

The Orlando Sentinel

Published Daily
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State of Florida } S.S.
COUNTY OF ORANGE

PSD-182
0970043-004-AC

**PUBLIC NOTICE OF INTENT
TO ISSUE
AIR CONSTRUCTION
PERMIT MODIFICATION**
STATE OF FLORIDA
DEPARTMENT OF
ENVIRONMENTAL
PROTECTION
Permit No. AC49-205703,
PSD-FL-182
File No. 0970043-004-AC
Kissimmee Utility Authority-Cane Island Simple Cycle Unit
Osceola County

Before the undersigned authority personally appeared JUANITA ROSADO

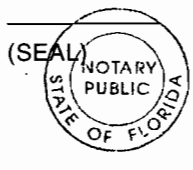
, who on oath says that he/she is the Legal Advertising Representative of The Orlando Sentinel, a daily newspaper published at KISSIMMEE in OSCEOLA County, Florida; that the attached copy of advertisement, being a PUBLIC NOTICE OF INTENT in the matter of PERMIT NO. AC49-205703

in the OSCEOLA Court, was published in said newspaper in the issue; of 02/28/97.

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

The foregoing instrument was acknowledged before me this 28 day of FEBRUARY, 1997, by JUANITA ROSADO, who is personally known to me and who did take an oath.

Susan K. Wentzell
SUSAN K. WENTZELL
My Comm Exp. 11/23/97
Bonded By Service Ins
No. CC332326
 Personally Known Other I. D.



cc: C. Holladay, BAR

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit modification of Kissimmee Utility Authority, for the Simple Cycle Unit located at its Cane Island Facility near Intercession City, Osceola 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: Kissimmee Utility Authority, (KUA), 1701 West Carroll Street, Kissimmee, Florida 34741.

The unit is in compliance with its present nitrogen oxide(NOx) limit of 25 parts per million (ppm). Specific Condition No. 15B of the above referenced construction permit requires that the manufacturer attempt to achieve an NOx emission limit of 15 ppm by January 1, 1998 and to inform the Department of a revised compliance schedule should the limit not be achievable on that date. This limit is to be achieved through a dry low emission (DLE) retrofit package. The manufacturer has documented that the DLE development program has not progressed to the point of being able to ensure a retrofit package capable of meeting the 15 ppm rate by January 1, 1998. The modification will extend the compliance date of Specific Condition No. 15 b from January 1, 1998 to January 1, 1999.

The Department will issue the FINAL Permit Modification, in accordance with the conditions of the DRAFT Permit Modification 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 Modification issuance action for a period of 30 (thirty) days from the date of publication of this Notice. 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 Modification, the Department shall issue a Revised DRAFT Permit Modification and require, if applicable, another Public Notice.

The Department will issue FINAL Permit Modification with the conditions of the DRAFT Modification unless a timely petition for an administrative hearing is filed pursuant to Section 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 interest are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Section 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: 904/488-9370, fax: 904/487-4938. 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 Section 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 or 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 or proposed action; (c) A statement of how each petitioner 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; and (g) statement of the relief sought by the petition, 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 person whose substantial interests are affected by the Depart-

KUA

0970043-004-AC

ment's proposed permitting decision, may elect to pursue mediation by asking all parties to the proceeding to agree to such mediation and by filing with the Department a request for mediation and the written agreement of all such parties to mediate the dispute. The request and agreement must be filed in (received by) the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, by the same deadline as set forth above for the filing of a petition.

A request for mediation must contain the following: (a) The name, address, and telephone number of the person requesting mediation and that person's representative, if any; (b) A statement of the preliminary agency action; (c) A statement of the relief sought; and (d) Either an explanation of how the requester's substantial interests will be affected by the action or proposed action addressed in this notice of intent or a statement clearly identifying the petition for hearing that the requester has already filed, and incorporating it by reference.

The agreement to mediate must include the following (a) The names, address, and telephone numbers of any persons who may attend the mediation; (b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time; (c) The agreed allocation of the costs and fees associated with the mediation; (d) The agreement of the parties on the confidentiality of discussions and documents introduced during mediation; (e) The date, time, and place of the first mediation session, or a deadline for holding the first session, if no mediator has yet been chosen; (f) The name of each party's representative who shall have authority to settle or recommend settlement; and (g) The signatures of all parties or their authorized representatives.

As provided in Section 120.573 F.S., the timely agreement of all parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57 F.S. for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections 120.569 and 120.57 F.S. remain available for disposition of the dispute, and the notice will specify the deadline that then will apply for challenging the agency action and electing remedies under those two statutes.

A complete project file is available for public inspection during normal business hours, 8:00a.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: 904/488-1344
Fax: 904/922-6979

Department of Environmental Protection
Central District
3319 Maquire Boulevard, Suite 232
Orlando, Florida 32803-3767
Telephone: 407-894-7555
Fax: 407-897-2966

OSC1391488

FEB. 28, 1997

RECEIVED

The Orlando Sentinel

Published Daily \$35.50

OCT 22 1996

BUREAU OF AIR REGULATION

State of Florida } S.S. COUNTY OF ORANGE

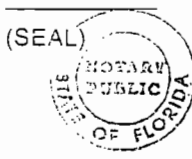
BEVERLY C. SIMMONS Before the undersigned authority personally appeared

who on oath says that he/she is the Legal Advertising Representative of The Orlando Sentinel, a daily newspaper published at KISSIMMEE in OSCEOLA County, Florida; that the attached copy of advertisement, being a PUBLIC NOTICE OF I in the matter of PERMIT NO. 0970043-003/AC in the OSCEOLA Court, was published in said newspaper in the issue; of 10/06/96

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

The foregoing instrument was acknowledged before me this 9th day of OCTOBER, 19 96, by BEVERLY C. SIMMONS who is personally known to me and who did take an oath.

