



RECEIVED

FEB 01 1994

Bureau of  
Air Regulation

January 31, 1994

Mr. Clair H. Fancy, P.E., Chief  
Bureau of Air Regulation  
Florida Department of Environmental Protection  
2600 Blair Stone Road  
Tallahassee, FL 32399-2400

Re: Lake Cogen Limited and Pasco Cogen Limited  
AC35-196459; PSD-FL-176; Lake County  
AC51-196460; PSD-FL-177; Pasco County  
Request for Amendment of Construction Permit

Dear Clair:

As a followup to my meeting on January 21, 1994 with Charles Logan, I am attaching a revision to the January 17, 1994 request for the above-referenced project. The revision relates to Specific Condition 6 where the hours and MMBtu/hr should be deleted (i.e., at the end of this condition, strike ", which is an equivalent to 3,500 hours at 150 MMBtu/hr).

Please call if you have any questions.

Sincerely,

Kennard F. Kosky, P.E.  
President

KFK/lcb

cc: Bruce Miller, Pasco Cogen Limited  
Kevin Fullerton, Lake Cogen Limited  
Buck Oliver, Stewart & Stevenson  
Jeff Canon, Pasco Cogen Limited  
Richard Zwolak, KBN  
File (2)

**REQUESTED CHANGES TO THE SPECIFIC CONDITIONS**

1. The maximum allowable emissions from this facility shall not exceed the emission rates listed in Table 1.
6. The permitted materials and utilization rates for the combined cycle gas turbine shall not exceed the values as follows:
  - Maximum distillate fuel oil consumption shall not exceed either of the following limitations: 2,921 gals/hr/CT; 701,050 gals/yr/CT.
  - Maximum annual firing using fuel oil shall not exceed an equivalent of 10 days per year at full load.
  - Maximum sulfur (S) content in the oil shall not exceed 0.1 percent by weight.
  - Maximum heat input shall not exceed **384 423** MMBtu/hr/CT (gas at LHV) or **387 424** MMBtu/hr/CT (oil at LHV) at ISO conditions.
  - Duct firing shall be limited to natural gas firing only with a maximum heat input of **225 90** MMBtu/hr (HHV).
  - Duct firing shall be limited to 525,000 MMBtu/year/HRSG-duct burner, ~~which is an equivalent to 3,500 hours at 150 MMBtu/hour.~~
16. Combustion control shall be utilized for CO control. ~~Due to the lack of operational experience with the LM6000 and the uncertainty of actual CO emissions, The permittee shall leave a space suitable for future installation of an oxidation catalyst. Once performance testing has been completed, the decision to require an oxidation catalyst will be based on a cost/benefit analysis of using such control.~~
20. This source shall comply with all requirements of 40 CFR 60, Subparts GG and ~~Db~~ Dc and F.A.C. Rule 17-2.660(2)(a), Standards of Performance for Stationary Gas Turbines and Standards of Performance for Industrial, Commercial, and Institutional Steam Generating Units.



January 17, 1994

RECEIVED

JAN 18 1994

Bureau of  
Air Regulation

RECEIVED  
DTR - MAIL ROOM  
1994 JAN 18 AM 10:01

Mr. Clair H. Fancy, P.E., Chief  
Bureau of Air Regulation  
Florida Department of Environmental Protection  
2600 Blair Stone Road  
Tallahassee, FL 32399-2400

RE: Lake Cogen Limited  
AC35-196459; PSD-FL-176; Lake County  
Request for Modification of Construction Permit

Dear Clair:

This correspondence is submitted on behalf of Lake Cogen Limited, to request some minor changes to the construction permit issued for the facility. The source is a nominal 108-megawatt (MW) cogeneration facility located adjacent to the Golden Gem Citrus Processing Plant in Lake County, Florida. The cogeneration facility consists of two combustion turbines (CTs) exhausting through heat recovery steam generators (HRSG). The transition duct from the CT to each HRSG was permitted with duct burners (DBs) having a maximum heat input of 225 million British thermal units per hour (MMBtu/hr).

The allowable emission standards/limitations are expressed in terms of individual limits for the CT and the DBs. For nitrogen oxides ( $\text{NO}_x$ ) when firing the primary fuel (i.e., natural gas), the allowable emission standards are based on 25 parts per million by volume dry (ppmvd) at 15 percent  $\text{O}_2$  for the CT and 0.1 lb/MMBtu heat input for the DBs. The applicable new source performance standards (NSPS) for the CT is Subpart GG, which specifies an emission concentration of 75 ppmvd at 15  $\text{O}_2$  and corrected for heat rate (this equates to 112.5 ppmvd at 15 percent oxygen ( $\text{O}_2$ ) for this machine when firing natural gas). For the DBs, the NSPS listed in the construction permit is Subpart Db, which specifies an emission limit of 0.2 lb/MMBtu for natural gas. Emission-limiting standards are also listed for carbon monoxide (CO), particulate matter (PM)/particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (PM10), volatile organic compounds (VOCs), and visible emissions (VE). There are no applicable NSPS for these pollutants. Natural gas is used as primary fuel at the facility with oil (10 days per year) as emergency backup.

