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OCT 25 1991

Division of Air Resources Management

October 24, 1991

Mr. C. 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

Subject: Permit Applications - Lake County AC 35-196459, PSD-FL176
- Pasco County AC 51-196460. PSD-FL-177

Dear Clair:

This correspondence is submitted on behalf of Lake Cogen Limited and Pasco Cogen Limited to address questions raised in the letter from the U. S. Department of the Interior, Fish and Wildlife Service (FWS) dated October 15, 1991 concerning the above referenced permit applications. Specifically, I would like to address the FWS conclusion that Selective Catalytic Reduction be installed as Best Available Control Technology (BACT) for nitrogen oxide (NOx) emissions.

This FWS conclusion is inconsistent with the information presented in the application and the conclusions reached by the Department and the Environmental Protection Agency (see letter dated October 9, 1991 from Jewell Harper, Chief Air Enforcement Branch). Clearly, the Department and EPA have better requisite technical expertise concerning the BACT determination than the FWS, while the purview of the FWS should be appropriately focused on Air Quality Related Values (AQRVs) in the Class I Area (i.e., the Chassahowitzka Wilderness Area). It should be noted that the FWS had no adverse conclusion regarding AQRVs in the Class I area. Indeed, the maximum impact in the Class I area due to NOx emissions is 50 times lower than the Class I increment.

Nonetheless, there are several other factors that should be noted that further validate the BACT decision made by the Department. The BACT analysis presented in the application and the conclusions reached were based on a "top down" analysis of the economic, environmental and energy impacts of SCR versus the wet injection. In addition, information was presented concerning the advanced energy efficiency of the combustion turbine selected for the projects (i.e., the GE LM 6000). Taken together, this information clearly distinguishes the proposed projects from those using SCR.

First, as presented on page 4-25 of the Prevention of Significant Deterioration (PSD) Application, the proposed project will have thermal efficiency significantly better than conventional turbines for which FWS cites examples of SCR applications. When this thermal efficiency is considered, the cost effectiveness on an equivalent technology basis is $8,744 per ton of NOx removed [$7,435 x (1 + (25 - 20.6)/25)]. [Note that the latter term adjusts for the difference in efficiency of the LM 6000 and conventional turbines.]

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

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Second, we believe that the economic analysis which calculates cost effectiveness should also consider additional emissions that would be generated if SCR were installed. As presented in Table 4-7 of the PSD Application, SCR will directly cause to be emitted additional particulate matter and ammonia. These are listed as "primary" emissions in Table 4-7. The addition of SCR will also require electrical energy and reduce electrical energy otherwise available, i.e., energy lost due to back-pressure on the turbine. This lost energy will result in additional emissions of several pollutants which are listed in Table 4-7 as "secondary" emissions. The resulting cost effectiveness when total emissions are considered is $16,712 per ton of pollutant removed ($1,955,300/117 tons; the 117 tons is the net emissions decrease with SCR; see Table 4-7).

Finally, the BACT proposed for these cogeneration projects is truly "pollution prevention" which the Department has stated as being preferential for projects. There are several "pollution prevention" characteristics worthy of note. This includes using advanced combustion technology and wet injection to reduce NOx levels and reduce emissions per unit of electrical generation. In contrast, "SCR" is not "pollution prevention" since emissions of other pollutants will result at the expense of a small NOx reduction.

In conclusion, the information and analyses submitted concerning the BACT analysis for NOx clearly support the Departments decision in the Preliminary Determination and EPA's concurrence.

Please call if there are any questions concerning this response. Your efforts to expedite the issuance of the construction permits for these projects would be greatly appreciated.

Sincerely,

Kennard F. Kosky

Kennard F. Kosky, P.E.
President and Principal Engineer

cc: Lake, and Pasco Cogen Limited
Project File
P. Temes
C. Holladay
B. Thomas, SW Dist
A. Zahm, C Dist,
J. Harper, EPA
C. Shaver, NPS
CHF/BA

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Mountain-Prairie Region

IN REPLY REFER TO:

RW Air Quality
Mail Stop 60130

MAILING ADDRESS:
Post Office Box 25486
Denver Federal Center
Denver, Colorado 80225

STREET LOCATION:
134 Union Blvd.
Lakewood, Colorado 80228

OCTOBER 15 1991

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OCT 21 1991
Division of Air
Resources Management

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

Dear Mr. Andrews:

We have completed our review of the Pasco Cogeneration Limited (Pasco) and Lake Cogeneration Limited (Lake) permit applications and your Technical Evaluation and Preliminary Determination Documents (TEPDD) regarding these projects. As you will recall, the Pasco project is a 108 megawatt cogeneration facility proposed for the site of the existing Lykes-Pasco Citrus Processing Plant which is located 51 km southeast of the Chassahowitzka Wilderness Area (WA), a class I air quality area administered by the U.S. Fish and Wildlife Service. The proposed facility will consist of two combustion turbines and two heat recovery steam generators, and will emit significant amounts of nitrogen oxides (NO_x), particulate matter (PM), and carbon monoxide (CO), in addition to small amounts of other pollutants. The proposed Lake project will be an identical facility located adjacent to the existing Golden Gem Citrus Processing Plant which is 93 km southeast of the Chassahowitzka WA.

