.24	15.50	38.10	1
220	1	37.03	22.39	70.62	2
230	1	37.03	21.83	69.77	2
240	1	37.03	20.60	67.94	2
250	2	20.27	105.63	50.68	1
260	2	20.27	106.41	50.68	1
270	2	20.27	104.24	50.68	1
280	2	20.27	109.43	50.68	1
290	2	20.27	111.30	50.68	1
300	0	.00	.00	.00	0
310	0	.00	.00	.00	0
320	3	15.24	15.38	38.10	1
330	0	.00	.00	.00	0
340	0	.00	.00	.00	0
350	0	.00	.00	.00	0
360	3	15.24	15.07	37.85	1

STACK # 1

STACK ID: 1, BUILDING HEIGHT: 37.03, BUILDING WIDTH: 22.43
 .00 20.27 20.27 20.27 20.27 20.27 20.27 20.27 20.27 20.27 20.27 20.27
 20.27 20.27 .00 .00 .00 .00 .00 37.03 37.03 37.03 20.27 20.27
 20.27 20.27 20.27 20.27 20.27 20.27 20.27 20.27 .00 .00 .00 .00
 .00 71.74 84.14 93.98 100.97 104.89 105.63 106.41 104.24 109.43 111.30 109.78
 104.93 96.89 .00 .00 .00 .00 .00 21.48 22.28 22.39 100.97 104.89
 105.63 106.41 104.24 109.43 111.30 109.78 104.93 96.89 .00 .00 .00 .00

STACK # 2

STACK ID: 2, BUILDING HEIGHT: 37.03, BUILDING WIDTH: 22.43
 13.72 13.72 13.72 20.27 20.27 13.72 13.72 13.72 13.72 13.72 .00 .00
 .00 15.24 15.24 15.24 15.24 15.24 13.72 15.24 15.24 37.03 37.03 37.03
 20.27 20.27 20.27 20.27 20.27 .00 .00 15.24 .00 .00 .00 15.24
 21.78 17.99 15.50 93.98 100.97 30.13 33.53 36.59 38.71 41.14 .00 .00
 .00 15.38 15.50 15.84 15.70 15.07 21.78 15.84 15.50 22.39 21.83 20.60
 105.63 106.41 104.24 109.43 111.30 .00 .00 15.38 .00 .00 .00 15.07

APPENDIX B

EMISSION CALCULATIONS AND SUPPORT

7.0 ADDITIONAL AMBIENT AIR QUALITY IMPACT ANALYSIS

7.1 VISIBILITY

The nearest PSD Class I area is the Chassahowitzka National Wildlife Refuge, located approximately 90 kilometers northwest of the site. A screening level visibility analysis was performed per EPA's Workbook for Plume Visual Impact Screening Level Analysis (1988). The analysis showed that the proposed facility will have no significant effect on visibility at the Class I area. Appendix D contains the output from EPA's "VISCREEN" model.

7.2 SOILS AND VEGETATION

Ambient air quality standards have been established to protect public health and welfare from any adverse effects of air pollutants. It is not expected that the estimated effects of the proposed project will significantly add to the background pollutant concentrations. Therefore, no adverse effects on soils and terrestrial vegetation is expected.

7.3 GROWTH

The addition of the combustion turbine unit at the City of Lakeland Charles Larsen Power Plant is not expected to induce any secondary growth in the surrounding area.

CALCULATIONS IN SUPPORT OF CITY OF LAKELAND COMBUSTION TURBINE PROJECT
 AMBIENT AIR QUALITY IMPACT ANALYSIS

The following parameters are based on performance estimates of a GE PG7111(EA) combustion turbine (FRAME 7) with water injection to reduce NO_x emissions to 25/42 ppmvd (natural gas/distillate), referenced to 15 percent oxygen.

Fuel Fired	Natural Gas	Distillate
Heat Rate (LHV) @ 25 F, MMBtu/h	1,054.6	1,038.1
@ ISO, MMBtu/h	964.7	945.5
Fuel Flow Rate @ 25 F	18,949 scfm	136.4 gal/min
@ ISO	17,333 scfm	124.2 gal/min
Emission Rates		
NO _x , ppmvd @ 15% O ₂	25	42
1b/h @ 25 F	106	183
1b/h @ ISO	97	167
CO, ppmvd	25	25
1b/h @ 25 F	58	58
1b/h @ ISO	53	54
VOC, ppmvw	1.4	3.5
1b/h @ 25 F	2	5
1b/h @ ISO	2	4.5
Particulate, 1b/h @ 25 F	5	15
1b/h @ ISO	5	15

CALCULATIONS:

Fuel Heat Content - Natural Gas

$$(1,054.6 \times 10^6 \text{ Btu/h}) \times (1 \text{ min}/18,949 \text{ ft}^3) \times (1 \text{ h}/60 \text{ min}) \\ = 928 \text{ Btu/ft}^3$$

Fuel Heat Content - Distillate

$$(1,038.1 \times 10^6 \text{ Btu/h}) \times (1 \text{ min}/136.4 \text{ gal}) \times (1 \text{ h}/60 \text{ min}) \\ = 127,000 \text{ Btu/gal}$$

SO2 Emission Rate - Natural Gas

Assume natural gas contains 2,000 gr S/MCF (AP-42 factor) and that there are 7,000 grains in one pound of sulfur (AP-42 factor).

$$\text{@ 25F: } (18,949 \text{ ft}^3/\text{min}) \times (60 \text{ min/h}) \times (2,000 \text{ gr S}/10^6 \text{ ft}^3) \times \\ (1 \text{ lb S}/7,000 \text{ gr S}) \times (2 \text{ lb SO}_2/1 \text{ lb S}) \\ = 0.65 \text{ lb/h}$$

$$\text{@ ISO: } (17,333 \text{ ft}^3/\text{min}) \times (60 \text{ min/h}) \times (2,000 \text{ gr S}/10^6 \text{ ft}^3) \times \\ (1 \text{ lb S}/7,000 \text{ gr S}) \times (2 \text{ lb SO}_2/1 \text{ lb S}) \\ = 0.59 \text{ lb/h}$$

SO2 Emission Rate - Distillate

Assume distillate contains 0.2 percent sulfur and that there are 7.05 pounds in one gallon of distillate (AP-42 factor).

$$\text{@ 25F: } (136.4 \text{ gal oil/min}) \times (60 \text{ min/h}) \times (0.2 \text{ lb S}/100 \text{ lb oil}) \times \\ (7.05 \text{ lb oil/gal}) \times (2 \text{ lb SO}_2/1 \text{ lb S}) \\ = 231 \text{ lb/h}$$

$$\text{@ ISO: } (124.2 \text{ gal oil/min}) \times (60 \text{ min/h}) \times (0.2 \text{ lb S}/100 \text{ lb oil}) \times \\ (7.05 \text{ lb oil/gal}) \times (2 \text{ lb SO}_2/1 \text{ lb S}) \\ = 210 \text{ lb/h}$$

SO2 Potential Annual Emissions

Assume turbine operates for 8,760 hours per year. ISO condition (59 F and 60 percent relative humidity) pound per hour emission rates are used for annual emissions.

$$\text{Natural Gas: } (0.6 \text{ lb/h}) \times (8,760 \text{ hr/y}) \times (\text{ton}/2,000 \text{ lb}) \\ = 2.6 \text{ tpy}$$

$$\text{Distillate: } (210 \text{ lb/h}) \times (8,760 \text{ hr/y}) \times (\text{ton}/2,000 \text{ lb}) \\ = 920 \text{ tpy}$$

NOx Potential Annual Emissions

Assume turbine operates for 8,760 hours per year (100 percent capacity factor). ISO condition (59 F and 60 percent relative humidity) pound per hour emission rates are used for annual emissions.

$$\begin{aligned}\text{Natural Gas: } & (97 \text{ lb/h}) \times (8,760 \text{ hr/y}) \times (\text{ton}/2,000 \text{ lb}) \\ & = 425 \text{ tpy}\end{aligned}$$

$$\begin{aligned}\text{Distillate: } & (167 \text{ lb/h}) \times (8,760 \text{ hr/y}) \times (\text{ton}/2,000 \text{ lb}) \\ & = 732 \text{ tpy}\end{aligned}$$

CO Potential Annual Emissions

Assume turbine operates for 8,760 hours per year (100 percent capacity factor). ISO condition (59 F and 60 percent relative humidity) pound per hour emission rates are used for annual emissions.

$$\begin{aligned}\text{Natural Gas: } & (53 \text{ lb/h}) \times (8,760 \text{ hr/y}) \times (\text{ton}/2,000 \text{ lb}) \\ & = 232 \text{ tpy}\end{aligned}$$

$$\begin{aligned}\text{Distillate: } & (54 \text{ lb/h}) \times (8,760 \text{ hr/y}) \times (\text{ton}/2,000 \text{ lb}) \\ & = 237 \text{ tpy}\end{aligned}$$

VOC Potential Annual Emissions

Assume turbine operates for 8,760 hours per year (100 percent capacity factor). ISO condition (59 F and 60 percent relative humidity) pound per hour emission rates are used for annual emissions.

$$\begin{aligned}\text{Natural Gas: } & (2.0 \text{ lb/h}) \times (8,760 \text{ hr/y}) \times (\text{ton}/2,000 \text{ lb}) \\ & = 8.8 \text{ tpy}\end{aligned}$$

$$\begin{aligned}\text{Distillate: } & (4.5 \text{ lb/h}) \times (8,760 \text{ hr/y}) \times (\text{ton}/2,000 \text{ lb}) \\ & = 20 \text{ tpy}\end{aligned}$$

Particulate Potential Annual Emissions

Assume turbine operates for 8,760 hours per year (100 percent capacity factor). ISO condition (59 F and 60 percent relative humidity) pound per hour emission rates are used for annual emissions. It is assumed all particulate matter is less than 10 microns in diameter (PM₁₀).

$$\begin{aligned}\text{Natural Gas: } & (5 \text{ lb/h}) \times (8,760 \text{ hr/y}) \times (\text{ton}/2,000 \text{ lb}) \\ & = 22 \text{ tpy}\end{aligned}$$

$$\begin{aligned}\text{Distillate: } & (15 \text{ lb/h}) \times (8,760 \text{ hr/y}) \times (\text{ton}/2,000 \text{ lb}) \\ & = 66 \text{ tpy}\end{aligned}$$

Lead Potential Annual Emissions

Assume turbine operates for 8,760 hours per year (100 percent capacity factor). ISO condition (59 F and 60 percent relative humidity) pound per hour emission rates are used for annual emissions. Lead emission taken from EPA's Toxic Air Pollutant Emissions Factors - A Compilation For Selected Air Toxic Compounds and Sources (EPA-450/2-88-006a).