The construction permit was issued November 20, 1991, and expires June 1, 1994. Initial compliance tests were performed in September 1993. A detailed review of these tests and an inspection of the facility

90116A2/15

KBN ENGINEERING AND APPLIED SCIENCES, INC.

1034 Northwest 57th Street  
Gainesville, Florida 32605  
904-331-9000  
FAX 904-332-4189

5405 West Cypress Street,  
Suite 215  
Tampa, Florida 33607  
813-287-1717 FAX 813-287-1716

1801 Clint Moore Road, Suite 105  
Boca Raton, Florida 33487  
407-994-9910  
FAX 407-994-9393

6821 Southpoint Drive North,  
Suite 216  
Jacksonville, Florida 32216  
904-296-9663 FAX 904-296-0146

One Church Street, Suite 801  
Rockville, Maryland 20850  
301-738-1100  
FAX 301-738-1105



revealed some areas where changes to permit conditions are requested. Changes to Specific Conditions 1, 6, 16, and 20 are requested.

Please be advised, however, that this request does not constitute any change in total emissions from the facility. Indeed, this request includes reductions of maximum emissions from the facility using its primary fuel, i.e., natural gas. Moreover, the initial tests for the facility demonstrated that the combustion turbine can achieve and  $\text{NO}_x$  emission concentration of 25 ppmvd corrected to 15 percent  $\text{O}_2$ . This is an extremely low emission rate given the energy efficiency of the combustion turbines.

### Specific Condition 1

This condition sets forth the emission limits for the facility (see attached Specific Condition and Table 1). As discussed in the construction permit application, the combustion turbines selected for this project are the most efficient of all CTs and are the newest aircraft-derivative CT available from General Electric. Indeed, when the application was applied for, there was no operating data on this machine while achieving the performance and emission guarantees proposed for this project. The initial testing of the CTs and those of an identical project (Pasco Cogen Limited) indicated several areas where performance has been better than expected. First, the heat output from the CTs is higher than expected. This results in more available heat for the HRSG and a reduction in the requirements for duct firing. The original maximum duct firing rate of 225 MMBtu/hr was, therefore, not necessary to meet steam demands of the steam host and steam electric turbine. As a result, the DBs were installed with a maximum heat input capacity of 90 MMBtu/hr. This results in a reduction of the maximum emissions from the duct burner, i.e., the basis of calculating maximum emissions should be 90 MMBtu/hr rather than the 225 MMBtu/hr in the construction permit. This also changes the NSPS classification of the DBs from Subpart Db to Subpart Dc (see discussion of changes to Specific Condition 20). Please note that the DBs will still only use natural gas.

The other change observed from the initial tests was the performance of the CTs. The maximum output of the CTs is better than expected, which results in the maximum heat input of the units being slightly higher than that initially predicted at ISO conditions. In addition, the inlet air for the CTs is being controlled at a constant temperature to assure optimum performance. This inlet air temperature [about 51 degrees Fahrenheit ( $^{\circ}\text{F}$ )] is maintained by cooling or heating the inlet air as necessary to achieve the desired temperature.

Based on the initial tests (see summary attached) and final configuration of the facility, the following changes are requested. Attached are the calculations to support the requested changes.

1. CT Emissions of  $\text{NO}_x$ --Increase short-term [pounds per hour (lb/hr)] CT emission rate based on a requested increase in heat input (see discussion for Specific Condition 6). The basis for the limit is still 25 ppmvd corrected to 15 percent  $\text{O}_2$ .
2. CT Emissions of CO--Reduce emissions based on performance tests. As noted in Table 1 of the permit, the CO limit was subject to change because there was



uncertainty regarding the CO emissions due to the unknown performance of the CT (i.e., the LM 6000). As a result, high CO limits were requested. The initial performance tests found that the CO emissions rates were 25 ppmvd or less for all four identical CTs. It is requested that the Department consider an emission limit that would be the highest of the either the Lake or Pasco tests plus a 20 percent contingency to account for machine degradation and variability. This would be equivalent to 28 lb/hr/CT or about 28 ppmvd for natural gas firing. For oil firing, the CO emission limit proposed is 34.5 lb/hr for both CTs or about 18 ppmvd. These CO concentrations are in the range of that permitted for recent projects and would make an oxidation catalyst uneconomical (see also discussion of Specific Condition 16).

3. DB Emissions--Reduce maximum emissions attributed to the DB due to the lowering of the maximum heat input capability from 225 MMBtu/hr to 90 MMBtu/hr. The basis of the emission reductions are the same as that established as best available control technology (BACT), i.e., 0.1 lb/MMBtu for NO<sub>x</sub>, 0.2 lb/MMBtu for CO, 0.006 lb/MMBtu for PM/PM10, and 0.06 lb/MMBtu for VOCs.
4. Specify CT/DB Emission Limits--It is requested that the Department consider changing the specification of individual limits for DBs to emission limits applicable to the CT/DBs operating together. As noted, there will be **no increase in annual emissions** with this requested change to the permit; indeed, the combined emissions will be lower because the maximum heat input for the DBs are reducing by 60 percent (from 225 to 90 MMBtu/hr). The reasons for this request are fourfold. First, the large volume flow rate of the CT could produce erroneous results when compliance with DB emissions is determined. The combination of large flow rate and smaller emission contribution from the DBs can produce substantial apparent errors when none exist.