MANITA ROSADO My Comm Exp. 10/3/98 Bonded By Service Ins No. CC392006



CC: EPA NPS CD

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT AMENDMENT STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION DRAFT Permit Amendment No. 0970043-003/AC, (PSD-FI-182) Testing Requirement at Cane Island Facility Osceola County The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit amendment to Kissimmee Utility Authority for the Testing Requirement at Cane Island Facility

located near Intercession City, Osceola County. A Best Achievable Control Technology (BACT) determination was not required. The amendment will not result in an increase in any emissions from the facility, and will not cause a violation of any state or federal ambient air quality standards or increments. The applicant's name and address are: Kissimmee Utility Authority (KUA), 1701 West Carroll Street, Kissimmee, Florida 34741. The amendment makes the following changes: compliance with the nitrogen oxide (NOx) emission limit will be determined using data from the nitrogen oxide continuous emissions monitor (CEM) instead of by using annual compliance testing for nitrogen oxide; removes the requirement for annual testing for particulate matter, sulfuric acid mist and VOC; and specifies that measured NOx emissions shall not be ISO corrected for comparison with the BACT standard. The unit burns natural gas, an inherently clean fuel, and very low sulfur fuel oil when gas is not available. The continuous monitoring method of compliance is superior to an annual test. KUA has already demonstrated very low emissions of particulate matter, sulfuric acid and VOC due to burning of clean fuels. The new basis for compliance with the NOx limit is consistent with Department guidance.

The Department will issue the FINAL Permit Amendment in accordance with the conditions of the enclosed DRAFT Permit 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 the proposed DRAFT Permit Amendment issuance action for a period of 14 (fourteen) 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 #6505, 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 Amendment, the Department will issue a Revised DRAFT Permit Amendment and require, if applicable, another Public Notice. In addition, any person whose substantial interests are affected by this proposal permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000 (Telephone: 904/88-9730; FAX: 904/487-4938), within 14 (fourteen) 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, F.S. The Petition shall contain the following information: (a) The name, address, and the telephone number of each petitioner; (b) the applicant's name and address, the Department Permit Amendment File Number and the county in which the project is proposed; (c) A statement of how and when each petitioner received notice of the Department's action or proposed action; (d) A statement of how

partment's action or proposed action; (d) A statement of the material facts asserted 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 DRAFT Permit Amendment. 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 (fourteen) days of receipt of this notice, in the Office of General Counsel at the address referenced above. Failure to petition within the allotted time frame constitutes a waiver of any rights such person has to request a hearing under Section 120.57, F.S. and to participate as a party to the proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 600-2.010, Florida Administrative Code. 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 South Magnolia Drive, Suite 4 Tallahassee, Florida 32301 Telephone: 904/488-1344 Fax: 904/922-6979

Department of Environmental Protection Central District 3319 Maguire Boulevard, Suite 232 Orlando, Florida 32803 Telephone: 407/294-7555 Fax: 407/897-2666 The complete project file includes the Draft Permit 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 Source Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 904/488-1344, for additional information. OSC:176138 OCT.6.1996



Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

September 30, 1996

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. A. K. Sharma
Director of Power Supply
Kissimmee Utility Authority
1701 West Carroll Street
Kissimmee, Florida 34741

Re: DRAFT Air Construction Permit Amendment No.: 0970043-003-AC (PSD-FL-182)
Testing Requirement at Cane Island Facility

Dear Mr. Sharma:

Enclosed is one copy of the DRAFT Air Construction Permit Amendment for the Testing Requirement at Cane Island Facility located near Intercession City, Osceola County. The Department's Intent to Issue Air Construction Permit Amendment and the "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT AMENDMENT" are also included.

The "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT 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 Mr. A. A. Linero at the above letterhead address. If you have any other questions, please contact Cleve Holladay or Mr. Linero at 904/488-1344.

Sincerely,

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

CHF/ch

Enclosures



In the Matter of an
Application for Permit by:

Kissimmee Utility Authority
1701 West Carroll Street
Kissimmee, Florida 34741/

DRAFT Permit Amendment No.:0970043-003-AC,
(PSD-FL-182)
Testing Requirement at Cane Island Facility
Osceola County

INTENT TO ISSUE AIR CONSTRUCTION PERMIT AMENDMENT

The Department of Environmental Protection (Department) gives notice of its intent to issue a air construction permit amendment (copy of DRAFT Permit Amendment enclosed) for the permit revision, as detailed in the application specified above, for the reasons stated below.

The applicant, Kissimmee Utility Authority, applied on August 27, and September 13, 1996, to the Department for an air construction permit amendment for the Testing Requirement at Cane Island Facility located near Intercession City, Osceola County. The amendment makes the following changes: 1) compliance with the nitrogen oxide emission limit will be determined using data from the nitrogen oxide continuous emissions monitor (CEM) instead of by using annual compliance testing for nitrogen oxide, 2) removes the requirement for annual testing for particulate matter, sulfuric acid mist and VOC, and 3) specifies that measured NO_x emissions shall not be ISO corrected for comparison with the BACT standard.

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, 62-212. This source is not exempt from permitting procedures. The Department has determined that the air construction permit amendment is required to commence or continue operations at the described facility.

The Department intends to issue this air construction permit 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 Sections 403.815 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 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: 904/488-1344; Fax: 904/922-6979), 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 pursuant to Rule 62-103.150(6), F.A.C.

The Department will issue FINAL Permit Amendment in accordance with the conditions of the enclosed DRAFT Permit 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 permit issuance action for a period of 14 (fourteen) days from the date of publication of "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT AMENDMENT." Written comments should be provided to the permitting authority office. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit Amendment, the Department shall issue a Revised DRAFT Permit Amendment and require, if applicable, another Public Notice.