Natural Gas: (No measurable emissions)

$$\begin{aligned}\text{Distillate: } & (2.8 \times 10^{-5} \text{ lb/MMBtu}) \times (945.5 \text{ MMBtu/h}) \times (8,760 \text{ hr/y}) \\ & \times (\text{ton}/2,000 \text{ lb}) \\ & = 0.12 \text{ tpy}\end{aligned}$$

Beryllium Potential Annual Emissions

Assume turbine operates for 8,760 hours per year (100 percent capacity factor). ISO condition (59 F and 60 percent relative humidity) pound per hour emission rates are used for annual emissions. Emission factor taken from EPA's Toxic Air Pollutant Emissions Factors - A Compilation For Selected Air Toxic Compounds and Sources (EPA-450/2-88-006a).

Natural Gas: (No measurable emissions)

$$\begin{aligned}\text{Distillate: } & (2.5 \times 10^{-6} \text{ lb/MMBtu}) \times (945.5 \text{ MMBtu/h}) \times (8,760 \text{ hr/y}) \\ & \times (\text{ton}/2,000 \text{ lb}) \\ & = 0.01 \text{ tpy}\end{aligned}$$

Mercury Potential Annual Emissions

Assume turbine operates for 8,760 hours per year (100 percent capacity factor). ISO condition (59 F and 60 percent relative humidity) pound per hour emission rates are used for annual emissions. Emission factor taken from EPA's Toxic Air Pollutant Emissions Factors - A Compilation For Selected Air Toxic Compounds and Sources (EPA-450/2-88-006a).

Natural Gas: (No measurable emissions)

$$\begin{aligned}\text{Distillate: } & (3.0 \times 10^{-6} \text{ lb/MMBtu}) \times (945.5 \text{ MMBtu/h}) \times (8,760 \text{ hr/y}) \\ & \times (\text{ton}/2,000 \text{ lb}) \\ & = 0.01 \text{ tpy}\end{aligned}$$

Sulfuric Acid Mist Potential Annual Emissions

Assume turbine operates for 8,760 hours per year (100 percent capacity factor). ISO condition (59 F and 60 percent relative humidity) pound per hour emission rates are used for annual emissions. It is assumed that approximately 3 percent of the SO₂ is converted to H₂SO₄.

Natural Gas: $(0.03) \times (2.6 \text{ tpy}) = 0.08 \text{ tpy}$

Distillate: $(0.03) \times (920 \text{ tpy}) = 27.6 \text{ tpy}$

Other Regulated Pollutant Potential Annual Emissions

Asbestos, Vinyl Chloride, Fluorides, Total Reduced S, Reduced S, and H_2S have no measurable emissions for either natural gas or distillate combustion.

APPENDIX C

LISTING OF MODELING RUNS

LISTING OF MODELING RUNS SUPPORTING THE CITY OF LAKELAND, FLORIDA AMBIENT AIR QUALITY IMPACT ANALYSIS

Model Output File (.LST)	Model Input File (.DAT)	Model Stack File (.PNT)	Description
<u>ISCST RUNS - COMBINED CYCLE (1982-1986)</u>			
QC82	QC82	QC155	155-ft HRSG Stack, F.O. Combustion*, Std. Receptors**, 1982
QC83	QC83	QC155	155-ft HRSG Stack, F.O. Combustion*, Std. Receptors**, 1983
QC84	QC84	QC155	155-ft HRSG Stack, F.O. Combustion*, Std. Receptors**, 1984
QC85	QC85	QC155	155-ft HRSG Stack, F.O. Combustion*, Std. Receptors**, 1985
QC86	QC86	QC155	155-ft HRSG Stack, F.O. Combustion*, Std. Receptors**, 1986
<u>ISCST RUNS - SIMPLE CYCLE (1982-1986)</u>			
QS82	QS82	QS100	100-ft Bypass Stack, F.O. Combustion*, Std. Receptors**, 1982
QS83	QS83	QS100	100-ft Bypass Stack, F.O. Combustion*, Std. Receptors**, 1983
QS84	QS84	QS100	100-ft Bypass Stack, F.O. Combustion*, Std. Receptors**, 1984
QS85	QS85	QS100	100-ft Bypass Stack, F.O. Combustion*, Std. Receptors**, 1985
QS86	QS86	QS100	100-ft Bypass Stack, F.O. Combustion*, Std. Receptors**, 1986

*F.O. - Fuel Oil

**Standard Receptors: 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 1.25, 1.5, 1.75, 2.0, 2.25, 2.5, 2.75, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0, 11.0, 12.0, 13.0, 14.0, 15.0 km. In addition, discrete receptors were placed along the property boundary at each of the 36 radial directions.

APPENDIX D

"VISCREEN" VISIBILITY MODEL RESULTS

Visual Effects Screening Analysis for
Source: CITY OF LAKELAND CT
Class I Area: CHASSAHOVITZKA W.R.

*** Level-1 Screening ***
Input Emissions for

Particulates	15.00	LB /HR
NOx (as NO2)	183.00	LB /HR
Primary NO2	.00	LB /HR
Soot	.00	LB /HR
Primary SO4	.00	LB /HR

**** Default Particle Characteristics Assumed

Transport Scenario Specifications:

Background Ozone:	.04 ppm
Background Visual Range:	25.00 km
Source-Observer Distance:	86.00 km
Min. Source-Class I Distance:	86.00 km
Max. Source-Class I Distance:	107.00 km
Plume-Source-Observer Angle:	11.25 degrees
Stability:	4
Wind Speed:	1.00 m/s

R E S U L T S

Asterisks (*) indicate plume impacts that exceed screening criteria

Maximum Visual Impacts INSIDE Class I Area
Screening Criteria ARE NOT Exceeded

Backgrnd	Theta	Azi	Distance	Alpha	Delta E		Contrast	
					Crit	Plume	Crit	Plume
SKY	10.	84.	86.0	84.	2.00	.070	.05	-.000
SKY	140.	84.	86.0	84.	2.00	.021	.05	-.001
TERRAIN	10.	84.	86.0	84.	2.00	.004	.05	.000
TERRAIN	140.	84.	86.0	84.	2.00	.001	.05	.000

Maximum Visual Impacts OUTSIDE Class I Area
Screening Criteria ARE NOT Exceeded

Backgrnd	Theta	Azi	Distance	Alpha	Delta E		Contrast	
					Crit	Plume	Crit	Plume
SKY	10.	75.	83.2	94.	2.00	.073	.05	-.000
SKY	140.	75.	83.2	94.	2.00	.022	.05	-.001
TERRAIN	10.	60.	78.7	109.	2.00	.006	.05	.000
TERRAIN	140.	60.	78.7	109.	2.00	.002	.05	.000



December 11, 1990

Mr. Dale Twachtmann, Secretary
Florida Department of Environmental Regulation
2600 Blair Stone Road
Twin Towers Office Building
Tallahassee, Florida 32399-2400

Dear Sir:

This is to authorize Alfred M. Dodd to act as the authorized representative for the City of Lakeland in dealing with the Florida Department of Environmental Regulation in all matters pertaining to the New Generation Addition Project at Larsen Power Plant.

It is further acknowledged that this letter of authorization shall remain in effect and be applied to all matters requiring authorization until your office is notified of a change of representative.

Sincerely,



E. S. Strickland
City Manager

RGS/JAL/AMD/nl

PERMITS

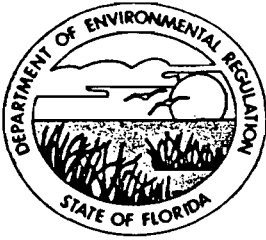
Unit No. 4 - DER Permit Number AO53-175869

Unit No. 5 - DER Permit Number AO53-175868

Unit No. 6 - DER Permit Number AO53-175871

Unit No. 7 - DER Permit Number AO53-175870

IMPORTANT PAPERS



Florida Department of Environmental Regulation

Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347 • 813-623-5561

Bob Martinez, Governor

Dale Twachtman, Secretary

John Shearer, Assistant Secretary

Dr. Richard Garrity, Deputy Assistant Secretary

NOTICE OF PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF PERMIT ISSUANCE

April 27, 1990

In the Matter of an Application DER File No. A053-175869
for Permit by: Polk County
Mr. Harlan C. Proctor, Superintendent
City of Lakeland
Department of Electric and Water Utilities
Charles Larsen Power Plant - Unit No. 4
2002 East U.S. Highway 92
Lakeland, Florida 33801

Enclosed is Permit Number A053-175869 to Operate Unit #4 at the Charles Larsen Power Plant located at 2002 East U.S. Highway 92, Lakeland, issued pursuant to Section 403, Florida Statutes.

A person whose substantial interests are affected by this permit may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of receipt of this permit. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;

(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;

(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by Petitioner, if any;

(e) A statement of facts which petitioner contends warrants reversal or modification of the Department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this permit. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

This permit is final and effective on the date filed with the Clerk of the Department unless a petition is filed in accordance with the above paragraphs 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, F.A.C. 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, Florida 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 date the Final Order is filed with the Clerk of the Department.

Executed in Tampa, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Gary A. Maier

Gary A. Maier, BS ChE, JD
4520 Oak Fair Boulevard
Tampa, Florida 33610-7347
Phone (813) 623-5561 x360

CERTIFICATE OF SERVICE

This is to certify that this NOTICE OF PERMIT and all
copies were mailed before the close of business on
APR 30 1990 to the listed persons.

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant
to Section 120.52(9), Florida
Statutes, with the designated
Department Clerk, receipt of
which is hereby acknowledged.

Marilyn Quispe
Clerk

APR 30 1990
Date



Florida Department of Environmental Regulation

Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347 • 813-623-5561

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary

Dr. Richard Garrity, Deputy Assistant Secretary

PERMITTEE:

City of Lakeland Department of
Electric and Water Utilities
1000 East Parker St.
Lakeland, FL. 33801

PERMIT/CERTIFICATION

Permit No: AO53-175869
County: Polk
Expiration Date: 05/17/95
Project: Charles Larsen
Power Plant, Unit #4

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rules 17-2 & 17-4. 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:

For Operation of the nominal 20 MW (electric) Steam Generator designated as Charles Larsen Memorial Power Plant Unit #4. This source is fired on No. 6 fuel oil with a maximum heat input of 277.2 MMBTU per hour, or natural gas with a maximum heat input of 278.8 MMBTU per hour.