Second, determining the emission status of the facility will be much easier for the Department by having specific limits for the CT and CT/DB combination. Since the facility has installed a continuous emission monitoring (CEM) system for NO<sub>x</sub>, determining the emission status would be directly evident.

Third, the DBs cannot be operated without the CT; therefore, it is logical to specify emission limits for the combination rather than separately.

Finally, because there is no applicable NSPS limit, the DBs are not required to independently demonstrate compliance with any NSPS limit. The combined limit also would demonstrate compliance with the basis of the BACT determination because annual testing must be performed when both CT and the DBs are at 90 to 100 percent of full load. Therefore, the emissions cannot exceed the original emission basis of 25 ppmvd at 15 percent O<sub>2</sub> for the CT and 0.1 lb/MMBtu for the DBs.



#### **Specific Condition 6**

It is requested that the heat input be increased based on the performance tests. Also, the heat input should be changed from an ISO to an actual condition. The maximum requested heat input is based on the maximum ISO heat input (384 MMBtu/hr for natural gas and 387 MMBtu/hr for oil) corrected to the actual operating condition of 51°F plus a 5 percent margin to account for machine degradation and variability. This equates to 422.8 MMBtu/hr (LHV) for natural gas and 423.7 MMBtu/hr for oil (see attached calculations). Having an absolute maximum heat input is much easier to evaluate from both plant operation and enforcement perspective.

#### **Specific Condition 16**

It is requested that this condition eliminate the text related to the cost-benefit analysis. As noted above, a lower CO emission limit is requested for the project based on the performance tests. The CO emission limit would be based on a maximum CO concentration of about 28 ppmvd for natural gas and about 18 ppmvd for oil. This emission level is consistent with recently permitted projects. For example, the Orange Cogeneration Project (AC53-233851) and Kissimmee Utility Project (AC49-205703) have the same CTs, and the CO emission limits are based on 30 ppmvd. Moreover, the cost-effectiveness would be over \$4,150 per ton of CO removed. This is based on an annualized oxidation catalyst cost of \$968,120 and a reduction of 233.3 tons per year (350.3 - 117 tons per year; see pages 4-28 and 4-29 in the original application). Therefore, the performance tests demonstrated that CO emissions are much lower than originally requested (112 tons per year and 32.5 percent) and that an oxidation catalyst is unnecessary.

#### **Specific Condition 20**

As noted above, the applicable NSPS for the DBs are Subpart Dc. There are no emission limiting standards for natural gas firing, the only fuel used in the DBs. Thus, this condition should reflect Subpart Dc.

#### **Permit Fee**

A permit fee of \$250 as specified by Rule 17-4.050(4)(p)5., Florida Administrative Code (F.A.C.) is attached to this request.

Mr. Clair H. Fancy, P.E., Chief  
January 17, 1994  
Page 5



Please call if you have any questions. If it is necessary to meet on this request, I and representatives of Lake Cogen Limited would be available at your and your staff's convenience. As always, your consideration in this matter is appreciated.

Sincerely,

Kennard F. Kosky, P.E.  
President  
Florida Registration No. 14996

KFK/abb

cc: Kevin Fullerton, Lake Cogen Limited  
Buck Oliver, Stewart & Stevenson  
Preston Lewis, FDEP BAR  
Charles Collins, P.E., FDEP Central District  
File (2)

*J. Harper, EPA*  
*J. Bunyak, NPS*

**REQUESTED CHANGES TO THE SPECIFIC CONDITIONS**

1. The maximum allowable emissions from this facility shall not exceed the emission rates listed in Table 1.
6. The permitted materials and utilization rates for the combined cycle gas turbine shall not exceed the values as follows:
  - Maximum distillate fuel oil consumption shall not exceed either of the following limitations: 2,921 gals/hr/CT; 701,050 gals/yr/CT.
  - Maximum annual firing using fuel oil shall not exceed an equivalent of 10 days per year at full load.
  - Maximum sulfur (S) content in the oil shall not exceed 0.1 percent by weight.
  - Maximum heat input shall not exceed ~~384 423~~ MMBtu/hr/CT (gas at LHV) or ~~387 424~~ MMBtu/hr/CT (oil at LHV) at ISO conditions.
  - Duct firing shall be limited to natural gas firing only with a maximum heat input of ~~225 90~~ MMBtu/hr (HHV).
  - Duct firing shall be limited to 525,000 MMBtu/year/HRSG-duct burner, which is an equivalent to 3,500 hours at 150 MMBtu/hour.
16. Combustion control shall be utilized for CO control. ~~Due to the lack of operational experience with the LM6000 and the uncertainty of actual CO emissions, The permittee shall leave a space suitable for future installation of an oxidation catalyst. Once performance testing has been completed, the decision to require an oxidation catalyst will be based on a cost/benefit analysis of using such control.~~
20. This source shall comply with all requirements of 40 CFR 60, Subparts GG and ~~Db Dc~~ and F.A.C. Rule 17-2.660(2)(a), Standards of Performance for Stationary Gas Turbines and Standards of Performance for Industrial, Commercial, and Institutional Steam Generating Units.