As you know, the Chassahowitzka National Wildlife Refuge was established in 1943 for the purpose of migratory bird conservation. The refuge provides habitat for a number of federally threatened and endangered species including the American alligator, bald eagle, eastern brown pelican, eastern indigo snake, and three species of sea turtle. In addition, the Chassahowitzka National Wildlife Refuge and the nearby Crystal River National Wildlife Refuge provide a safe haven for the endangered Florida manatee whose presence attracts an ever-growing number of tourists to the region. Our comments on the best available control technology (BACT), air quality modeling, and air quality related values (AQRVs) analyses with respect to the proposed projects' potential impacts on the Chassahowitzka WA are discussed below.

Regarding the BACT analysis, we agree that combustion controls and the firing of low sulfur fuels (natural gas as the primary fuel and 0.10 percent sulfur fuel oil as the backup) represent BACT to minimize PM, CO, and sulfur dioxide (SO_2) emissions from the proposed turbines. However, we believe that Selective Catalytic Reduction (SCR), in combination with wet (water or steam) injection systems, not the proposed wet injection alone, is BACT for NO_x emissions.

The SCR technology could reduce NO_x emissions from the proposed turbines to as low as 6 parts per million (ppm), but 9 ppm is most often required in new permits. The Florida Department of Environmental Regulation (FDER) and the permit applicants did consider SCR in the BACT analysis. Pasco and Lake calculated a cost effectiveness of $7,443 per ton of NO_x removed to reduce the turbine NO_x emissions from the proposed 25 ppm level to 9 ppm, using SCR. Based on this cost effectiveness value, the FDER determined that the use of SCR technology is not justified at this time.

There is overwhelming support for SCR as BACT for new combined cycle turbines. The permit applications state on page 4-3 that SCR has been installed or permitted in about 132 combined cycle turbine projects. For many of these projects, the decision to require SCR was based on the need to comply with BACT requirements. Furthermore, in a draft technical memorandum the Northeast States for Coordinated Air Use Management (NESCAUM) states, "As of March 1991, there were at least 28 gas turbines in the NESCAUM region that either have permits and will use SCR technology or are proposing to use SCR technology to control emissions of nitrogen oxides.... By applying SCR technology to these 28 projects, potential reductions of more than 20,000 tons of NO_x per year are achievable. These projects indicate that the cost-effectiveness for advanced NO_x control systems is considered "reasonable" compared to other NO_x controls being considered by the agencies."

The FDER's BACT determination references a recent letter from EPA Region IV which states that 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. Neither Pasco nor Lake made such a showing with respect to SCR. Therefore, we ask that you reconsider your initial BACT determination and require SCR on the proposed turbines.

For your information, Pasco and Lake are correct in stating that dry low-NO_x (DLN) combustors are currently not available for the proposed General Electric (GE) LM 6000 turbines. However, in a recent letter regarding a proposed turbine project in Colorado, GE indicated that they are currently developing a DLN combustion system for the LM 6000 gas turbine. General Electric expects this initial system to be made commercially available in mid-1994, and to emit no more than 25 ppm NO_x. As experience accumulates and the design is refined, GE is confident that NO_x levels of 15 ppm can be achieved within two to three years of introduction.

We were pleased to see that the FDER advised the applicants in a May 31, 1991, letter that there are no PSD significant impact levels for class I areas, and that you required the applicants to perform a cumulative class I increment analysis that included all increment-consuming sources in the airshed affecting the Chassahowitzka WA. Our review shows that the Industrial Source Complex analyses performed by the applicants for the Pasco and Lake projects were appropriate for the proposed individual sources and also for the cumulative increment determinations. There were no predicted increment exceedances for any averaging times for either NO_x

or PM. Based on the class I cumulative impacts given in the TEPDDs, it appears that increment consumption for these pollutants does not pose the immediate concern that we face for SO_2 increment consumption in the Chassahowitzka WA. Although PSD regulations did not require Lake and Pasco to perform a cumulative analysis for SO_2 since they would not emit significant amounts of the pollutant, their emissions do consume increment and should be included in SO_2 increment analyses performed by future applicants proposing to locate in the Chassahowitzka WA airshed.