Location: 2002 East U.S. Highway 92, Lakeland, Polk County

UTM: 17-409.0 E 3106.3 N NEDS NO: 0003 Point ID: 01

Replaces Permit No.: AO53-99003

PERMITTEE:
City of Lakeland Department of
Electric and Water Utilities
1000 East Parker St.
Lakeland, FL. 33801

PERMIT/CERTIFICATION
Permit No: A053-175869
County: Polk
Expiration Date: 05/17/95
Project: Charles Larsen
Power Plant, Unit #4

SPECIFIC CONDITIONS:

1. A part of this permit is the attached 15 General Conditions.
2. Visible Emissions shall not exceed 20% opacity except for one two-minute period per hour during which opacity shall not exceed 40%. (Rule 17-2.600(5)(a)1., F.A.C.).
3. Particulate Matter Emissions shall not exceed 0.1 pound per million Btu heat input. (Rule 17-2.600(5)(a)2., F.A.C.).
4. Sulfur Dioxide Emissions shall not exceed 2.75 pounds per million Btu heat input. (Rule 17-2.600(5)(a)3.a.(xi), F.A.C.).
5. Excess emissions from boiler cleaning (soot blowing) or load change are permitted provided that,
 - (A) the duration of such excess emissions shall not exceed 3 hours in any 24 hour period,
 - (B) the visible emissions shall not exceed 60% opacity,
 - (C) the particulate emissions shall not exceed an average of 0.3 pound per million BTU heat input during the 3 hour period,
 - (D) best operational practices to minimize emissions are adhered to, AND
 - (E) the duration of excess emissions shall be minimized. (Rule 17-2.250, F.A.C.)
6. The heat input rate shall not exceed 277.2 MM Btu per hour when burning fuel oil. The heat input rate shall not exceed 278.8 MM Btu per hour when burning natural gas. If fuel oil and natural gas are burned simultaneously in any combination, then the maximum permitted heat input rate shall be determined by proration.
7. This source is permitted to operate 24 hours/day, 7 days/week, and 52 weeks/year (8760 hours/year).

PERMITTEE:

City of Lakeland Department of
Electric and Water Utilities
1000 East Parker St.
Lakeland, FL. 33801

PERMIT/CERTIFICATION

Permit No: A053-175869
County: Polk
Expiration Date: 05/17/95
Project: Charles Larsen
Power Plant, Unit #4

SPECIFIC CONDITIONS:

8. Test the emissions, under both normal and soot blowing conditions, for the following pollutants at intervals of 12 months from the date March 28, 1989 and submit a copy of the test data to the Air Section of the Southwest District Office within forty-five days of such testing. Testing procedures shall be consistent with the requirements of Rule 17-2.700, F.A.C. The duration of each opacity test shall be 60 minutes. Opacity tests shall be conducted using DER Method 9.

- (X) Particulates *
- (X) Sulfur Oxides **
- () Fluorides
- () Nitrogen Oxides
- (X) Opacity
- () Hydrocarbons
- () Total Reduced Sulfur

* An annual compliance test for particulate is not required for any fuel burning source that, in a federal fiscal year (October 1 - September 30), does not burn liquid or solid fuel, other than during startup, for a total of more than 400 hours.

** A Fuel analysis of a representative fuel sample taken during the particulate compliance test and a calculation of the sulfur dioxide emission rate which is based upon the fuel analysis may be submitted in lieu of the required sulfur oxides emission test.

9. If the source is on cold standby when an annual compliance test is required by Specific Condition No. 8, then the compliance test may be postponed until after startup. Compliance testing shall be conducted within 30 days of startup. Testing, notification, and reporting, shall be consistent with all the requirements of Specific Conditions Nos. 8 through 15. The base date for future annual testing under Specific Condition No. 8 shall be automatically amended to the date of the compliance test conducted after startup.

10. Except as provided in Specific Conditions No. 11 or 12, compliance testing shall be conducted while burning fuel oil.

11. If the source is burning natural gas when a compliance test is required, then the compliance test may be conducted while burning natural gas.

12. If the source is burning a mixture of natural gas and fuel oil simultaneously when a compliance test is required, then the compliance test may be conducted while burning that mixture of natural gas and fuel oil simultaneously.

PERMITTEE:

City of Lakeland Department of
Electric and Water Utilities
1000 East Parker St.
Lakeland, FL. 33801

PERMIT/CERTIFICATION

Permit No: A053-175869
County: Polk
Expiration Date: 05/17/95
Project: Charles Larsen
Power Plant, Unit. #4

SPECIFIC CONDITIONS:

13. If the most recent compliance test was conducted pursuant to Specific Condition No. 11 or 12, and the fuel input is changed for a total of more than 15 days such that the percentage of total heat input derived from fuel oil increases by 10% or more (using the most recent compliance test as a basis), then the results from new compliance tests shall be submitted to the Air Section of the Southwest District Office within 45 days of the 15th day that the source is fired with the changed fuel input. (Rule 17-4.070(3), F.A.C.)

14. Compliance testing shall be conducted while operating within $\pm 10\%$ of the maximum permitted heat input rate. A compliance test submitted at operating levels less than 90% of the maximum permitted heat input rate will automatically constitute an amended permit at the lesser rate until another test, showing compliance at a higher rate is submitted. The permittee shall submit a statement of the actual heat input rate as a part of each compliance test. Failure to include the actual heat input rate in the results may invalidate the tests and fail to provide reasonable assurance of compliance. (Rule 17-4.070(3), F.A.C.)

15. The permittee shall notify the Southwest District Office of the Department at least 15 days prior to the date on which each formal compliance test is to begin of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted. (Rule 17-2.700(2)(a)9., F.A.C.)

16. Submit for this facility, each calendar year, on or before March 1, an emission report for the preceding calendar year containing the following information pursuant to Section 403.061(13), Florida Statutes:

- (A) Annual amount of materials and/or fuels utilized.
- (B) Annual emissions (note calculation basis).
- (C) Any changes in the information contained in the permit application.

17. Issuance of this permit does not relieve the permittee from complying with applicable emission limiting standards or other requirements of Chapter 17-2, or any other requirements under federal, state, or local law. (Rule 17-2.210, F.A.C.)

PERMITTEE:

City of Lakeland Department of
Electric and Water Utilities
1000 East Parker St.
Lakeland, FL. 33801

PERMIT/CERTIFICATION

Permit No: A053-175869
County: Polk
Expiration Date: 05/17/95
Project: Charles Larsen
Power Plant, Unit #4

SPECIFIC CONDITIONS:

18. Four applications to renew this operating permit shall be submitted to the Southwest District Office of the Department by March 18, 1995.

Issued this 30 day of
April, 1992.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION



Dr. Richard D. Garrity
Deputy Assistant Secretary
4520 Oak Fair Boulevard
Tampa, Florida 33610-7347
Phone (813) 623-5561

GENERAL CONDITIONS

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and are binding and enforceable pursuant to the authority of Section 403.141, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
3. As provided in Subsections 403.087(6) and 403.712(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor infringement of federal, state or local laws or regulations. This permit is not 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 or plant life or property caused by the construction or operation of this permitted source or from penalties therefore, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by any order from the Department.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credential or other documents as maybe required by law and at reasonable times, access to the premises, where the permitted activity is located or conducted:

GENERAL CONDITIONS (con't):

7. (con't):

- a. Have access to and copy any records that must be kept under the conditions of the permit;
- b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

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

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department (17-6.130) 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.

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 involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Section 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedures and appropriate evidentiary rules.

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

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-30.300, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

GENERAL CONDITIONS (con't):

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

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:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically, unless otherwise stipulated by the Department.

b. The permittee shall 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. These materials shall be retained at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurement;
- 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.

BEST AVAILABLE COPY



Florida Department of Environmental Regulation

Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347 • 813-623-5561

Bob Martinez, Governor

Dale Twachtman, Secretary

John Shearer, Assistant Secretary

Dr. Richard Garrity, Deputy Assistant Secretary

NOTICE OF PERMIT

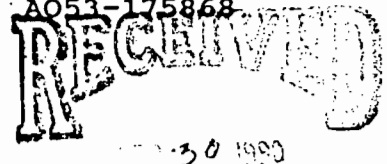
STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION NOTICE OF PERMIT ISSUANCE

April 27, 1990

In the Matter of an Application
for Permit by:

DER File No. A053-175868
Polk County

Mr. Harlan C. Proctor, Superintendent
City of Lakeland
Department of Electric and Water Utilities
Charles Larsen Power Plant - Unit No. 5
2002 East U.S. Highway 92
Lakeland, Florida 33801



H. C. PROCTOR, Supt., Larsen Plant
DEPT. OF ELECTRIC & WATER UTILITIES
CITY OF LAKELAND
LAKELAND, FLORIDA

Enclosed is Permit Number A053-175868 to Operate Unit #5 at the Charles Larsen Power Plant located at 2002 East U.S. Highway 92, Lakeland, issued pursuant to Section 403, Florida Statutes.

A person whose substantial interests are affected by this permit may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of receipt of this permit. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;

(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;

(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by Petitioner, if any;

(e) A statement of facts which petitioner contends warrants reversal or modification of the Department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this permit. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

This permit is final and effective on the date filed with the Clerk of the Department unless a petition is filed in accordance with the above paragraphs 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, F.A.C. 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, Florida 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 date the Final Order is filed with the Clerk of the Department.

Executed in Tampa, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Gary A. Maier

Gary A. Maier, BS ChE, JD
4520 Oak Fair Boulevard
Tampa, Florida 33610-7347
Phone (813) 623-5561 x360

CERTIFICATE OF SERVICE

This is to certify that this NOTICE OF PERMIT and all
copies were mailed before the close of business on
APR 27 1990 to the listed persons.

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant
to Section 120.52(9), Florida
Statutes, with the designated
Department Clerk, receipt of
which is hereby acknowledged.

Marilyn Quispe
Clerk

APR 27 1990
Date



Florida Department of Environmental Regulation

Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347 • 813-623-5561

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary

Dr. Richard Garrity, Deputy Assistant Secretary

PERMITTEE:

City of Lakeland Department of
Electric and Water Utilities
1000 East Parker St.
Lakeland, FL. 33801

PERMIT/CERTIFICATION

Permit No: A053-175868
County: Polk
Expiration Date: 05/17/95
Project: Charles Larsen
Power Plant, Unit #5

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rules 17-2 & 17-4. 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:

For Operation of the nominal 25 MW (electric) Steam Generator designated as Charles Larsen Memorial Power Plant Unit #5. This source is fired on No. 6 fuel oil with a maximum heat input of 300.5 MMBTU per hour, or natural gas with a maximum heat input of 320.8 MMBTU per hour.