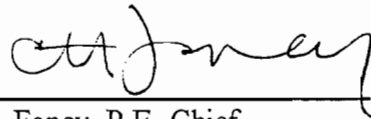
In addition, any person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000 (Telephone: 904/488-9730; Fax: 904/487-4938). Petitions filed by the permit applicant and the parties listed below must be filed within 14 (fourteen) days of receipt of this intent. Petitions filed by other persons must be filed within 14 (fourteen) days of publication of the public notice or within 14 (fourteen) days of the receipt of this intent, whichever first occurs. 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, F.S.

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 Amendment File Number and the county in which the proposed source will operate; (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 the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes 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 the 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 DRAFT Permit Amendment. 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 (fourteen) days of receipt of this intent in the Office of General Counsel at the address referenced above. 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 60Q-2.010, F.A.C.

Executed in Tallahassee, Florida.

**STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION**



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 AMENDMENT (including the PUBLIC NOTICE) and copies were mailed by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 9-30-96 to the persons listed:

Mr. A. K. Sharma, Kissimmee Utility Authority *
Mr. Brian Beals, EPA
Mr. Jerome Guidry, P.E., Perigee
Mr. Len Kozlov, CD
Mr. John Bunyak, NPS

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Kern Jober 9/30/96
(Clerk) (Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT AMENDMENT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DRAFT Permit Amendment No.: 0970043-003-AC, (PSD-FL-182)
Testing Requirement at Cane Island Facility
Osceola County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit amendment to Kissimmee Utility Authority for the Testing Requirement at Cane Island Facility located near Intercession City, Osceola County. A Best Achievable Control Technology (BACT) determination was not required. The amendment will not result in an increase in any emissions from the facility, and will not cause a violation of any state or federal ambient air quality standards or increments. The applicant's name and address are: Kissimmee Utility Authority, (KUA) 1701 West Carroll Street, Kissimmee, Florida 34741. The amendment makes the following changes: compliance with the nitrogen oxide (NO_x) emission limit will be determined using data from the nitrogen oxide continuous emissions monitor (CEM) instead of by using annual compliance testing for nitrogen oxide; removes the requirement for annual testing for particulate matter, sulfuric acid mist and VOC; and specifies that measured NO_x emissions shall not be ISO corrected for comparison with the BACT standard.

The unit burns natural gas, an inherently clean fuel, and very low sulfur fuel oil when gas is not available. The continuous monitoring method of compliance is superior to an annual test. KUA has already demonstrated very low emissions of particulate matter, sulfuric acid and VOC due to burning of clean fuels. The new basis for compliance with the NO_x limit is consistent with Department guidance.

The Department will issue the FINAL Permit Amendment, in accordance with the conditions of the enclosed DRAFT Permit 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 Amendment issuance action for a period of 14 (fourteen) 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 Amendment, the Department shall issue a Revised DRAFT Permit Amendment and require, if applicable, another Public Notice.

In addition, any person whose substantial interests are affected by this proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000 (Telephone: 904/488-9730; Fax: 904/487-4938), within 14 (fourteen) 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, F.S.

The Petition shall contain the following information; (a) The name, address, and the telephone number of each petitioner, the applicant's name and address, the Department Permit Amendment 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.

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Department of Environmental Protection
Bureau of Air Regulation
111 South Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Telephone: 904/488-1344
Fax: 904/922-6979

Department of Environmental Protection
Central District
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803
Telephone: 407/894-7555
Fax: 407/897-2966

The complete project file includes the Draft Permit 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 Source Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 904/488-1344, for additional information.

DRAFT

October XX, 1996

CERTIFIED MAIL--RETURN RECEIPT REQUESTED

Mr. A. K. Sharma
Director of Power Supply
Kissimmee Utility Authority
1701 West Carroll Street
Kissimmee, Florida 34741

Dear Mr. Sharma:

Re: DRAFT Air Construction Permit Amendment No: 0970043-003-AC (PSD-FL-182)
Testing Requirement at Cane Island Facility

The Department has reviewed your requests received August 27, and September 13, 1996. The following Specific Conditions related to compliance testing for nitrogen oxide, sulfur dioxide, sulfuric acid mist, and particulate matter emissions are hereby modified as follows:

Specific Condition 8:

From:

Compliance with the NO_x, SO₂, CO, PM, PM₁₀, and VOC standards shall be determined (while operating at 95-100% of the permitted maximum heat rate input corresponding to the particular ambient conditions) within 180 days of initial operation of the maximum capability of the unit and annually thereafter, by the following reference methods as described in 40 CFR 60, Appendix A (July, 1991 version) and adopted by reference in F.A.C. Rule 17-2.700.

- Method 1 Sample and Velocity Traverses
- Method 2 Volumetric Flow Rate
- Method 3 Gas Analysis
- Method 5 Determination of Particulate Emissions from Stationary Sources
- or
- Method 17
- Method 9 Visual Determination of the Opacity of Emissions from Stationary Sources
- Method 8 Determination of Sulfuric Acid Mist and Sulfur Dioxide Emissions from Stationary Sources (for fuel oil firing only)
- Method 10 Determination of Carbon Monoxide Emissions from Stationary Sources

DRAFT

- Method 20 Determination of Nitrogen Oxides, Sulfur Dioxide, and Diluent Emissions from Stationary Gas Turbines
- Method 25A Determination of Total Gaseous Organic Concentrations Using a Flame Ionization Analyzer

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

To:

Compliance with the NO_x, SO₂, CO, PM, PM₁₀, and VOC standards shall be determined (while operating at 95-100% of the permitted maximum heat rate input corresponding to the particular ambient conditions) within 180 days of initial operation of the maximum capability of the unit and annually thereafter (except for NO_x, sulfuric acid mist, VOC, PM, and PM₁₀) by the following reference methods as described in 40 CFR 60, Appendix A (July, 1991 version) and adopted by reference in F.A.C. Rule 17-2.700.