67 mmbtu  
hr.

2625 @ 80 mmbtu



Table 1. Allowable Emission Limits Combined Cycle Combustion Turbine Lake Cogeneration Facility

Pollutant	Source <sup>a</sup>	Fuel <sup>b</sup>	Basis of Limit	Allowable Emission Limits			
				lbs/hr		tons/year	
NO <sub>x</sub>	CT	NG	BACT: 25 ppmvd at 15% O <sub>2</sub>	<del>78.8</del>	85.5	404.7	
	CT	DFO	BACT: 42 ppmvd at 15% O <sub>2</sub>	<del>137.0</del>	148.5		
	CT/DB	NG	BACT: DB @ 0.1 lb/MMBtu plus CT	<del>45.0</del>	103.5		
CO	CT	NG	BACT: 42 ppmvd	<del>80.6*</del>	56.0	466.5	350.3
	CT	DFO	BACT: 78 ppmvd	<del>151.0*</del>	34.5		
	CT/DB	NG	BACT: DB @ 0.2 lb/MMBtu plus CT	<del>90.0*</del>	92.0		
PM/PM <sub>10</sub>	CT	NG	BACT: 0.0065 lb/MMBtu	5.0		27.0	
	CT	DFO	BACT: 0.026 lb/MMBtu	20.0			
	CT/DB	NG	BACT: DB @ 0.006 lb/MMBtu plus CT	<del>2.6</del>	7.6		
SO <sub>2</sub>	CT	DFO	Established by Applicant 0.1% S	80		21.0	
VOC	CT	NG	Established by Applicant	3.3		30.8	
	CT	DFO	Established by Applicant	8.3			
	CT/DB	NG	Established by Applicant	<del>13.5</del>	8.7		
Mercury (Hg)	CT	DFO	Established by Applicant	--		0.0003	
Lead (Pb)	CT	DFO	Established by Applicant	--		0.0008	
Beryllium (Be)	CT	DFO	Established by Applicant	--		0.0002	
Sulfuric Acid Mist	CT	DFO	Established by Applicant	--		0.8	

<sup>a</sup> CT = combustion turbine

DB = duct burner

<sup>b</sup> NG = natural gas

DFO = distillate fuel oil

\* Emission limit for CO subject to change should additional control (oxidation catalyst) be required.

Summary of Initial Compliance Tests for Lake and Pasco Cogeneration Facilities

Parameter	Units	<u>Lake Cogen Limited</u>		<u>Pasco Cogen Limited</u>	
		Unit 1	Unit 2	Unit 1	Unit 2
NATURAL GAS FIRING					
Heat Input					
Actual	mmBtu/hr	385.0	391.3	396.1	404.5
ISO	mmBtu/hr	367.2	373.2	377.7	385.8
NO <sub>x</sub> Emissions					
Concentration	ppmvd @ 15% <sup>a</sup>	23.6	23.3	23.9	22.8
Mass	lb/hr	40.4	38.8	39.2	38.3
CO Emissions					
Concentration	ppmvd	24.3	22.5	23.2	20.8
Mass	lb/hr	24.9	21.8	22.6	20.8
OIL FIRING					
Heat Input					
Actual	mmBtu/hr	393.1	377.6	412.8	389.2
ISO	mmBtu/hr	377.0	362.1	396.0	373.3
NO <sub>x</sub> Emissions					
Concentration	ppmvd @ 15% <sup>a</sup>	35.8	27.2	35.3	40.8
Mass	lb/hr	62.3	46.0	64.8	69.4
CO Emissions					
Concentration	ppmvd	11.9	16.9	10.4	8.9
Mass	lb/hr	12.1	16.7	11.1	8.8

<sup>a</sup> ISO corrected.