Location: 2002 East U.S. Highway 92, Lakeland, Polk County

UTM: 17-409.0 E 3106.3 N NEDS NO: 0003 Point ID: 02

Replaces Permit No.: A053-99001

PERMITTEE:

City of Lakeland Department of
Electric and Water Utilities
1000 East Parker St.
Lakeland, FL. 33801

PERMIT/CERTIFICATION

Permit No: AO53-175868
County: Polk
Expiration Date: 05/17/95
Project: Charles Larsen
Power Plant, Unit #5

SPECIFIC CONDITIONS:

1. A part of this permit is the attached 15 General Conditions.
2. Visible Emissions shall not exceed 20% opacity except for one two-minute period per hour during which opacity shall not exceed 40%. (Rule 17-2.600(5)(a)1., F.A.C.).
3. Particulate Matter Emissions shall not exceed 0.1 pound per million Btu heat input. (Rule 17-2.600(5)(a)2., F.A.C.).
4. Sulfur Dioxide Emissions shall not exceed 2.75 pounds per million Btu heat input. (Rule 17-2.600(5)(a)3.a.(xi), F.A.C.).
5. Excess emissions from boiler cleaning (soot blowing) or load change are permitted provided that,
 - (A) the duration of such excess emissions shall not exceed 3 hours in any 24 hour period,
 - (B) the visible emissions shall not exceed 60% opacity,
 - (C) the particulate emissions shall not exceed an average of 0.3 pound per million BTU heat input during the 3 hour period,
 - (D) best operational practices to minimize emissions are adhered to, AND
 - (E) the duration of excess emissions shall be minimized. (Rule 17-2.250, F.A.C.)
6. The heat input rate shall not exceed 300.5 MM Btu per hour when burning fuel oil. The heat input rate shall not exceed 320.8 MM Btu per hour when burning natural gas. If fuel oil and natural gas are burned simultaneously in any combination, then the maximum permitted heat input rate shall be determined by proration.
7. This source is permitted to operate 24 hours/day, 7 days/week, and 52 weeks/year (8760 hours/year).

PERMITTEE:

City of Lakeland Department of
Electric and Water Utilities
1000 East Parker St.
Lakeland, FL. 33801

PERMIT/CERTIFICATION

Permit No: A053-175868
County: Polk
Expiration Date: 05/17/95
Project: Charles Larsen
Power Plant, Unit #5

SPECIFIC CONDITIONS:

8. Test the emissions, under both normal and soot blowing conditions, for the following pollutants at intervals of 12 months from the date November 8, 1990 and submit a copy of the test data to the Air Section of the Southwest District Office within forty-five days of such testing. Testing procedures shall be consistent with the requirements of Rule 17-2.700, F.A.C. The duration of each opacity test shall be 60 minutes. Opacity tests shall be conducted using DER Method 9.

- (X) Particulates *
- (X) Sulfur Oxides **
- () Fluorides
- () Nitrogen Oxides
- (X) Opacity
- () Hydrocarbons
- () Total Reduced Sulfur

* An annual compliance test for particulate is not required for any fuel burning source that, in a federal fiscal year (October 1 - September 30), does not burn liquid or solid fuel, other than during startup, for a total of more than 400 hours.

** A Fuel analysis of a representative fuel sample taken during the particulate compliance test and a calculation of the sulfur dioxide emission rate which is based upon the fuel analysis may be submitted in lieu of the required sulfur oxides emission test.

9. If the source is on cold standby when an annual compliance test is required by Specific Condition No. 8, then the compliance test may be postponed until after startup. Compliance testing shall be conducted within 30 days of startup. Testing, notification, and reporting, shall be consistent with all the requirements of Specific Conditions Nos. 8 through 15. The base date for future annual testing under Specific Condition No. 8 shall be automatically amended to the date of the compliance test conducted after startup.

10. Except as provided in Specific Conditions No. 11 or 12, compliance testing shall be conducted while burning fuel oil.

11. If the source is burning natural gas when a compliance test is required, then the compliance test may be conducted while burning natural gas.

12. If the source is burning a mixture of natural gas and fuel oil simultaneously when a compliance test is required, then the compliance test may be conducted while burning that mixture of natural gas and fuel oil simultaneously.

PERMITTEE:

City of Lakeland Department of
Electric and Water Utilities
1000 East Parker St.
Lakeland, FL. 33801

PERMIT/CERTIFICATION

Permit No: A053-175868
County: Polk
Expiration Date: 05/17/95
Project: Charles Larsen
Power Plant, Unit #5

SPECIFIC CONDITIONS:

13. If the most recent compliance test was conducted pursuant to Specific Condition No. 11 or 12, and the fuel input is changed for a total of more than 15 days such that the percentage of total heat input derived from fuel oil increases by 10% or more (using the most recent compliance test as a basis), then the results from new compliance tests shall be submitted to the Air Section of the Southwest District Office within 45 days of the 15th day that the source is fired with the changed fuel input. (Rule 17-4.070(3), F.A.C.)

14. Compliance testing shall be conducted while operating within $\pm 10\%$ of the maximum permitted heat input rate. A compliance test submitted at operating levels less than 90% of the maximum permitted heat input rate will automatically constitute an amended permit at the lesser rate until another test, showing compliance at a higher rate is submitted. The permittee shall submit a statement of the actual heat input rate as a part of each compliance test. Failure to include the actual heat input rate in the results may invalidate the tests and fail to provide reasonable assurance of compliance. (Rule 17-4.070(3), F.A.C.)

15. The permittee shall notify the Southwest District Office of the Department at least 15 days prior to the date on which each formal compliance test is to begin of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted. (Rule 17-2.700(2)(a)9., F.A.C.)

16. Submit for this facility, each calendar year, on or before March 1, an emission report for the preceding calendar year containing the following information pursuant to Section 403.061(13), Florida Statutes:

- (A) Annual amount of materials and/or fuels utilized.
- (B) Annual emissions (note calculation basis).
- (C) Any changes in the information contained in the permit application.

17. Issuance of this permit does not relieve the permittee from complying with applicable emission limiting standards or other requirements of Chapter 17-2, or any other requirements under federal, state, or local law. (Rule 17-2.210, F.A.C.)

PERMITTEE:

City of Lakeland Department of
Electric and Water Utilities
1000 East Parker St.
Lakeland, FL. 33801

PERMIT/CERTIFICATION

Permit No: A053-175868
County: Polk
Expiration Date: 05/17/95
Project: Charles Larsen
Power Plant, Unit #5

SPECIFIC CONDITIONS:

18. Four applications to renew this operating permit shall be submitted to the Southwest District Office of the Department by March 18, 1995.

Issued this 27 day of
April, 1996.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION



Dr. Richard D. Garrity
Deputy Assistant Secretary
4520 Oak Fair Boulevard
Tampa, Florida 33610-7347
Phone (813) 623-5561

GENERAL CONDITIONS

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and are binding and enforceable pursuant to the authority of Section 403.141, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
3. As provided in Subsections 403.087(6) and 403.712(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor infringement of federal, state or local laws or regulations. This permit is not 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 or plant life or property caused by the construction or operation of this permitted source or from penalties therefore, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by any order from the Department.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credential or other documents as maybe required by law and at reasonable times, access to the premises, where the permitted activity is located or conducted:

GENERAL CONDITIONS (con't):

7. (con't):

- a. Have access to and copy any records that must be kept under the conditions of the permit;
- b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

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

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department (17-6.130) 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.

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 involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Section 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedures and appropriate evidentiary rules.

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

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-30.300, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

GENERAL CONDITIONS (con't):

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

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:

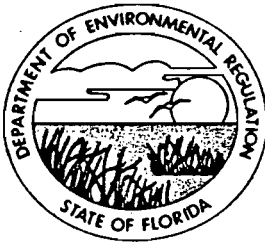
a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically, unless otherwise stipulated by the Department.

b. The permittee shall 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. These materials shall be retained at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurement;
- 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.



Florida Department of Environmental Regulation

Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347 • 813-623-5561

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary
Dr. Richard Garrity, Deputy Assistant Secretary

NOTICE OF PERMIT

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION NOTICE OF PERMIT ISSUANCE

April 27, 1990

In the Matter of an Application DER File No. A053-175871
for Permit by: Polk County
Mr. Harlan C. Proctor, Superintendent
City of Lakeland
Department of Electric and Water Utilities
Charles Larsen Power Plant - Unit No. 6
2002 East U.S. Highway 92
Lakeland, Florida 33801

Enclosed is Permit Number A053-175871 to Operate Unit #6 at the Charles Larsen Power Plant located at 2002 East U.S. Highway 92, Lakeland, issued pursuant to Section 403, Florida Statutes.

A person whose substantial interests are affected by this permit may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of receipt of this permit. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;

(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;

(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by Petitioner, if any;

(e) A statement of facts which petitioner contends warrants reversal or modification of the Department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this permit. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

This permit is final and effective on the date filed with the Clerk of the Department unless a petition is filed in accordance with the above paragraphs 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, F.A.C. 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, Florida 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 date the Final Order is filed with the Clerk of the Department.

Executed in Tampa, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION.

Gary A. Maier

Gary A. Maier, BS ChE, JD
4520 Oak Fair Boulevard
Tampa, Florida 33610-7347
Phone (813) 623-5561 x360

CERTIFICATE OF SERVICE

This is to certify that this NOTICE OF PERMIT and all
copies were mailed before the close of business on
APR 30 1990 to the listed persons.

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant
to Section 120.52(9), Florida
Statutes, with the designated
Department Clerk, receipt of
which is hereby acknowledged.

Marilyn Quiske
Clerk

APR 30 1990
Date



Florida Department of Environmental Regulation

Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347 • 813-623-5561

Bob Martinez, Governor

Dale Twachtman, Secretary

John Shearer, Assistant Secretary
Dr. Richard Garrity, Deputy Assistant Secretary

PERMITTEE:

City of Lakeland Department of
Electric and Water Utilities
1000 East Parker St.
Lakeland, FL. 33801

PERMIT/CERTIFICATION

Permit No: A053-175871
County: Polk
Expiration Date: 05/17/95
Project: Charles Larsen
Power Plant, Unit #6

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rules 17-2 & 17-4. 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:

For Operation of the nominal 25 MW (electric) Steam Generator designated as Charles Larsen Memorial Power Plant Unit #6. This source is fired on No. 6 fuel oil with a maximum heat input of 305.9 MMBTU per hour, or natural gas with a maximum heat input of 286.5 MMBTU per hour.