- Method 1 Sample and Velocity Traverses
- Method 2 Volumetric Flow Rate
- Method 3 Gas Analysis
- Method 5 Determination of Particulate Emissions from Stationary Sources
- or
- Method 17
- Method 9 Visual Determination of the Opacity of Emissions from Stationary Sources
- Method 8 Determination of Sulfuric Acid Mist and Sulfur Dioxide Emissions from Stationary Sources (for fuel oil firing only)
- Method 10 Determination of Carbon Monoxide Emissions from Stationary Sources
- Method 20 Determination of Nitrogen Oxides, Sulfur Dioxide, and Diluent Emissions from Stationary Gas Turbines
- Method 25A Determination of Total Gaseous Organic Concentrations Using a Flame Ionization Analyzer

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

Compliance with the NO_x standard shall be determined on a rolling 24-hour average using the data recorded by the continuous emissions monitor and reported quarterly to the Central District Office at the same time as the quarterly excess emission reports in Specific Condition 23.

Specific Condition 10:

From:

Compliance with the SO₂ emission limit can also be determined by calculations based on fuel analysis using ASTM D4294 for the sulfur content of liquid fuels and ASTM D3246-81 for sulfur content of gaseous fuel.

DRAFT

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 ($^{\circ}K$)

Note: Measured NO_x emissions shall not be ISO corrected for comparison with the BACT standard.

References to ISO conditions in footnote (C) in Tables 1 and 2:

From:

Emission rates are based on 100% load and at ISO conditions.

To:

Emission rates are based on 100% load.

The Department did not change the annual test requirement for SO_2 emissions in Specific Condition 8 because compliance with the SO_2 emission limit can also be determined by fuel analysis as stated in Specific Condition 10. In addition your request to amend Specific Condition 4 needs further evaluation to determine whether this amendment would result in emissions greater than the PSD significance level for NO_x emissions.

A copy of this letter shall be attached to the reference air construction permit and shall become a part of that permit.

Sincerely

Howard L. Rhodes, Director
Division of Air Resources Management

HLR/ch
Enclosure

DRAFT

To:

Compliance with the SO₂ and sulfuric acid mist emission limits can also be determined by calculations based on fuel analysis using ASTM D4294 for the sulfur content of liquid fuels and ASTM D3246-81 for sulfur content of gaseous fuel.

Specific Condition 13:

From:

During performance tests, to determine compliance with the allowable NO_x standard, measured NO_x emissions at 15 percent oxygen will be adjusted to ISO ambient atmospheric conditions by the following correction factor:

$$NO_x = (NO_{x,obs}) \left(\frac{P_{ref}}{P_{obs}} \right)^{0.05} e^{19(H_{obs}-0.00633)} \left(\frac{288^\circ K}{T_{amb}} \right)^{1.53}$$

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 (°K)

To:

During performance tests, to determine compliance with the allowable NSPS NO_x standard, measured NO_x emissions at 15 percent oxygen will be adjusted to ISO ambient atmospheric conditions by the following correction factor:

$$NO_x = (NO_{x,obs}) \left(\frac{P_{ref}}{P_{obs}} \right)^{0.05} e^{19(H_{obs}-0.00633)} \left(\frac{288^\circ K}{T_{amb}} \right)^{1.53}$$

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

Memorandum

Florida Department of Environmental Protection

TO: Clair Fancy

THRU: Al Linero *Al Linero 9/30*

FROM: Cleve Holladay *CH*

DATE: September 30, 1996

SUBJECT: Kissimmee Utility Authority 0970043-003-AC, PSD-FL-182

Attached is a letter modifying a construction permit for the above referenced facility

The amendment makes the following changes: 1) compliance with the nitrogen oxide emission limit is to be determined using data from the nitrogen oxide continuous emissions monitor (CEM) instead of by using annual compliance testing for nitrogen oxide, 2) removes the requirement for annual testing for particulate matter, sulfuric acid mist and VOC, and 3) specifies that measured NO_x emissions shall not be ISO corrected for comparison with the BACT standard.

The CEM's compliance method is superior to an annual stack test. Natural gas and 0.05 percent sulfur fuel oil give off minimal PM emissions. The ISO provisions will now be consistent with our latest guidance.

I recommend your approval and signature.

BEST AVAILABLE COPY

Is your RETURN ADDRESS completed on the r. 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

2. Restricted Delivery
Consult postmaster for fee.

3. Article Addressed to
Mr. A. K. Sharma
Director of Power
Kissimmee Utility Auth.
1701 West Canale St.
Kissimmee, FL 34741

4a. Article Number
P 339 251 158

4b. Service Type
 Registered Insured
 Certified COD
 Express Mail Return Receipt for Merchandise

7. Date of Delivery
10-2-96

5. Signature (Addressee)
[Signature]

6. Signature (Agent)
J. B. [Signature]

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

PS Form 3811, December 1991 *U.S. GPO: 1993-352-714 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt

P 339 251 158

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

Sent to
A. K. Sharma

Street # Number
R. U. A

Post Office, State, & ZIP Code
Kissimmee, 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 9-30-96

PS Form 3800, April 1995

A.K. (BEN) SHARMA, P.E.
DIRECTOR OF POWER SUPPLY



P.O. BOX 423219 KISSIMMEE, FLORIDA 34742-3219
(407) 933-7777 FAX: (407) 847-0787

RECEIVED
SEP 13 1996
BUREAU OF
AIR REGULATION

September 10, 1996

Mr. Al Linero
Florida Dept. of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

**Subject: Kissimmee Utility Authority -
Cane Island Facility
Permit Number: AC49-205703
Modification Request**

Dear Mr. Linero:

This is a follow-up to my previous letter to you dated August 22, 1996. Based on our conversations with your staff, we wish to amend our request to further modify the above referenced permit to reduce the frequency of testing for sulfur dioxide, sulfuric acid mist, and particulate matter from annually to one time only. In addition, we request to be allowed to burn fuel oil when natural gas is available up to the limits prescribed in the permit. The other proposed modifications are intended to clarify existing requirements.

Specifically, the following wording changes are suggested:

Specific Condition 4:

Delete: "Distillate fuel oil No. 2 (0.05% S) shall not be burned if natural gas is available."