CALCULATIONS TO SUPPORT REQUESTED PERMIT CHANGES  
(Page 1 of 3)

Natural Gas Firing

Heat Input

Permitted	384.0	mmBtu/hr @ ISO (LHV)
Actual at 51°F <sup>a</sup>	402.6	mmBtu/hr (LHV) (384/0.953691)
Requested <sup>b</sup>	422.8	mmBtu/hr (LHV) (1.05 x 402.6)

NO<sub>x</sub> Emissions CT Only

Permitted	78.8	lb/hr
Actual at 51°F <sup>c</sup>	81.4	lb/hr (78.8/0.968064)
Requested <sup>d</sup>	85.5	lb/hr (1.05 x 81.4)

NO<sub>x</sub> Emissions DB

Permitted	45	lb/hr
Requested <sup>e</sup>	18	lb/hr (90 x 0.1 x 2 CTs)

NO<sub>x</sub> Emissions CT & DB

Permitted - CT	78.8	lb/hr
Permitted - DB	45.0	lb/hr
Total:	123.8	lb/hr
Requested - CT	85.5	lb/hr
Requested - DB	18.0	lb/hr
Total:	103.5	lb/hr
Reduction:	20.3	lb/hr
	16.4%	

CO Emissions CT - Gas Firing

Permitted	80.6	lb/hr
Maximum	46.7	lb/hr/CT (from Lake Test; Units 1 and 2)
Requested <sup>f</sup>	56.0	lb/hr (1.2 x 46.7)

CO Emissions DB

Permitted	90	lb/hr
Requested <sup>g</sup>	36	lb/hr (90 x 0.2 x 2 CTs)

CO Emissions CT & DB

Permitted - CT	80.6	lb/hr
Permitted - DB	90.0	lb/hr
Total:	170.6	lb/hr
Requested - CT	56.0	lb/hr
Requested - DB	36.0	lb/hr
Total:	92.0	lb/hr
Reduction:	78.6	lb/hr
	46.0%	

CALCULATIONS TO SUPPORT REQUESTED PERMIT CHANGES  
(Page 2 of 3)

Natural Gas Firing

PM/PM10 Emissions CT & DB

Permitted - CT	5.0	lb/hr
Permitted - DB	2.6	lb/hr
Total:	7.6	lb/hr
Requested - CT	5.0	lb/hr
Requested - DB	1.1	lb/hr (0.006 x 90 x 2 CTs)
Total:	6.1	lb/hr
Reduction:	1.5	lb/hr
	20.0%	

VOC Emissions CT & DB

Permitted - CT	3.3	lb/hr
Permitted - DB	13.5	lb/hr
Total:	16.8	lb/hr
Requested - CT	3.3	lb/hr
Requested - DB	5.4	lb/hr (0.03 x 90 x 2 CTs)
Total:	8.7	lb/hr
Reduction:	8.1	lb/hr
	48.2%	

<sup>a</sup> ISO Actual Correction Factor = 0.953691 from GE data.

<sup>b</sup> 5 percent margin to account for machine variability.

<sup>c</sup> ISO Actual Correction Factor = 0.968064 from GE data.

<sup>d</sup> 5 percent margin to account for machine variability.

<sup>e</sup> Maximum heat input of 180 mmBtu/hr (HHV) and 0.1 lb NO<sub>x</sub>/mmBtu [Note: each DB would have a maximum heat input of 90 mmBtu/hr (HHV)].

<sup>f</sup> 20 percent margin to account for machine variability.

<sup>g</sup> Maximum heat input of 180 mmBtu/hr (HHV) and 0.2 lb NO<sub>x</sub>/mmBtu.

CALCULATIONS TO SUPPORT REQUESTED PERMIT CHANGES  
(Page 3 of 3)

Oil Firing and Annual CO Emissions

---

Heat Input

Permitted	387.0	mmBtu/hr @ ISO (LHV)
Actual at 51°F <sup>a</sup>	403.5	mmBtu/hr (LHV) (387/0.95914)
Requested <sup>b</sup>	423.7	mmBtu/hr (LHV) (1.05 x 403.5)

NO<sub>x</sub> Emissions CT

Permitted	137	lb/hr
Actual at 51°F <sup>c</sup>	141.3	lb/hr (137/0.969822)
Requested <sup>d</sup>	148.3	lb/hr (1.05 x 141.3)

CO Emissions CT

Permitted	151.0	lb/hr
Maximum	28.8	lb/hr/CT (from Lake Test)
Requested <sup>f</sup>	34.5	lb/hr (1.2 x 29)

Annual CO Emissions

Permitted	466.5	tons/year
CT - Gas Firing	343.4	tons/year (80.6 lb/hr @ 355 days/yr)
DB	105.0	tons/year (0.2 lb/mmBtu for 525,000 mmBtu/yr)
CT - Oil Firing	18.1	tons/year (151 lb/hr @ 10 days/yr)
Total:	466.5	tons/year

Requested

CT - Gas Firing	245.3	tons/year (56 lb/hr @ 8,760 hr/yr)
DB	105.0	tons/year (0.2 lb/mmBtu for 525,000 mmBtu/yr)
CT - Oil Firing	4.2	tons/year (35 lb/hr @ 10 days operation)
	350.3	tons/year (gas only; oil will have less emissions)

Reduction in CT:

112.0	tons/year
32.6%	

---

<sup>a</sup> ISO Actual Correction Factor = 0.95914 from GE data.

<sup>b</sup> 5 percent margin to account for machine variability.

<sup>c</sup> ISO Actual Correction Factor = 0.969822 from GE data.

<sup>d</sup> 5 percent margin to account for machine variability.

<sup>e</sup> 20 percent margin to account for machine variability.