Location: 2002 East U.S. Highway 92, Lakeland, Polk County

UTM: 17-409.0 E 3106.3 N NEDS NO: 0003 Point ID: 03

Replaces Permit No.: A053-102240

PERMITTEE:

City of Lakeland Department of
Electric and Water Utilities
1000 East Parker St.
Lakeland, FL. 33801

PERMIT/CERTIFICATION

Permit No: A053-175871
County: Polk
Expiration Date: 05/17/95
Project: Charles Larsen
Power Plant, Unit #6

SPECIFIC CONDITIONS:

1. A part of this permit is the attached 15 General Conditions.
2. Visible Emissions shall not exceed 20% opacity except for one two-minute period per hour during which opacity shall not exceed 40%. (Rule 17-2.600(5)(a)1., F.A.C.).
3. Particulate Matter Emissions shall not exceed 0.1 pound per million Btu heat input. (Rule 17-2.600(5)(a)2., F.A.C.).
4. Sulfur Dioxide Emissions shall not exceed 2.75 pounds per million Btu heat input. (Rule 17-2.600(5)(a)3.a.(xi), F.A.C.).
5. Excess emissions from boiler cleaning (soot blowing) or load change are permitted provided that,
 - (A) the duration of such excess emissions shall not exceed 3 hours in any 24 hour period,
 - (B) the visible emissions shall not exceed 60% opacity,
 - (C) the particulate emissions shall not exceed an average of 0.3 pound per million BTU heat input during the 3 hour period,
 - (D) best operational practices to minimize emissions are adhered to, AND
 - (E) the duration of excess emissions shall be minimized. (Rule 17-2.250, F.A.C.)
6. The heat input rate shall not exceed 305.9 MM Btu per hour when burning fuel oil. The heat input rate shall not exceed 286.5 MM Btu per hour when burning natural gas. If fuel oil and natural gas are burned simultaneously in any combination, then the maximum permitted heat input rate shall be determined by proration.
7. This source is permitted to operate 24 hours/day, 7 days/week, and 52 weeks/year (8760 hours/year).

PERMITTEE:

City of Lakeland Department of
Electric and Water Utilities
1000 East Parker St.
Lakeland, FL. 33801

PERMIT/CERTIFICATION

Permit No: A053-175871
County: Polk
Expiration Date: 05/17/95
Project: Charles Larsen
Power Plant, Unit #6

SPECIFIC CONDITIONS:

8. Test the emissions, under both normal and soot blowing conditions, for the following pollutants at intervals of 12 months from the date November 1, 1989 and submit a copy of the test data to the Air Section of the Southwest District Office within forty-five days of such testing. Testing procedures shall be consistent with the requirements of Rule 17-2.700, F.A.C. The duration of each opacity test shall be 60 minutes. Opacity tests shall be conducted using DER Method 9.

- (X) Particulates *
- (X) Sulfur Oxides **
- () Fluorides
- () Nitrogen Oxides
- (X) Opacity
- () Hydrocarbons
- () Total Reduced Sulfur

* An annual compliance test for particulate is not required for any fuel burning source that, in a federal fiscal year (October 1 - September 30), does not burn liquid or solid fuel, other than during startup, for a total of more than 400 hours.

** A Fuel analysis of a representative fuel sample taken during the particulate compliance test and a calculation of the sulfur dioxide emission rate which is based upon the fuel analysis may be submitted in lieu of the required sulfur oxides emission test.

9. If the source is on cold standby when an annual compliance test is required by Specific Condition No. 8, then the compliance test may be postponed until after startup. Compliance testing shall be conducted within 30 days of startup. Testing, notification, and reporting, shall be consistent with all the requirements of Specific Conditions Nos. 8 through 15. The base date for future annual testing under Specific Condition No. 8 shall be automatically amended to the date of the compliance test conducted after startup.

10. Except as provided in Specific Conditions No. 11 or 12, compliance testing shall be conducted while burning fuel oil.

11. If the source is burning natural gas when a compliance test is required, then the compliance test may be conducted while burning natural gas.

12. If the source is burning a mixture of natural gas and fuel oil simultaneously when a compliance test is required, then the compliance test may be conducted while burning that mixture of natural gas and fuel oil simultaneously.

PERMITTEE:

City of Lakeland Department of
Electric and Water Utilities
1000 East Parker St.
Lakeland, FL. 33801

PERMIT/CERTIFICATION

Permit No: AO53-175871
County: Polk
Expiration Date: 05/17/95
Project: Charles Larsen
Power Plant, Unit #6

SPECIFIC CONDITIONS:

13. If the most recent compliance test was conducted pursuant to Specific Condition No. 11 or 12, and the fuel input is changed for a total of more than 15 days such that the percentage of total heat input derived from fuel oil increases by 10% or more (using the most recent compliance test as a basis), then the results from new compliance tests shall be submitted to the Air Section of the Southwest District Office within 45 days of the 15th day that the source is fired with the changed fuel input. (Rule 17-4.070(3), F.A.C.)

14. Compliance testing shall be conducted while operating within $\pm 10\%$ of the maximum permitted heat input rate. A compliance test submitted at operating levels less than 90% of the maximum permitted heat input rate will automatically constitute an amended permit at the lesser rate until another test, showing compliance at a higher rate is submitted. The permittee shall submit a statement of the actual heat input rate as a part of each compliance test. Failure to include the actual heat input rate in the results may invalidate the tests and fail to provide reasonable assurance of compliance. (Rule 17-4.070(3), F.A.C.)

15. The permittee shall notify the Southwest District Office of the Department at least 15 days prior to the date on which each formal compliance test is to begin of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted. (Rule 17-2.700(2)(a)9., F.A.C.)

16. Submit for this facility, each calendar year, on or before March 1, an emission report for the preceding calendar year containing the following information pursuant to Section 403.061(13), Florida Statutes:

- (A) Annual amount of materials and/or fuels utilized.
- (B) Annual emissions (note calculation basis).
- (C) Any changes in the information contained in the permit application.

17. Issuance of this permit does not relieve the permittee from complying with applicable emission limiting standards or other requirements of Chapter 17-2, or any other requirements under federal, state, or local law. (Rule 17-2.210, F.A.C.)

PERMITTEE:

City of Lakeland Department of
Electric and Water Utilities
1000 East Parker St.
Lakeland, FL. 33801

PERMIT/CERTIFICATION


Permit No: A053-175871
County: Polk
Expiration Date: 05/17/95
Project: Charles Larsen
Power Plant, Unit #6

SPECIFIC CONDITIONS:

18. Four applications to renew this operating permit shall be submitted to the Southwest District Office of the Department by March 18, 1995.

Issued this 30 day of
April, 1995.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION



Dr. Richard D. Garrity
Deputy Assistant Secretary
4520 Oak Fair Boulevard
Tampa, Florida 33610-7347
Phone (813) 623-5561

GENERAL CONDITIONS

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and are binding and enforceable pursuant to the authority of Section 403.141, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
3. As provided in Subsections 403.087(6) and 403.712(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor infringement of federal, state or local laws or regulations. This permit is not 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 or plant life or property caused by the construction or operation of this permitted source or from penalties therefore, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by any order from the Department.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credential or other documents as maybe required by law and at reasonable times, access to the premises, where the permitted activity is located or conducted:

GENERAL CONDITIONS (con't):

7. (con't):

- a. Have access to and copy any records that must be kept under the conditions of the permit;
- b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

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

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department (17-6.130) 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.

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 involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Section 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedures and appropriate evidentiary rules.

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

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-30.300, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

GENERAL CONDITIONS (con't):

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

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:

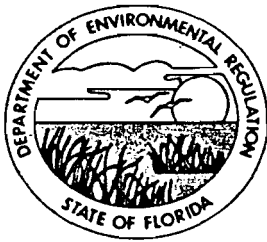
a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically, unless otherwise stipulated by the Department.

b. The permittee shall 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. These materials shall be retained at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurement;
- 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.



Florida Department of Environmental Regulation

Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347 • 813-623-5561

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary
Dr. Richard Garrity, Deputy Assistant Secretary

NOTICE OF PERMIT

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION NOTICE OF PERMIT ISSUANCE

April 27, 1990

In the Matter of an Application DER File No. A053-175870
for Permit by: Polk County
Mr. Harlan C. Proctor, Superintendent
City of Lakeland
Department of Electric and Water Utilities
Charles Larsen Power Plant - Unit No. 7
2002 East U.S. Highway 92
Lakeland, Florida 33801

Enclosed is Permit Number A053-175870 to Operate Unit #7 at the Charles Larsen Power Plant located at 2002 East U.S. Highway 92, Lakeland, issued pursuant to Section 403, Florida Statutes.

A person whose substantial interests are affected by this permit may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of receipt of this permit. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;

(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;

(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by Petitioner, if any;

(e) A statement of facts which petitioner contends warrants reversal or modification of the Department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this permit. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

This permit is final and effective on the date filed with the Clerk of the Department unless a petition is filed in accordance with the above paragraphs 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, F.A.C. 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, Florida 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 date the Final Order is filed with the Clerk of the Department.

Executed in Tampa, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Gary A. Maier

Gary A. Maier, BS ChE, JD
4520 Oak Fair Boulevard
Tampa, Florida 33610-7347
Phone (813) 623-5561 x360

CERTIFICATE OF SERVICE

This is to certify that this NOTICE OF PERMIT and all
copies were mailed before the close of business on
APR 30 1990 to the listed persons.

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant
to Section 120.52(9), Florida
Statutes, with the designated
Department Clerk, receipt of
which is hereby acknowledged.

Charilyn Quispe
Clerk

APR 30 1990
Date



Florida Department of Environmental Regulation

Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347 • 813-623-5561

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary
Dr. Richard Garrity, Deputy Assistant Secretary

PERMITTEE:

City of Lakeland Department of
Electric and Water Utilities
1000 East Parker St.
Lakeland, FL. 33801

PERMIT/CERTIFICATION

Permit No: AO53-175870
County: Polk
Expiration Date: 05/17/95
Project: Charles Larsen
Power Plant, Unit #7

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rules 17-2 & 17-4. 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:

For Operation of the nominal 50 MW (electric) Steam Generator designated as Charles Larsen Memorial Power Plant Unit #7. This source is fired on No. 6 fuel oil with a maximum heat input of 597.6 MMBTU per hour, or natural gas with a maximum heat input of 615.6 MMBTU per hour.