Regarding the AQRVs analyses, we found that the visibility screening for the proposed facilities was properly performed by Pasco and Lake and showed low potential for visibility impairment due to plumes in the Chassahowitzka WA. However, we found the analyses of impacts to other AQRVs to be deficient. Both Pasco and Lake in their applications, and the FDER in the TEPDDs, state that since the predicted impacts for regulated pollutants are less than the significant impact levels, no impacts to soils and vegetation are expected. This is inconsistent with your comment we cited earlier regarding the lack of class I significant impact levels. It seems reasonable that if a lack of significant impact levels requires an applicant to consider class I areas for modeling analyses, then it would also require the applicant to perform a complete AQRVs analysis. Therefore, we ask that you require future permit applicants to address potential impacts to class I area AQRVs (including soils, vegetation, water, and wildlife) regardless of whether or not they predict their impacts will be significant. As we have indicated in past permit reviews, AQRVs are affected not only by the incremental impacts of a proposed source, but also by the total pollutant concentrations that they will experience. To do a proper AQRVs analysis, permit applicants should perform a cumulative air quality modeling analysis of all sources in the area, which incorporates any measured ambient levels, and use this concentration when addressing impacts to AQRVs.

Finally, we noticed that the estimated emissions of mercury, beryllium, lead, and sulfuric acid mist are lower than the allowable emission limits proposed in the draft permit conditions. We realize that the proposed emissions of these pollutants fall below the significant emission rates. Nevertheless, we recommend that you revise the allowable limits to more accurately reflect the expected emissions.

In conclusion, we ask that you reconsider requiring Pasco and Lake to use SCR on their proposed turbines, and adjust the allowable emissions of the pollutants mentioned above in the final permit conditions. We also ask that you require future permit applicants to perform a complete AQRV analysis, regardless of their modeled impacts, and remind you that the SO_2 emissions from the Pasco and Lake facilities should be included in any future cumulative SO_2 increment analysis for the Chassahowitzka WA.

If you have any questions regarding our comments, please contact Tonnie Maniero of our Air Quality Branch at (303) 969-2071.

Sincerely,

Wilbur N. Ladd, Jr.
Assistant Regional Director
Refuges and Wildlife, Region 6

cc: Jellell Harper, Chief
Air Enforcement Branch
Air, Pesticides and Toxic Management Division
U.S. EPA, Region 4
345 Courtland Street, NE
Atlanta, Georgia 30365

C. Fancy
P. Lewis
C. Holladay
B. Thomas, SW Distr.
A. Zahn, C Dist.

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OCT 28 1991

Division of Air
Resources Management

October 9, 1991

Mr. C.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

Subject: Lake Cogen Limited; FDER File No. AC 35-196459; PSD-FL-176
Pasco Cogen Limited; FDER File No. AC 51-196460; PSD-FL-177

Dear Clair:

This correspondence is submitted on behalf of Lake Cogen Limited and Pasco Cogen Limited for the purpose of supplying comments to the Department's proposed action relative to the above referenced permits.

The expiration date of the Lake Cogen Limited facility (AC 35-196459), as written in the proposed permit, is June 1, 1993. This appears to be a typographical error since an expiration date of June 1, 1994 was requested for both facilities. The Pasco Cogen Limited facility has an expiration date of June 1, 1994 as requested.

The wording of Specific Condition 15 in the proposed permit for the Pasco Cogen Limited facility includes the phrase "in HRSG" in the third sentence. The term "in HRSG" which was not included in the same condition for the Lake Pasco Limited facility. To make the language in both permits consistent, please consider deleting this phrase (i.e., "in HRSG") in Specific Condition 15 of the final Pasco Cogen Limited permit. The language with such term deleted provides some flexibility as to where space must be provided, but still establishes the Department's requirement that the unit must be capable (i.e. sufficient space must be made available) of having SCR installed.

KBN ENGINEERING AND APPLIED SCIENCES, INC.
1034 Northwest 57th Street Gainesville, Florida 32605 904/331-9000 FAX: 904/332-4189

I greatly appreciated your staff's efforts in processing these proposed permits. Please call if there are any questions related to this request.