KBN ENGINEERING AND APPLIED SCIENCES, INC.  
GAINESVILLE, FL 32605

V-3922 011031

PLEASE DETACH AND RETAIN FOR YOUR RECORDS

INVOICE NUMBER	DATE		VOUCHER NO.	AMOUNT
	01/14/94	Permit - Lake (90116-1320)		250.00

**KBN** Engineering and Applied Sciences, Inc.

GENERAL DISBURSEMENT ACCOUNT

PH. 904-331-9000  
1034 N.W. 57TH STREET  
GAINESVILLE, FL 32605

First Union National Bank  
of Florida  
Gainesville, Florida 32605

63-2/630  
Branch 311

011031

14 January 1994

PAY \*\*\*\*\*250\*\*\* DOLLARS AND 00 CENTS \$ \*\*\*\*\*250.00

TO THE  
ORDER  
OF

Florida Department of Environmental Protection  
2600 Blairstone Road  
Tallahassee FL 32399-2400

KBN ENGINEERING AND APPLIED SCIENCES, INC.

AUTHORIZED SIGNATURE

⑈011031⑈ ⑆063000021⑆ 2131100925716⑈



April 2, 1992

RECEIVED

MAY 5 1992

Bureau of  
Air Regulation

Mr. Clair Fancy  
Bureau of Air Regulation  
Florida Department of Environmental Regulation  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Subject: Lake County - A.P.  
Lake Cogen Limited  
AC35-196459; PSD-FL-176

Attention: Preston Lewis

Dear Preston:

As we discussed yesterday, the site layout for the Lake Cogen project has been revised to accommodate changes in the zero wastewater discharge equipment and desires by Florida Power Corporation to move the switchyard. An amendment to the industrial wastewater permit (Permit No. IC 35-204334) was submitted to the Central District Office on March 23, 1992.

Please find enclosed a revised plot plan for the facility which changes the one in the PSD Application (i.e., Figure 2-2). The location of the stack and its relationship to other structures that may influence aerodynamic downwash has not been changed from that originally submitted. Neither did any of the air emissions or controls proposed for the facility. The switchyard and cooling towers were moved to an adjacent parcel of land and miscellaneous equipment related to the zero discharge system was added to the site. As we discussed, these changes would not affect any of the conditions in the air construction or PSD permit or require further PSD review.

Please let me know within five working days after you receive this letter if you have any further questions or need additional information. (I could send you copy of the industrial wastewater permit if necessary.)

Your expeditious handling of these matters is always appreciated.

Sincerely,

A handwritten signature in dark ink, appearing to read "Kennard F. Kosky". The signature is fluid and cursive, with a long, sweeping underline that extends to the right.

Kennard F. Kosky, P.E.  
President

cc: Lake Cogen Ltd.

90116A2/1

KBN ENGINEERING AND APPLIED SCIENCES, INC.

1034 Northwest 57th Street Gainesville, Florida 32605 904/331-9000 FAX: 904/332-4189

EQUAL EMPLOYMENT OPPORTUNITY / AN AFFIRMATIVE ACTION EMPLOYER

**FEDERAL  
EXPRESS**

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL  
PACKAGE  
TRACKING NUMBER

0116-07 4567766

**RECIPIENT'S COPY**

From (Your Name) Please Print <b>Richard Zwolak/abb</b>		Your Phone Number (Very Important) <b>613, 287-1717</b>		To (Recipient's Name) Please Print <b>Mr. Clair Fancy</b>		Recipient's Phone Number (Very Important)	
Company		art / For		Company		Department/Floor No	
Street Address		City		City		State	
City		State		City		State	
ZIP Required		ZIP Required		ZIP Required		ZIP Required	
Division of Air		Tallahassee		FL		32399	
YOUR INTERNAL BILLING REFERENCE INFORMATION (First 24 characters will appear on invoice) <b>0116-07</b>							
PAYMENT 1 <input type="checkbox"/> Bill Sender 2 <input type="checkbox"/> Bill Recipient's FedEx Acct No 3 <input type="checkbox"/> Bill 3rd Party FedEx Acct No 4 <input type="checkbox"/> Bill Credit Card							
5 <input type="checkbox"/> Cash/Check							
IF HOLD FOR PICK-UP, Print FEDEX Address Here							
Street Address							
City							
State							
ZIP Required							
Emp No							
Date							
Federal Express Use							
Base Charges							
Declared Value Charge							
Other 1							
Other 2							
Total Charges							
REVISION DATE 4/91 PART #13/204 EXEM 6/91 FORMAT #082							
082							
© 1990-91 F.E.C. PRINTED IN U.S.A.							