Location: 2002 East U.S. Highway 92, Lakeland, Polk County

UTM: 17-409.0 E 3106.3 N NEDS NO: 0003 Point ID: 04

Replaces Permit No.: AO53-102239

PERMITTEE:

City of Lakeland Department of
Electric and Water Utilities
1000 East Parker St.
Lakeland, FL. 33801

PERMIT/CERTIFICATION

Permit No: A053-175870
County: Polk
Expiration Date: 05/17/95
Project: Charles Larsen
Power Plant, Unit #7

SPECIFIC CONDITIONS:

1. A part of this permit is the attached 15 General Conditions.
2. Visible Emissions shall not exceed 20% opacity except for one two-minute period per hour during which opacity shall not exceed 40%. (Rule 17-2.600(5)(a)1., F.A.C.).
3. Particulate Matter Emissions shall not exceed 0.1 pound per million Btu heat input. (Rule 17-2.600(5)(a)2., F.A.C.).
4. Sulfur Dioxide Emissions shall not exceed 2.75 pounds per million Btu heat input. (Rule 17-2.600(5)(a)3.a.(xi), F.A.C.).
5. Excess emissions from boiler cleaning (soot blowing) or load change are permitted provided that,
 - (A) the duration of such excess emissions shall not exceed 3 hours in any 24 hour period,
 - (B) the visible emissions shall not exceed 60% opacity,
 - (C) the particulate emissions shall not exceed an average of 0.3 pound per million BTU heat input during the 3 hour period,
 - (D) best operational practices to minimize emissions are adhered to, AND
 - (E) the duration of excess emissions shall be minimized. (Rule 17-2.250, F.A.C.)
6. The heat input rate shall not exceed 597.6 MM Btu per hour when burning fuel oil. The heat input rate shall not exceed 615.6 MM Btu per hour when burning natural gas. If fuel oil and natural gas are burned simultaneously in any combination, then the maximum permitted heat input rate shall be determined by proration.
7. This source is permitted to operate 24 hours/day, 7 days/week, and 52 weeks/year (8760 hours/year).

PERMITTEE:

City of Lakeland Department of
Electric and Water Utilities
1000 East Parker St.
Lakeland, FL. 33801

PERMIT/CERTIFICATION

Permit No: A053-175870
County: Polk
Expiration Date: 05/17/95
Project: Charles Larsen
Power Plant, Unit #7

SPECIFIC CONDITIONS:

8. Test the emissions, under both normal and soot blowing conditions, for the following pollutants at intervals of 12 months from the date December 6, 1989 and submit a copy of the test data to the Air Section of the Southwest District Office within forty-five days of such testing. Testing procedures shall be consistent with the requirements of Rule 17-2.700, F.A.C. The duration of each opacity test shall be 60 minutes. Opacity tests shall be conducted using DER Method 9.

- (X) Particulates *
- (X) Sulfur Oxides **
- () Fluorides
- () Nitrogen Oxides
- (X) Opacity
- () Hydrocarbons
- () Total Reduced Sulfur

* An annual compliance test for particulate is not required for any fuel burning source that, in a federal fiscal year (October 1 - September 30), does not burn liquid or solid fuel, other than during startup, for a total of more than 400 hours.

** A Fuel analysis of a representative fuel sample taken during the particulate compliance test and a calculation of the sulfur dioxide emission rate which is based upon the fuel analysis may be submitted in lieu of the required sulfur oxides emission test.

9. If the source is on cold standby when an annual compliance test is required by Specific Condition No. 8, then the compliance test may be postponed until after startup. Compliance testing shall be conducted within 30 days of startup. Testing, notification, and reporting, shall be consistent with all the requirements of Specific Conditions Nos. 8 through 15. The base date for future annual testing under Specific Condition No. 8 shall be automatically amended to the date of the compliance test conducted after startup.

10. Except as provided in Specific Conditions No. 11 or 12, compliance testing shall be conducted while burning fuel oil.

11. If the source is burning natural gas when a compliance test is required, then the compliance test may be conducted while burning natural gas.

12. If the source is burning a mixture of natural gas and fuel oil simultaneously when a compliance test is required, then the compliance test may be conducted while burning that mixture of natural gas and fuel oil simultaneously.

PERMITTEE:

City of Lakeland Department of
Electric and Water Utilities
1000 East Parker St.
Lakeland, FL. 33801

PERMIT/CERTIFICATION

Permit No: A053-175870
County: Polk
Expiration Date: 05/17/95
Project: Charles Larsen
Power Plant, Unit #7

SPECIFIC CONDITIONS:

13. If the most recent compliance test was conducted pursuant to Specific Condition No. 11 or 12, and the fuel input is changed for a total of more than 15 days such that the percentage of total heat input derived from fuel oil increases by 10% or more (using the most recent compliance test as a basis), then the results from new compliance tests shall be submitted to the Air Section of the Southwest District Office within 45 days of the 15th day that the source is fired with the changed fuel input. (Rule 17-4.070(3), F.A.C.)

14. Compliance testing shall be conducted while operating within $\pm 10\%$ of the maximum permitted heat input rate. A compliance test submitted at operating levels less than 90% of the maximum permitted heat input rate will automatically constitute an amended permit at the lesser rate until another test, showing compliance at a higher rate is submitted. The permittee shall submit a statement of the actual heat input rate as a part of each compliance test. Failure to include the actual heat input rate in the results may invalidate the tests and fail to provide reasonable assurance of compliance. (Rule 17-4.070(3), F.A.C.)

15. The permittee shall notify the Southwest District Office of the Department at least 15 days prior to the date on which each formal compliance test is to begin of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted. (Rule 17-2.700(2)(a)9., F.A.C.)

16. Submit for this facility, each calendar year, on or before March 1, an emission report for the preceding calendar year containing the following information pursuant to Section 403.061(13), Florida Statutes:

- (A) Annual amount of materials and/or fuels utilized.
- (B) Annual emissions (note calculation basis).
- (C) Any changes in the information contained in the permit application.

17. Issuance of this permit does not relieve the permittee from complying with applicable emission limiting standards or other requirements of Chapter 17-2, or any other requirements under federal, state, or local law. (Rule 17-2.210, F.A.C.)

PERMITTEE:

City of Lakeland Department of
Electric and Water Utilities
1000 East Parker St.
Lakeland, FL. 33801

PERMIT/CERTIFICATION

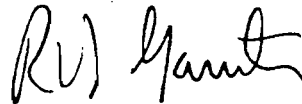
Permit No: A053-175870
County: Polk
Expiration Date: 05/17/95
Project: Charles Larsen
Power Plant, Unit #7

SPECIFIC CONDITIONS:

18. Four applications to renew this operating permit shall be submitted to the Southwest District Office of the Department by March 18, 1995.

Issued this 30 day of
April, 1990.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION



Dr. Richard D. Garrity
Deputy Assistant Secretary
4520 Oak Fair Boulevard
Tampa, Florida 33610-7347
Phone (813) 623-5561

GENERAL CONDITIONS

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and are binding and enforceable pursuant to the authority of Section 403.141, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
3. As provided in Subsections 403.087(6) and 403.712(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor infringement of federal, state or local laws or regulations. This permit is not 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 or plant life or property caused by the construction or operation of this permitted source or from penalties therefore, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by any order from the Department.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credential or other documents as maybe required by law and at reasonable times, access to the premises, where the permitted activity is located or conducted:

GENERAL CONDITIONS (con't):

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

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:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically, unless otherwise stipulated by the Department.

b. The permittee shall 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. These materials shall be retained at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurement;
- 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.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

No. 149730

RECEIPT FOR APPLICATION FEES AND MISCELLANEOUS REVENUE

Received from City of Lakeland Date 2/5/90

Address _____ Dollars \$ 6000.00

Applicant Name & Address same

Source of Revenue 4 Sources

Revenue Code 1032 Application Number A053-175868/A053-175869

CR 35842 By Cherie King A053-175870
A053-175871



BLACK & VEATCH

8400 Ward Parkway, P.O. Box No. 8405, Kansas City, Missouri 64114, (913) 339-2000

RECEIVED

City of Lakeland, Florida
Combustion Turbine Project

FEB 7 1991

B&V Project 16587
B&V File 32.0402
February 6, 1991

DER-BAQM

FEDERAL EXPRESS

Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Additional Information
to Support PSD Application

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

Gentlemen:

Mr. Preston Lewis recently requested some general information regarding the existing units at the City of Lakeland's Larsen Power Plant. This information is being sent directly to Mr. Lewis. He requested this information to assist him with the review of the City of Lakeland's recent combustion turbine PSD application.

The provided information includes a larger site arrangement drawing, a summary table of existing unit parameters, and the current DER permits for Units 4 through 7. If there are questions based on this information, please contact Dan Nelson (B&V) at 913-339-2149.

Very truly yours,

BLACK & VEATCH

Steven M. Day

dwn
Enclosures

cc: Mr. Preston Lewis, FDER
Mr. G. A. Rodriguez, COL
C. Holladay
P. Andrews
D. Thomas, asst. Dir.
G. Harper, EPA
C. Shaver, NPS

Mr. Lewis:

*Mr. Fancy's letter
and enclosures are included
with this package. Please
deliver same to him.*

Thank you.

TABLE 1. EXISTING UNITS AT THE CITY OF LAKELAND'S LARSEN POWER PLANT

<u>Unit</u>	<u>Size</u> MW	<u>DER Permit Number</u>	<u>Maximum Heat Input</u>		<u>Emission Limit</u>	
			<u>No. 6 Oil</u> MBtu/h	<u>Natural Gas</u> MBtu/h	<u>Particulate</u> lb/MBtu	<u>Sulfur Dioxide</u> lb/MBtu
1	11.5	A053- 150455	69.7 (Diesel Peaking Unit)	69.7	20 Percent Opacity Limit	0.5 percent
2	11.5	A053- 150455	69.7 (Diesel Peaking Unit)	69.7	20 Percent Opacity Limit	0.5 percent
3	11.5	A053- 150455	69.7 (Diesel Peaking Unit)	69.7	20 Percent Opacity Limit	0.5 percent
4	20	A053- 175869	277.2	278.8	0.1	2.75
5	25	A053- 175868	300.5	320.8	0.1	2.75
6	25	A053- 175871	305.9	286.5	0.1	2.75
7	50	A053- 175870	597.6	615.6	0.1	2.75

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Ms. Garzie Shelton, EC
Lakeland Electric & Water
501 E. Lemon St.
Lakeland, FL 33801-5050

4a. Article Number
P 265 659 300

4b. Service Type

☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery
2-26-98

5. Received By: (Print Name)

6. Signature: (Addressee or Agent)
X *Garzie Shelton*

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1994

Domestic Return Receipt

Thank you for using Return Receipt Service.