Specific Condition 8:

From: "... and annually thereafter,..."

Mr. Al Linero
FDEP
September 10, 1996
page 2

To: "... and annually thereafter (except for NO_x, SO₂, sulfuric acid mist, and particulate matter),..."

Add: Annual compliance with the NO_x standard shall be determined on a rolling 24-hour average using the data recorded by the continuous emissions monitor.

Specific Condition 10:

From: "... SO₂ emission limit..."

TO: "... SO₂ and sulfuric acid mist emission limits..."

Specific Condition 13:

From: "... allowable NO_x standard..."

TO: "... allowable NSPS NO_x standard..."

Add: Measured NO_x emissions will not be ISO corrected for comparison with the BACT standard.

Change references to ISO conditions in footnotes © in Tables 1 and 2.

Check number 84933 for \$250.00 for the modification fee was submitted with my previous letter.

Sincerely,

A.K. Sharma

A.K. (Ben) Sharma, P.E.
Director of Power Supply

AKS/ne

cc: James C. Welsh
Jeff Ling
Jerome Guidry

FINAL DETERMINATION

Kissimmee Utility Authority

Modification of Permit No. AC49-205703 (PSD-FL-182)
Cane Island Facility

An Intent to Issue an air construction permit modification for Kissimmee Utility Authority's Cane Island Facility located near Intercession City, Osceola County was distributed on February 20, 1997. The Notice of Intent was published in the Orlando Sentinel on February 28, 1997. Comments were not submitted in response to the public notice.

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



Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

May 19, 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. A. K. Sharma
Director of Power Supply
Kissimmee Utility Authority
1701 West Carroll Street
Kissimmee, Florida 34741

Re: Permit Modification AC49-205703 (PSD-FL-182)
DEP File Number: 0970043-004
Extension of NO_x Compliance Date on Simple Cycle Turbine at Cane Island Facility

Dear Mr. Sharma:

The Department has reviewed the request concerning the extension of the NO_x compliance date for Kissimmee Utility Authority's simple cycle gas turbine. This turbine is located at KUA's Cane Island facility near Intercession City in Osceola County. This request is acceptable and the permit is hereby modified as follows:

Specific Condition No. 15 b

FROM:

For the simple cycle unit (LM6000), the manufacturer will attempt to achieve a maximum NO_x emission level of 15 (gas)/42 (oil) ppmv by 1/1/98. Should this level of control not be achieved when the compliance demonstration stack tests are performed, the permittee must provide the Department with expected compliance dates which will be updated annually. After 1/1/98, if the compliance schedule has not been met, the Department may require SCR be installed since the exhaust temperature has an acceptable range for SCR installation.

TO:

The simple cycle unit (LM6000), shall achieve a maximum NO_x emission level of 15 (gas)/42 (oil) ppmv by 1/1/99.

Table 1, Note B

FROM:

The NO_x maximum emission limit will be lowered to 15 ppm by 1/1/98 using appropriate combustion technology improvements. Should this level of control not be achieved when the compliance demonstration stack tests are performed, the permittee must provide the Department with expected compliance dates which will be updated annually. After 1/1/98, if the compliance schedule has not been met, the Department may require SCR be installed since the exhaust temperature has an acceptable range for SCR installation.

TO:

The simple cycle unit (LM6000), shall achieve a maximum NO_x emission level of 15 (gas)/42 (oil) ppmv by 1/1/99.

A copy of this letter shall be filed with the referenced permit and shall become part of the permit.

Sincerely,



Howard L. Rhodes, Director
Division of Air Resources
Management

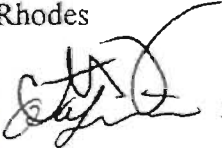
HLR/ch/hh


Enclosures

Florida Department of
Environmental Protection

Memorandum

TO: Howard L. Rhodes

THRU: Clair Fancy  5/16
Al Linero

FROM: Cleve Holladay 

DATE: May 16, 1997

SUBJECT: Kissimmee Utility Authority Application to Extend NO_x Compliance Date

I have attached a permit modification extending the applicability date by one year for the ratchet-down provision for NO_x emissions at Kissimmee Utility Authority's (KUA) Cane Island facility. This extension applies only to the LM6000 simple cycle gas turbine unit.

KUA has provided documentation that the General Electric (GE) dry low emission (DLE) program has not progressed to the point of being able to ensure a retrofit package which meets the 15 ppm NO_x rate by January 1, 1998. Based on information provided to KUA by GE, a January 1, 1999 compliance date is more realistic.

Auburndale Power Partners, Orange Cogen, and DESTEC/Tiger Bay are experiencing similar problems. DESTEC/Tiger Bay has already had its compliance date deferred by one year, and we are concurrently modifying Auburndale's permit.

I believe there is good justification for the delay. I recommend your approval and signature.

BEST AVAILABLE COPY

your RETURN ADDRESS completed on the reverse side

- 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):

- 1. Addressee's Address
- 2. Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
 Mr. A. K. Sharma
 Kissimmee Utility Aut.
 1701 W. Carroll St.
 Kissimmee, FL
 34741

4a. Article Number
 P 265 659 188

4b. Service Type
 Registered Certified
 Express Mail Insured
 Return Receipt for Merchandise COD

7. Date of Delivery
 5-22-97

5. Received By: (Print Name)

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

6. Signature: (Addressee or Agent)
 X (Handwritten Signature)

S Form 3811, December 1994

Domestic Return Receipt

Thank you for using Return Receipt Service.