4 SERVICES (Check only one box)		5 DELIVERY AND SPECIAL HANDLING (Check services required)		6 PACKAGES WEIGHT	
Priority Overnight (Delivery by next business morning) 11 <input type="checkbox"/> YOUR PACKAGING 16 <input type="checkbox"/> FEDEX LETTER 12 <input type="checkbox"/> FEDEX PAK 13 <input type="checkbox"/> FEDEX BOX 14 <input type="checkbox"/> FEDEX TUBE		Standard Overnight (Delivery by next business afternoon) 51 <input type="checkbox"/> YOUR PACKAGING 56 <input type="checkbox"/> FEDEX LETTER 52 <input type="checkbox"/> FEDEX PAK 53 <input type="checkbox"/> FEDEX BOX 54 <input type="checkbox"/> FEDEX TUBE		1 <input type="checkbox"/> HOLD FOR PICK-UP (If in Box 1) 2 <input checked="" type="checkbox"/> DELIVER WEEKDAY 3 <input type="checkbox"/> DELIVER SATURDAY (Extra charge) 4 <input type="checkbox"/> DANGEROUS GOODS (Extra charge) 5 <input type="checkbox"/> 6 <input type="checkbox"/> DRY ICE 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"/> 12 <input type="checkbox"/> HOLIDAY DELIVERY (if offered)	
Economy Two-Day (Delivery by second business day) 30 <input type="checkbox"/> ECONOMY		Government Overnight (Delivery by next business day) 46 <input type="checkbox"/> GOVT LETTER 41 <input type="checkbox"/> GOVT PACKAGE		Total Total	
Freight Service (For a full list of rates, see the back of this box) 70 <input type="checkbox"/> OVERNIGHT FREIGHT 80 <input type="checkbox"/> TWO-DAY FREIGHT				DIM SHIPMENT (Changeable Weight) 1 <input type="checkbox"/> 1-1/2 Trkg Box 2 <input type="checkbox"/> 2-1/2 Trkg Box 3 <input type="checkbox"/> 3-1/2 Trkg Box 4 <input type="checkbox"/> 4-1/2 Trkg Box 5 <input type="checkbox"/> 5-1/2 Trkg Box 6 <input type="checkbox"/> 6-1/2 Trkg Box 7 <input type="checkbox"/> 7-1/2 Trkg Box 8 <input type="checkbox"/> 8-1/2 Trkg Box 9 <input type="checkbox"/> 9-1/2 Trkg Box 10 <input type="checkbox"/> 10-1/2 Trkg Box 11 <input type="checkbox"/> 11-1/2 Trkg Box 12 <input type="checkbox"/> 12-1/2 Trkg Box 13 <input type="checkbox"/> 13-1/2 Trkg Box 14 <input type="checkbox"/> 14-1/2 Trkg Box 15 <input type="checkbox"/> 15-1/2 Trkg Box 16 <input type="checkbox"/> 16-1/2 Trkg Box 17 <input type="checkbox"/> 17-1/2 Trkg Box 18 <input type="checkbox"/> 18-1/2 Trkg Box 19 <input type="checkbox"/> 19-1/2 Trkg Box 20 <input type="checkbox"/> 20-1/2 Trkg Box 21 <input type="checkbox"/> 21-1/2 Trkg Box 22 <input type="checkbox"/> 22-1/2 Trkg Box 23 <input type="checkbox"/> 23-1/2 Trkg Box 24 <input type="checkbox"/> 24-1/2 Trkg Box 25 <input type="checkbox"/> 25-1/2 Trkg Box 26 <input type="checkbox"/> 26-1/2 Trkg Box 27 <input type="checkbox"/> 27-1/2 Trkg Box 28 <input type="checkbox"/> 28-1/2 Trkg Box 29 <input type="checkbox"/> 29-1/2 Trkg Box 30 <input type="checkbox"/> 30-1/2 Trkg Box 31 <input type="checkbox"/> 31-1/2 Trkg Box 32 <input type="checkbox"/> 32-1/2 Trkg Box 33 <input type="checkbox"/> 33-1/2 Trkg Box 34 <input type="checkbox"/> 34-1/2 Trkg Box 35 <input type="checkbox"/> 35-1/2 Trkg Box 36 <input type="checkbox"/> 36-1/2 Trkg Box 37 <input type="checkbox"/> 37-1/2 Trkg Box 38 <input type="checkbox"/> 38-1/2 Trkg Box 39 <input type="checkbox"/> 39-1/2 Trkg Box 40 <input type="checkbox"/> 40-1/2 Trkg Box 41 <input type="checkbox"/> 41-1/2 Trkg Box 42 <input type="checkbox"/> 42-1/2 Trkg Box 43 <input type="checkbox"/> 43-1/2 Trkg Box 44 <input type="checkbox"/> 44-1/2 Trkg Box 45 <input type="checkbox"/> 45-1/2 Trkg Box 46 <input type="checkbox"/> 46-1/2 Trkg Box 47 <input type="checkbox"/> 47-1/2 Trkg Box 48 <input type="checkbox"/> 48-1/2 Trkg Box 49 <input type="checkbox"/> 49-1/2 Trkg Box 50 <input type="checkbox"/> 50-1/2 Trkg Box 51 <input type="checkbox"/> 51-1/2 Trkg Box 52 <input type="checkbox"/> 52-1/2 Trkg Box 53 <input type="checkbox"/> 53-1/2 Trkg Box 54 <input type="checkbox"/> 54-1/2 Trkg Box 55 <input type="checkbox"/> 55-1/2 Trkg Box 56 <input type="checkbox"/> 56-1/2 Trkg Box 57 <input type="checkbox"/> 57-1/2 Trkg Box 58 <input type="checkbox"/> 58-1/2 Trkg Box 59 <input type="checkbox"/> 59-1/2 Trkg Box 60 <input type="checkbox"/> 60-1/2 Trkg Box 61 <input type="checkbox"/> 61-1/2 Trkg Box 62 <input type="checkbox"/> 62-1/2 Trkg Box 63 <input type="checkbox"/> 63-1/2 Trkg Box 64 <input type="checkbox"/> 64-1/2 Trkg Box 65 <input type="checkbox"/> 65-1/2 Trkg Box 66 <input type="checkbox"/> 66-1/2 Trkg Box 67 <input type="checkbox"/> 67-1/2 Trkg Box 68 <input type="checkbox"/> 68-1/2 Trkg Box 69 <input type="checkbox"/> 69-1/2 Trkg Box 70 <input type="checkbox"/> 70-1/2 Trkg Box 71 <input type="checkbox"/> 71-1/2 Trkg Box 72 <input type="checkbox"/> 72-1/2 Trkg Box 73 <input type="checkbox"/> 73-1/2 Trkg Box 74 <input type="checkbox"/> 74-1/2 Trkg Box 75 <input type="checkbox"/> 75-1/2 Trkg Box 76 <input type="checkbox"/> 76-1/2 Trkg Box 77 <input type="checkbox"/> 77-1/2 Trkg Box 78 <input type="checkbox"/> 78-1/2 Trkg Box 79 <input type="checkbox"/> 79-1/2 Trkg Box 80 <input type="checkbox"/> 80-1/2 Trkg Box 81 <input type="checkbox"/> 81-1/2 Trkg Box 82 <input type="checkbox"/> 82-1/2 Trkg Box 83 <input type="checkbox"/> 83-1/2 Trkg Box 84 <input type="checkbox"/> 84-1/2 Trkg Box 85 <input type="checkbox"/> 85-1/2 Trkg Box 86 <input type="checkbox"/> 86-1/2 Trkg Box 87 <input type="checkbox"/> 87-1/2 Trkg Box 88 <input type="checkbox"/> 88-1/2 Trkg Box 89 <input type="checkbox"/> 89-1/2 Trkg Box 90 <input type="checkbox"/> 90-1/2 Trkg Box 91 <input type="checkbox"/> 91-1/2 Trkg Box 92 <input type="checkbox"/> 92-1/2 Trkg Box 93 <input type="checkbox"/> 93-1/2 Trkg Box 94 <input type="checkbox"/> 94-1/2 Trkg Box 95 <input type="checkbox"/> 95-1/2 Trkg Box 96 <input type="checkbox"/> 96-1/2 Trkg Box 97 <input type="checkbox"/> 97-1/2 Trkg Box 98 <input type="checkbox"/> 98-1/2 Trkg Box 99 <input type="checkbox"/> 99-1/2 Trkg Box 100 <input type="checkbox"/> 100-1/2 Trkg Box	