PSD-FI-166B

P 265 659 300

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to <i>GARZIE Shelton</i>	
Street & Number <i>Lakeland Electric & Water</i>	
Post Office, State, & ZIP Code <i>Lakeland, FL</i>	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date <i>PSD-FI-166B 2-24-98</i>	

PS Form 3800, April 1995

Memorandum

Florida Department of
Environmental Protection

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
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I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Ms. Garzie Shelton
Lakeland Electric & Water
501 E. Lemon St.
Lakeland, FL

33801-5050

5. Received By: (Print Name)

6. Signature: (Addressee or Agent)

X Gina M. Walker

4a. Article Number

P 265 659 337

4b. Service Type

- | | |
|---|---|
| <input type="checkbox"/> Registered | <input checked="" type="checkbox"/> Certified |
| <input type="checkbox"/> Express Mail | <input type="checkbox"/> Insured |
| <input type="checkbox"/> Return Receipt for Merchandise | <input type="checkbox"/> COD |

7. Date of Delivery

APR 20 1998

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1994

Domestic Return Receipt

Thank you for using Return Receipt Service.

PSD-FI-166B

P 265 659 337

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to	<u>Garzie Shelton</u>
Street / Number	<u>Lake Electric</u>
Post Office, State, & ZIP Code	<u>& Water</u>
Postage	<u>Lakeland, FL</u>
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	<u>4-17-98</u>

PS Form 3800, April 1995

1050003-005-AC
PSD-FI-166B

P 265 659 465

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse).

Sent to: Gonzie Shelton	
Street & Number: Lakeland Electric	
Post Office, State, & ZIP Code: Lakeland, FL	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date: CLMPP 10-8-97 Unit # 8 PSD FI-166	

PS Form 3800, April 1995

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Ms. Gonzie Shelton, E.C.
Lakeland Electric Water
501 E Lenoir St.
Lakeland, FL

33801-5050

4a. Article Number

P 265 659 465

4b. Service Type

- ☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery

10-14-97

5. Received By: (Print Name)

6. Signature: (Addressee or Agent)

X [Signature]

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1994

Domestic Return Receipt

Thank you for using Return Receipt Service.

AFFIDAVIT OF PUBLICATION

THE LEDGER

Lakeland, Polk County, Florida

Case No

STATE OF FLORIDA)
COUNTY OF POLK)

Before the undersigned authority personally appeared Nelson Kirkland, who on oath says that he is Classified Advertising Manager of The Ledger, a daily newspaper published at Lakeland in Polk County, Florida; that the attached copy of advertisement, being a

Public Notice of Intent

in the matter of

AC53-190437/PSD-FL-166B

in the

Court, was published in said newspaper in the issues of

March 9;

1998

Affiant further says that said The Ledger is a newspaper published at Lakeland, in said Polk County, Florida, and that the said newspaper has heretofore been continuously published in said Polk County, Florida, daily, and has been entered as second class matter at the post office in Lakeland, in said Polk County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Signed

Nelson Kirkland

Classified Advertising Manager

By Nelson Kirkland who is
personally known to me

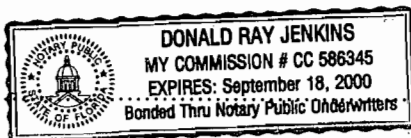
Sworn to and subscribed before me this 13TH

day of MARCH A.D. 1998

(Seal)

Notary Public

My Commission Expires



Order#699715
Lakeland Electric

Attach Notice Here

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT AND AMENDMENT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DRAFT Permit and Amendment No. AC53-190437/PSD-FL-166B
Charles Larsen Memorial Power Plant
Polk County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit and amendment to Lakeland Electric and Water for the Charles Larsen Memorial Power Plant Unit 8-Combined Cycle Gas Turbine located on the south side of Lake Parker on US Highway 92 in Lakeland, Polk County. A Best Available Control Technology (BACT) determination was not required pursuant to Rule 62-212.400, F.A.C. and 40 CFR 52.21 Prevention of Significant Deterioration (PSD). The applicant's name and address are: Lakeland Electric and Water, 501 East Lemon Street, City, Florida, 33801-5050.

This action re-issues and modifies the construction permit for Larsen Unit 8 which expired in 1993. The attached amendment grants the following changes to the permit: deletion of permit requirements for mercury and lead for this combustion turbine which is only authorized to fire natural gas and low sulfur fuel oil, clarification that Beryllium emissions are minimized by firing clean fuels, replacement of the fuel oil usage limit with a curve of fuel oil usage (gals/hr) vs compressor inlet temperature, clarification of the type of changes at the facility that would require the company to notify the Department and apply for a modification, and removal of the ton per year (tpy) limits for CO and SO₂. This amendment also adds the short term limit for CO (25 ppm) that was established in the BACT but inadvertently left out of the original PSD permit. Also an annual test is specified in the amended permit as required in Rule 62-297.310 F.A.C. since Unit 8 is major for CO.

The Department will issue the FINAL Permit and Amendment, in accordance with the conditions of the DRAFT Permit and Amendment unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed DRAFT Permit and Amendment issuance action for a period of 30 (thirty) days from the date of publication of this Notice. Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit and Amendment, the Department shall issue a Revised DRAFT Permit and Amendment and require, if applicable, another Public Notice.

The Department will issue FINAL Permit and Amendment with the conditions of the DRAFT Permit and Amendment unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. or a party requests mediation as an alternative remedy under Section 120.573 before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning for a hearing are set forth below, followed by the procedures for requesting mediation.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 850/488-9370 fax: 850/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition (or a request for mediation, as discussed below) within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the Department's action or proposed action addressed in this notice of intent.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Telephone: 850/488-1344
Fax: 850/922-6979

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

The complete project file includes the Draft Permit and Amendment, the application, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-1344, for additional information.

B302 - 3-9; 1998

B302

THE TAMPA TRIBUNE
Published Daily
Tampa, Hillsborough County, Florida

State of Florida }
County of Hillsborough } ss.

Before the undersigned authority personally appeared J. Rosenthal, who on oath says that she is Classified Billing Manager of The Tampa Tribune, a daily newspaper published at Tampa in Hillsborough County, Florida; that the attached copy of advertisement being a

LEGAL NOTICE

in the matter of _____

PUBLIC NOTICE OF INTENT

was published in said newspaper in the issues of _____

MARCH 9, 1998

Affiant further says that the said The Tampa Tribune is a newspaper published at Tampa in said Hillsborough County, Florida, and that the said newspaper has heretofore been continuously published in said Hillsborough County, Florida, each day and has been entered as second class mail matter at the post office in Tampa, in said Hillsborough County, Florida for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that she has neither paid nor promised any person, this advertisement for publication in the said newspaper.

J. Rosenthal
11

Sworn to and subscribed before me, this _____ day
of _____ MARCH, A.D. 19 98

Personally Known _____ or Product Identification _____
Type of Identification Produced _____

(SEAL)

Susie Lee Slaton



**PUBLIC NOTICE OF INTENT
TO ISSUE AIR
CONSTRUCTION PERMIT
AND AMENDMENT
STATE OF FLORIDA
DEPARTMENT OF
ENVIRONMENTAL
PROTECTION**

**DRAFT Permit and Amend-
ment No. AC53-190437/
PSD-FL-166B**
Charles Larsen Memorial
Power Plant
Polk County

The Department of Environ-
mental Protection (Depart-
ment) gives notice of its intent
to issue an air construction
permit and amendment to
Lakeland Electric and Water
for the Charles Larsen Memorial
Power Plant Unit 8-Combined
Cycle Gas Turbine located on
the south side of Lake Parker
on US Highway 92 in Lakeland,
Polk County, A Best Available
Control Technology (BACT) deter-
mination was not required pursuant
to Rule 62-212.400, F.A.C. and 40
CFR 52.21, Prevention of Signifi-
cant Deterioration (PSD). The
applicant's name and address are:
Lakeland Electric and Water, 501
East Lemon Street, Lakeland, Florida,
33801-5050. This action re-issues and
modifies the construction permit
for Larsen Unit 8 which expired
in 1993. The attached amend-
ment grants the following
changes to the permit: deletion
of permit requirements for
mercury and lead for this
combustion turbine which is
only authorized to fire natural
gas and low sulfur fuel oil;
clarification the Beryllium
emissions are inlet tempera-
ture, clarification of the type
of changes at the facility that
would require the company to
notify the Department and ap-
ply for a modification, and re-
moval of the ten per year
(tpy) limits for CO and H2SO4.
This amendment also adds the
short term limit for CO
(25ppm) that was established
in the BACT but inadvertently
left out of the original PSD
permit. Also an annual test is
specified in the amended per-
mit as required in Rule 62-
297.310 F.A.C. since Unit 8 is
major for CO.

The Department will issue the
FINAL Permit and Amend-
ment, in accordance with the
conditions of the DRAFT Per-
mit and Amendment unless a
response received in accor-
dance with the following pro-
cedures results in a different
decision or significant change
of terms or conditions.

The Department will accept
written comments and re-
quests for public meetings
concerning the proposed
DRAFT Permit and Amend-
ment issuance action for a
period of 30(thirty) days from
the date of publication of this
Notice. Written comments
and requests for public meet-
ings should be provided to the
Department's Bureau of Air
Regulation, 2600 Blair Stone
Road, Mail Station #5505, Tal-
lahassee, Florida 32399-2400.
Any written comments filed
shall be made available for
public inspection. If written
comments received result in a
significant change in this
DRAFT Permit and Amend-
ment, the Department shall is-
sue a Revised DRAFT Permit
and Amendment and require,
if applicable, another Public
Notice.

The Department will issue Fi-
NAL Permit and Amendment
with the conditions of the
DRAFT Permit and Amend-
ment unless a timely petition
for an administrative hearing
is filed pursuant to Sections
120.569 and 120.57 F.S. or a
party requests mediation as
an alternative remedy under
Section 120.573 before the
deadline for filing a petition.

Choosing mediation will not
adversely affect the right to a
hearing if mediation does not
result in a settlement. The
procedures for petitioning for a
hearing are set forth below,
followed by the procedures for
requesting mediations. A person
whose substantial interests are
affected by the Department's
proposed permitting decision
may petition for an adminis-
trative hearing in accordance
with Sections 120.569 and 120.57
F.S. The petition must contain
the information set forth below
and must be filed (received) in the

Office of General Counsel of
the Department, 3900 Com-
monwealth Boulevard, Mail
Station #35, Tallahassee,
Florida 32399-3000, telephone:
850/488-9370, fax: 850/487-
4938. Petitions must be filed
within fourteen days of publi-
cation of the public notice or
receipt of this notice of intent,
whichever occurs first. A peti-
tioner must mail a copy of the
petition to the applicant at the
address indicated above, at the
time of filing. The failure of
any person to file a petition
(or a request for mediation, as
discussed below) within the
appropriate time period shall
constitute a waiver of that
person's right to request an
administrative determination
(hearing) under Sections
120.569 and 120.57 F.S., or to
intervene in this proceeding
and participate as a party to
it. Any subsequent interven-
tion will be only at the approv-

al of the presiding officer upon
the filing of a motion in com-
pliance with Rule 28-5.207 of
the Florida Administrative
Code.