Sincerely,

Kennard F. Kosky, P.E.
President and Principal Engineer

cc: Earnest L. Mize

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY - REGION IV
AIR, PESTICIDES & TOXICS MANAGEMENT DIVISION
345 Courtland Street, N. E.
Atlanta, Georgia 30365
Fax Number: FTS 257-5207 or 404/347-5207

FACSIMILE TRANSMISSION SHEET

DATE: 10-9-91 NUMBER OF PAGES (Including this sheet) 2

(Preparer must number all pages)

TO: Clay Tooey PHONE:

ADDRESS: RQER FAX NUMBER: (904) 922-6979

FROM: Scott Davis PHONE: (404) 347-5014

If the following pages are received poorly, please call Nancy at FTS 257-5014 or 404/347-5014.

SPECIAL INSTRUCTIONS FOR RECEIVER:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

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

4APT-AEB

OCT - 9 1991

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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 preliminary determination and draft Prevention of Significant Deterioration (PSD) permit for the above-referenced facility, by your letter dated September 9, 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_x emissions through wet injection for the combustion turbines and low NO_x burners for the duct burner, to limit CO emissions by good combustion design, and to limit PM/PM_{10} 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_x, 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,

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

PEOPLES COGENERATION COMPANY

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SEP 20 1991

Division of Air
Resources Management

September 20, 1991

Mr. C. 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

Subject: Lake Cogen Limited; FDER File No. AC 35-196459; PSD-FL-176
Pasco Cogen Limited; FDER File No. AC51-196460; FSD-FL-177

Dear Mr. Clair:

Attached please find the Affidavit of Advertising Public Notice for the Florida Department of Environmental Regulation Notice of Intent to issue the air permit for the Lake Cogen Limited and Pasco Cogen Limited facilities.

Sincerely,

W Bruce Miller

W. Bruce Miller
Manager of Cogeneration

cc: P. Lewis
B. Andrews
C. Holladay
B. Thomas, SW Dist.
J. Harper, EPA
C. Shavers, NPS

111 MADISON STREET • P.O. BOX 2562 • TAMPA, FLORIDA 33601-2562 • (813) 273-0074 • FAX (813) 272-0061

The Orlando Sentinel

Published Daily
Tavares, Lake County, Florida

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SEP 20 1991

Division of Air
Resources Management

ADVERTISING CHARGE $22.63

State of Florida
COUNTY OF ORANGE } SS.

Before the undersigned authority personally appeared Juanita Rosado who on oath says that she is the Legal Advertising Representative of The Orlando Sentinel, a Daily newspaper published at Tavares, in Lake County, Florida; that the attached copy of advertisement, being a notice of intent to issue in the matter of Lake Cogen Limited in the Court, was published in said newspaper in the issues of September 19, 1991

Affiant further says that the said Orlando Sentinel is a newspaper published at Tavares, in said Lake County, Florida, and that the said newspaper has heretofore been continuously published in said Lake County, Florida, each Week Day and has been entered as second-class mail matter at the post office in Tavares in said Lake 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/she 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.

Juanita Rosado

Sworn to and subscribed before me this 20th day of September A.D., 1991

Naomi R. Green
Notary Public

Notary Public, State of
My Commission Expires August 28, 1994
Bonded Thru Brown & Brown, Inc.

Seal

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF INTENT TO ISSUE PERMIT

The Department of Environmental Regulation gives notice of its intent to issue a PSD permit to Lake Cogen Limited, 220 Madison Street, Tampa, Florida 33601, to construct and operate a 108 MW combined cycle gas turbine cogeneration facility located in Lake County, Florida. A determination of Best Available Control Technology (BACT) was required. The Class I PM10 PSD increment consumed is 0.06 vs. 8 allowable 24-hour average and 0.005 vs 4 allowable annual average, in micrograms per cubic meter. The Class I nitrogen dioxide increment consumed is 0.2 vs. 2.5 allowable annual average, in micrograms per cubic meter. The maximum predicted increases in ambient concentrations for the above three pollutants for all averaging times are less than significant in the Class II area surrounding plant, thus no increment consumption was calculated. The department is issuing this Intent to Issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

A person whose substantial interests are affected by the Department's proposed permitting decision 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 publication of this notice. 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 facts which petitioner contends warrant 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 Notice. Persons whose substantial interest 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 publication 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 Florida Administrative Code.

The application 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 Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
Department of Environmental Regulation
Central District
3319 Maguire Blvd. Suite 232
Orlando, Florida 32803-3767

Any person may send written comments on the proposed action to Mr. Barry Andrews at the Department's Tallahassee address. All comments received within 30 days of the publication of this notice will be considered in the Department's final determination. Further, a public hearing can be requested by any person. Such requests must be submitted within 30 days of this notice.

FORM NO. AD-261

LK-380 Sept.19,1991