P 265 659 188

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

To: Mr. A. K. Sharma	
Street & Number: Kissimmee, FL	
Post Office, State, & ZIP Code: Kissimmee, 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: 5-22-97	
E970043-004-AC	

PS Form 3800, April 1995



Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary



January 28, 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. A. K. Sharma,
Director of Power Supply
Kissimmee Utility Authority
1701 West Carroll Street
Kissimmee, Florida 34741

Re: Permit Amendment No. AC0970043-004 (PSD-FL-182)
Option to Burn Very Low Sulfur Fuel Oil at Cane Island Facility

Dear Mr. Sharma:

The Department has reviewed Kissimmee Utility Authority's (KUA) letter received on December 12, 1996, requesting an amendment to its construction permit for the sources referenced in this permit. These sources are located at KUA's Cane Island Facility near Intercession City in Osceola County. This request is acceptable and the permit is hereby amended as follows:

Specific Condition No. 4:

From:

Distillate fuel oil No. 2 (0.05% S) shall not be burned if natural gas is available.

To:

Distillate fuel oil No. 2 (0.05% S) shall not be burned **for more than 800 hours per year in each unit** if natural gas is available.

A copy of this letter shall be filed with the referenced permit and shall become part of the permit.

Sincerely,

Howard L. Rhodes, Director
Division of Air Resources
Management

HLR/ch/hh

Enclosures

"Protect, Conserve and Manage Florida's Environment and Natural Resources"

Printed on recycled paper.

FINAL DETERMINATION

Kissimmee Utility Authority

Amendment of Permit No. AC-0970043-004, PSD-FL-182
Cane Island Facility

An Intent to Issue an air construction permit amendment for Kissimmee Utility Authority's Cane Island Facility located near Intercession City, Osceola County was distributed on January 3, 1997. The Notice of Intent was published in the Orlando Sentinel on January 10, 1997. Comments were not submitted in response to the public notice.

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

Florida Department of
Environmental Protection

Memorandum

KIM

TO: Howard L. Rhodes

THRU: Clair Fancy *CHF*
Al Linero *AL*

FROM: Cleve Holladay *CH*

DATE: January 28, 1997

SUBJECT: Kissimmee Utility Authority/Application to Burn Very Low Sulfur Fuel Oil/
AC#0970043-004 (PSD-FL-182)

Attached for your approval and signature is a letter that will amend a construction permit for the above mentioned facility.

This amendment will allow Kissimmee Utility Authority (KUA) to burn very low sulfur (0.05%) fuel oil for up to 800 hours per year each in its combustion turbines referenced in this permit. Presently KUA can only burn fuel oil when natural gas is unavailable.

The option to burn limited amounts of fuel oil even when natural gas is available will give KUA greater operational flexibility during the winter heating season. I recommend your approval and signature.

CHF/ch/t

Attachment

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Is your RETURN ADDRESS completed on the reverse

- 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.

extra fee):

- 1. Addressee's Address
- 2. Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to: Mr. A.K. Sharma, Director Kissimmee Utility Authority 1701 W. Canell St. Kissimmee, FL 34741	4a. Article Number P 265 659 159 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 2-10-97
5. Received By: (Print Name) WINTERLY N. PADGETT	8. Addressee's Address (Only if requested and fee is paid)
6. Signature: (Addressee or Agent) X <i>[Signature]</i>	

PS Form 3811, December 1994

Domestic Return Receipt

Thank you for using Return Receipt Service.

P 265 659 159

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

Sent to	
A. K. Sharma	
Street & Number	
KUA	
Post Office, State, & ZIP Code	
KISSIMMEE, 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	2-6-97

PS Form 3800, April 1995

PSD-FI-182

The Orlando Sentinel

Published Daily
\$55.64

State of Florida } S.S.
COUNTY OF ORANGE

Before the undersigned authority personally appeared SHERI L. MILLER, who on oath says that he/she is the Legal Advertising Representative of The Orlando Sentinel, a daily newspaper published at KISSIMMEE in OSCEOLA County, Florida; that the attached copy of advertisement, being a PUBLIC NOTICE OF I in the matter of 0970043-004-AC

in the OSCEOLA Court, was published in said newspaper in the issue; of 01/10/97

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

The foregoing instrument was acknowledged before me this 10 day of January, 19 97, by SHERI L. MILLER, who is personally known to me and who did take an oath.

(SEAL)

Sheri L. Miller
Geniey C. Sumner
Notary Public
State of Florida
My Commission Expires 12/31/97

cc: C. Helladay, BARR.
J. Guidry, P.E. Penske
B. Beals, EPA
J. Bunyak, NPS
L. Kozlov, CO

BEST AVAILABLE COPY

RECEIVED

JAN 10 1997

BUREAU OF AIR REGULATION

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT AMENDMENT STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION DRAFT Permit Amendment No. 0970043-004-AC, PSD-FL-182 Low Sulfur Fuel Oil Usage at Cane Island Facility Osceola County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit amendment to Kissimmee Utility Authority, to allow additional use of very low (0.05%) sulfur distillate No. 2 fuel oil in the combustion turbines located at its Cane Island Facility near Intercession City, Osceola 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 amendment will result in small actual increase; nitrogen oxides (NOx), carbon monoxide (CO), sulfur dioxide (SO2), and particulate matter (PM/PM10). These increase are less than the application PSD significant emission rates, therefore, PSD requirements do not apply. The amendment will not result in an increase in any allowable emissions from the facility, and will not cause a violation of any state or federal ambient air quality standards or increments. The application's name and address are: Kissimmee Utility Authority, (KUA), 1701 West Carroll Street, Kissimmee, Florida 34741. Both units burn natural gas, an inherently clean fuel, and very low sulfur fuel oil when gas is not available. The amendment will allow the use of very low sulfur fuel oil for up to 800 hours even when natural gas is available. Fuel oil with a sulfur content this low is also clean. The option to burn fuel oil will give KUA greater flexibility in fuel use during the winter heating season. The Department will issue the FINAL Permit Amendment in accordance with the conditions of the enclosed DRAFT Permit 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 the proposed DRAFT Permit Amendment issuance action for a period of 14 (fourteen) days from the date of publication of this Notice. Any 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 Amendment, the Department shall issue a Revised DRAFT Permit Amendment and require, if applicable, another Public Notice. The Department will issue FINAL Permit Amendment with the conditions of the DRAFT Permit 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 Section 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: 904/488-9730, fax: 904/487-4938. Petitions must be filed within fourteen days of publication of this notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure to any person to file a petition (or a request for mediation, as discussed below) with-

in this 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 the 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 facts which petitioner contends warrants 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 petitioner, stating precisely the action 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 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 requirement set forth above.