7 Release Signature		Date/Time	
Emp No		Date/Time	





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.  
ATLANTA, GEORGIA 30365

4APT-AEB

DEC 13 1991

RECEIVED

DEC 16 1991

Division of Air  
Resources Management

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

RE: Lake Cogen Limited (PSD-FL-176)

Dear Mr. Fancy:

This is to acknowledge receipt of your final determination and Prevention of Significant Deterioration (PSD) permit for the above referenced facility, by your letter dated November 20, 1991. The proposed project is construction of a 108 megawatt cogeneration facility, consisting of two General Electric LM6000 combustion turbine units and a single heat recovery steam generator.

Your determination proposes to limit NO<sub>x</sub> emissions through wet injection for the combustion turbines and low NO<sub>x</sub> burners for the duct burner, to limit CO emissions by good combustion design, and to limit PM/PM<sub>10</sub> emissions by combustion design and the use of low sulfur distillate fuel oil. Your determination also outlines specific conditions to further reduce emissions. For CO, the final emissions limit will be based on actual compliance testing, and the applicant will leave sufficient space in the facility suitable for the future installation of an oxidation catalyst. For NO<sub>x</sub>, the applicant will be required to install a duct module suitable for the installation of selective catalytic reduction (SCR) equipment, and leave sufficient space in the heat recovery steam generator for future SCR installation.

We have reviewed the package as submitted and have no adverse comments. Thank you for the opportunity to review and comment on the package. If you have any questions or comments, please contact Mr. Scott Davis of my staff at (404) 347-5014.

Sincerely yours,

*B. A. Harper for*  
Jewell A. Harper, Chief  
Air Enforcement Branch  
Air, Pesticides, and Toxics  
Management Division

cc: P. Lewis  
C. Holladay  
A. Zacher, C. Dist.  
C. Shaver, OPS  
CHF/BA