A petition must contain the
following information: (a) The
name, address, and telephone
number of each petitioner, the
applicant's name and address,
the Permit File Number and
the county in which the pro-
ject is proposed; (b) A state-
ment of how and when each
petitioner received notice of
the Department's action or
proposed action; (c) A state-
ment of how each petitioner's
substantial interests are af-
fected by the Department's
action or proposed action; (d)
A statement of the material
facts disputed by petitioner, if
any; (e) A statement of the
facts that the petitioner con-
tends warrant reversal or
modification of the Depart-
ment's action or proposed ac-
tion; (f) A statement identi-
fying the rules or statutes that
the petitioner contends re-
quire reversal or modification
of the Department's action or
proposed action; and (g) A
statement of the relief sought
by the petitioner, stating pre-
cisely the action that the peti-
tioner wants the Department
to take with respect to the
Department's action or pro-
posed action addressed in this
notice of intent.

Because the administrative
hearing process is designed to
formulate final agency action,
the filing of a petition means
that the Department's final
action may be different from
the position taken by it in this

notice of intent. Persons
whose substantial interests
will be affected by any such
final decision of the Depart-
ment on the application have
the right to petition to become
a party to the proceeding, in
accordance with the require-
ments set forth above.

A complete project file is
available for public inspection
during normal business hours,
8:00 a.m. to 5:00 p.m., Monday
through Friday, except legal
holidays, at:
Department of Environmental
Protection, Bureau of Air Re-
gulation, 111 S. Magnolia Drive,
Suite 4, Tallahassee, Florida,
32301, Telephone: 850-488-
1344, Fax: 850/922-6979
Department of Environmental
Protection, SW District Office,
3804 Coconut Palm Drive,
Tampa, Florida 33619 Tele-
phone: 813/744-6100, Fax:
813-744-6084

The complete project file in-
cludes the Draft Permit and
Amendment, the application,
and the information submit-
ted by the responsible official,
exclusive of confidential re-
cords under Section
403.111 F.S. Interested per-
sons may contact the Admin-
istrator, New Resource Re-
view Section at 111 South
Magnolia Drive, Suite 4, Tal-
lahassee, Florida 32301, or call
850/488-1344, for additional in-
formation.

LK2321

3/9/98

PSD-FL-166 PERMITTING HISTORY

Lakeland Electric & Water Utilities
Charles Larsen Memorial Power Plant Unit 8

Facility ID No.: 1050003

PSD Permit History (for tracking purposes):

[illegible]

Appendix H-1, Permit History/ID Number Changes

Lakeland Electric & Water Utilities
Larsen Power Plant

FINAL Permit No.: 1050003-004-AV
Facility ID No.: 1050003

Permit History (for tracking purposes):

E.U.

<u>ID No.</u>	<u>Description</u>	<u>Permit No.</u>	<u>Issue Date</u>	<u>Expiration Date</u>	<u>Extended Date</u> ^{1,2,3}	<u>Revised Date(s)</u>
-001	Oil-Fired Steam Generator #4	AO53-175869	4/30/90	5/17/95*	10/16/96	
-002	Oil-Fired Steam Generator #5	AO53-175868	4/27/90	5/17/95**	10/16/96	
-003	Oil-Fired Steam Generator #6	AO53-175871	4/30/90	5/17/95	8/14/96	
-004	Oil-Fired Steam Generator #7	AO53-175870	4/30/90	5/17/95	8/14/96	
-005	Peaking Gas Turbine #3	AO53-238714	12/15/93	9/1/98		
-006	Peaking Gas Turbine #2	AO53-238714	12/15/93	9/1/98		
-007	Peaking Gas Turbine #1	AO53-238714	12/15/93	9/1/98		
-008	Combined Cycle Combustion Turbine	AO53-219296	9/28/93	8/1/98		2/1/96
		AC53-190437/ PSD-FL-166	7/26/91	3/30/93		12/18/95

* Permanent Shutdown December 31, 1994; permit surrendered October 16, 1996.

** Permanent Shutdown September 30, 1991; permit surrendered October 16, 1996.

(if applicable) ID Number Changes (for tracking purposes):

From: Facility ID No.: 40TPA530003

To: Facility ID No.: 1050003

Notes:

1 - AO permit(s) automatic extension(s) in Rule 62-210.300(2)(a)3.a., F.A.C., effective 03/21/96.

2 - AC permit(s) automatic extension(s) in Rule 62-213.420(1)(a)4., F.A.C., effective 03/20/96.

3 - ORDER EXTENDING PERMIT EXPIRATION DATE dated 07/03/97.

{Rule 62-213.420(1)(b)2., F.A.C., effective 03/20/96, allows Title V Sources to operate under existing valid permits}

Permit #:1050003-001-AC PATS:

Issue:22-DEC-1995 Expire:22-DEC-2000

Project #/Name	Owner/Company	Type/Sub	Receive
001/CUSTOM FUEL MONITOR/ISO/L	LAKELAND ELECTRIC & WATER U	AC /M1	27-JUN-1995
002/LARSEN 8 REV'S	LAKELAND ELECTRIC & WATER U	A0 /MM	23-OCT-1995
003/REVISE TEST DATES - UNITS	LAKELAND ELECTRIC & WATER U	A0 /MM	18-MAR-1996
004/LARSEN POWER STATION	LAKELAND ELECTRIC & WATER U	AV /00	14-JUN-1996
005/LAKELAND ELECTRIC/WATER U	LAKELAND ELECTRIC & WATER U	AC /M1	20-MAR-1997
006/LAKELAND/LARSEN ADMIN COR	LAKELAND ELECTRIC & WATER U	AV /03	26-OCT-1999
007/LAKELAND-LARSEN MEMORIAL	LAKELAND ELECTRIC & WATER U	AC /M1	25-FEB-2000
/LARSEN MEMORIAL UNIT 5	LAKELAND ELECTRIC & WATER U	A0 /99	01-FEB-1985
/STEAM GENERATOR NO. 7	LAKELAND ELECTRIC & WATER U	A0 /99	04-APR-1985
/LARSON MEMORIAL POWER PLA	LAKELAND ELECTRIC & WATER U	A0 /99	04-APR-1985
/LARSEN PLANT--GAS TURBINE	LAKELAND ELECTRIC & WATER U	A0 /00	07-JUN-1988
/LARSON MEMORIAL POWER PLA	LAKELAND ELECTRIC & WATER U	A0 /2A	05-FEB-1990
/LARSON MEMORIAL POWER PLA	LAKELAND ELECTRIC & WATER U	A0 /2A	05-FEB-1990
/LARSON MEMORIAL POWER PLA	LAKELAND ELECTRIC & WATER U	A0 /2A	05-FEB-1990

Your query has retrieved 18 records.

Count: 14 v

<Replace>

Permit #: PATS:A053238714 Issue:15-DEC-1993 Expire:01-SEP-1998

Project #/Name	Owner/Company	Type/Sub	Receive
005/LAKELAND ELECTRIC/WATER U	LAKELAND ELECTRIC & WATER U	AC /M1	20-MAR-1997
006/LAKELAND/LARSEN ADMIN COR	LAKELAND ELECTRIC & WATER U	AV /03	26-OCT-1999
007/LAKELAND-LARSEN MEMORIAL	LAKELAND ELECTRIC & WATER U	AC /M1	25-FEB-2000
/LARSEN MEMORIAL UNIT 5	LAKELAND ELECTRIC & WATER U	AO /99	01-FEB-1985
/STEAM GENERATOR NO. 7	LAKELAND ELECTRIC & WATER U	AO /99	04-APR-1985
/LARSON MEMORIAL POWER PLA	LAKELAND ELECTRIC & WATER U	AO /99	04-APR-1985
/LARSEN PLANT--GAS TURBINE	LAKELAND ELECTRIC & WATER U	AO /00	07-JUN-1988
/LARSON MEMORIAL POWER PLA	LAKELAND ELECTRIC & WATER U	AO /2A	05-FEB-1990
/LARSON MEMORIAL POWER PLA	LAKELAND ELECTRIC & WATER U	AO /2A	05-FEB-1990
/LARSON MEMORIAL POWER PLA	LAKELAND ELECTRIC & WATER U	AO /2A	05-FEB-1990
/LARSON MEMORIAL POWER PLA	LAKELAND ELECTRIC & WATER U	AO /2A	05-FEB-1990
/COMBUSTION TURBINE	LAKELAND ELECTRIC & WATER U	AC /1A	17-DEC-1990
/COMBUSTION TURBINE	LAKELAND ELECTRIC & WATER U	AO /1A	17-SEP-1992
/LARSEN PLANT--GAS TURBINE	LAKELAND ELECTRIC & WATER U	AO /1B	01-OCT-1993

At last record.

Count: *18

^

<Replace>



City of Lakeland
WORLD CITRUS CENTER

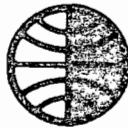
STATE OF FLORIDA SALES TAX EXEMPTION CERTIFICATE NO. 63-21-061508-54C

DATE
12-13-90
LK CH

CHECK NO.
00024009
15719

DATE	INVOICE OR CREDIT MEMO NUMBER	TYPE	DESCRIPTION	REFERENCE NO.	GROSS	AMOUNTS DISCOUNTS	NET
120790	T013004		T013004	664830	5000.00		5000.00
THE ATTACHED CHECK IS IN PAYMENT FOR ITEMS DESCRIBED ABOVE.					TOTAL	5000.00	5000.00

THE BACK OF THIS DOCUMENT CONTAINS AN ARTIFICIAL WATERMARK - HOLD AT AN ANGLE TO VIEW



City of Lakeland
WORLD CITRUS CENTER

SUN FIRST NATIONAL BANK
OF POLK COUNTY, WINTERHAVEN, FL
CENTRAL PAYING ACCOUNT
VOID AFTER 180 DAYS

CHECK NO.

024009

FIVE THOUSAND DOLLARS NO CENTS

PAY TO THE ORDER OF
DEPT OF ENVIRONMENTAL REG.

DATE
12-13-90

CHECK AMOUNT
*****5,000.00

[Signature] CITY MANAGER
[Signature] CITY TREASURER
[Signature] FINANCE DIRECTOR