A person whose substantial interests are affected by the Department's proposed permitting

decision, may elect to pursue mediation by asking all parties to the proceeding to agree to such mediation and by filing with the Department a request for mediation and the written agreement of all such parties to mediate the dispute. The request and agreement must be filed in (received by) the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, by the same deadline as set forth above for the filing of a petition.

A request for mediation must contain the following information: (a) The name, address, and telephone number of the person requesting mediation and that person's representative, if any; (b) A statement of the preliminary agency action; (c) A statement of the relief sought; and (d) Either an explanation of how the requester's substantial interests will be affected by the action or proposed action addressed in this notice of intent or a statement clearly identifying the petition for hearing that the requester has already filed, and incorporating it by reference.

The agreement to mediate must include the following: (a) The names, address, and telephone number of any persons who may attend the mediation; (b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time; (c) The agreed allocation of the costs and fees associated with the mediation; (d) The agreement of the parties on the confidentiality of discussions and documents introduced during mediation; (e) The date, time, and place of the first mediation session, or a deadline for hold the first session, if no mediator has yet been chosen; (f) The name of each party's representative who shall have authority to settle or recommend settlement; and (g) The signatures of all parties or their authorized representative.

As provided in Section 120.573 F.S., the timely agreement of all parties to mediate will toll the limitations imposed by Section 120.569 and 120.57 F.S. for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections 120.569 and 120.57 F.S. remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

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 South Magnolia Drive,
Suite 4
Tallahassee, Florida 32301
Telephone: 904/488-1344
Fax: 904/922-6979

Department of Environmental Protection
Central District
3319 Maguire Boulevard,
Suite 232
Orlando, Florida 32803
Telephone: 407-894-7555
Fax: 407-897-2966

The complete project file includes the Draft Permit 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 Source Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 904/488-1344, for additional information.
OSC1315211 JAN.10,1997



Technical Services, Inc.

December 9, 1996

RECEIVED
DEC 12 1996
BUREAU OF
AIR REGULATION

Mr. Al Linero
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Re: Kissimmee Utility Authority - Cane Island Facility
Permit Number: AC49-205703
Modification Request

Dear Mr. Linero:

This is a followup to two previous letters submitted to you by A. K. Sharma (dated August 22 and September 10) requesting modifications to the above referenced permit. Based on our conversations with your staff, we wish to amend our request to modify the above referenced permit to allow burning of fuel oil when natural gas is available for up to 800 hours per year for each unit. We are working with your staff on other aspects of our previous requests, specifically the testing requirements for this facility, and a resolution may be a few months away. Since Kissimmee Utility Authority would like the option to burn fuel oil during the upcoming winter, we are making this separate request so that this aspect of the permit may be modified before the winter heating season.

Specifically, the following wording changes are suggested:

Specific Condition 4:

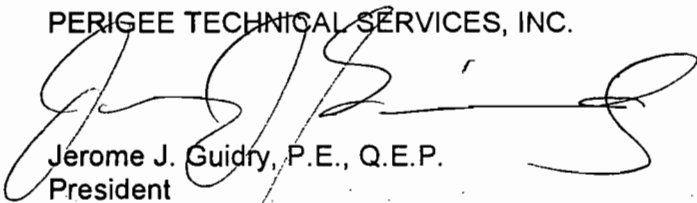
From: "Distillate fuel oil No. 2 (0.05% S) shall not be burned if natural gas is available."

To: "Distillate fuel oil No. 2 (0.05% S) shall not be burned for more than 800 hours per year in each unit if natural gas is available."

Check number 84933 for the modification fee was submitted with the initial modification request. Please call me at (407) 859-7374 if you have any questions.

Very truly yours,

PERIGEE TECHNICAL SERVICES, INC.

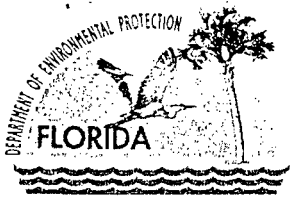

Jerome J. Guidry, P.E., Q.E.P.
President

cc: Cleve Holladay

JJG:emc

cc: A. K. Sharma
Jeff Ling

vmod3.ltr/197.0



Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

January 2, 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. A. K. Sharma
Director of Power Supply
Kissimmee Utility Authority
1701 West Carroll Street
Kissimmee, Florida 34741

Re: DRAFT Permit Amendment No. 0970043-004AC (PSD-FL-182)]
Option to Burn Very Low Sulfur Fuel Oil at Cane Island Facility

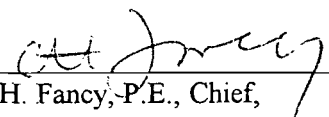
Dear Mr. Sharma:

Enclosed is one copy of the Draft Air Construction Permit Amendment for the option to burn very low sulfur fuel oil for up to 800 hours per year in the combustion turbines referenced in this permit. The turbines are located at the Cane Island facility near Intercession City, Osceola County. The Department's Intent to Issue Air Construction Permit Amendment and the "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT AMENDMENT" are also included.

The "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT 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 Cleve Holladay or Mr. Linero at 904/488-1344.

Sincerely,


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

CHF/ch

Enclosures

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT AMENDMENT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DRAFT Permit Amendment No.: 0970043-004-AC, PSD-FL-182
Low Sulfur Fuel Oil Usage at Cane Island Facility
Osceola County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit amendment to Kissimmee Utility Authority, to allow additional use of very low (0.05%) sulfur distillate No.2 fuel oil in the combustion turbines located at its Cane Island Facility near Intercession City, Osceola 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 amendment will result in small actual increases: nitrogen oxides (NO_x), carbon monoxide (CO), sulfur dioxide (SO₂), and particulate matter (PM/PM₁₀). These increases are less than the applicable PSD significant emission rates; therefore, PSD requirements do not apply. The amendment will not result in an increase in any allowable emissions from the facility, and will not cause a violation of any state or federal ambient air quality standards or increments. The applicant's name and address are: Kissimmee Utility Authority, (KUA), 1701 West Carroll Street, Kissimmee, Florida 34741.

Both units burn natural gas, an inherently clean fuel, and very low sulfur fuel oil when gas is not available. This amendment will allow the use of very low sulfur fuel oil for up to 800 hours even when natural gas is available. Fuel oil with a sulfur content this low is also clean. The option to burn fuel oil will give KUA greater flexibility in fuel use during the winter heating season.

The Department will issue the FINAL Permit Amendment, in accordance with the conditions of the DRAFT Permit 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 Amendment issuance action for a period of 14 (fourteen) days from the date of publication of this Notice. Any 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 Amendment, the Department shall issue a Revised DRAFT Permit Amendment and require, if applicable, another Public Notice.

The Department will issue FINAL Permit Amendment with the conditions of the DRAFT Permit 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: 904/488-9370, fax: 904/487-4938. 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 person whose substantial interests are affected by the Department's proposed permitting decision, may elect to pursue mediation by asking all parties to the proceeding to agree to such mediation and by filing with the Department a request for mediation and the written agreement of all such parties to mediate the dispute. The request and agreement must be filed in (received by) the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, by the same deadline as set forth above for the filing of a petition.

A request for mediation must contain the following information: (a) The name, address, and telephone number of the person requesting mediation and that person's representative, if any; (b) A statement of the preliminary agency action; (c) A statement of the relief sought; and (d) Either an explanation of how the requester's substantial interests will be affected by the action or proposed action addressed in this notice of intent or a statement clearly identifying the petition for hearing that the requester has already filed, and incorporating it by reference.

The agreement to mediate must include the following: (a) The names, addresses, and telephone numbers of any persons who may attend the mediation; (b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time; (c) The agreed allocation of the costs and fees associated with the mediation; (d) The agreement of the parties on the confidentiality of discussions and documents introduced during mediation; (e) The date, time, and place of the first mediation session, or a deadline for holding the first session, if no mediator has yet been chosen; (f) The name of each party's representative who shall have authority to settle or recommend settlement; and (g) The signatures of all parties or their authorized representatives.

As provided in Section 120.573 F.S., the timely agreement of all parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57 F.S. for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections 120.569 and 120.57 F.S. remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

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: 904/488-1344
Fax: 904/922-6979

Department of Environmental Protection
Central District
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767
Telephone: 407-894-7555
Fax: 407-897-2966

The complete project file includes the Draft Permit 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 904/488-1344, for additional information.

In the Matter of an
Application for Permit Amendment by:

Kissimmee Utility Authority
1701 West Carroll Street
Kissimmee, Florida 34741/

DRAFT Permit Amendment No.:0970043-004-AC
[PSD-FL-182]
Cane Island Facility
Osceola

INTENT TO ISSUE AIR CONSTRUCTION PERMIT AMENDMENT

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

The applicant, Kissimmee Utility Authority, applied on December 12, 1996, to the Department for an air construction permit amendment for its Cane Island Facility located Intercession City, Osceola County. The amendment will allow the burning of very low sulfur (0.05%) content fuel oil when natural gas is available for up to 800 hours per year in its 40 MW and 120 MW combustion turbines.

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 amendment is required to commence or continue operations at the described facility.

The Department intends to issue this air construction permit 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 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: 904/488-1344; Fax 904/ 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 amendment pursuant to Rule 62-103.150 (6), F.A.C.

The Department will issue the FINAL Permit Amendment, in accordance with the conditions of the enclosed DRAFT Permit 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 Amendment issuance action for a period of 14 (fourteen) days from the date of publication of "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT AMENDMENT." Any 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 Amendment, the Department shall issue a Revised DRAFT Permit Amendment and require, if applicable, another Public Notice.

The Department will issue the permit 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., or a party requests mediation as an alternative remedy under Section 120.573 F.S. 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: 904/488-9730, fax: 904/487-4938. 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.

A person whose substantial interests are affected by the Department's proposed permitting decision, may elect to pursue mediation by asking all parties to the proceeding to agree to such mediation and by filing with the Department a request for mediation and the written agreement of all such parties to mediate the dispute. The request and agreement must be filed in (received by) the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, by the same deadline as set forth above for the filing of a petition.

A request for mediation must contain the following information: (a) The name, address, and telephone number of the person requesting mediation and that person's representative, if any; (b) A statement of the preliminary agency action; (c) A statement of the relief sought; and (d) Either an explanation of how the requester's substantial interests will be affected by the action or proposed action addressed in this notice of intent or a statement clearly identifying the petition for hearing that the requester has already filed, and incorporating it by reference.

The agreement to mediate must include the following: (a) The names, addresses, and telephone numbers of any persons who may attend the mediation; (b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time; (c) The agreed allocation of the costs

and fees associated with the mediation; (d) The agreement of the parties on the confidentiality of discussions and documents introduced during mediation; (e) The date, time, and place of the first mediation session, or a deadline for holding the first session, if no mediator has yet been chosen; (f) The name of each party's representative who shall have authority to settle or recommend settlement; and (g) The signatures of all parties or their authorized representatives.

As provided in Section 120.573 F.S., the timely agreement of all parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57 F.S. for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections 120.569 and 120.57 F.S. remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

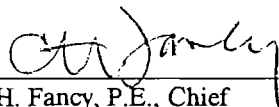
In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal 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 AMENDMENT (including the PUBLIC NOTICE, and DRAFT permit amendment) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 1/3/97 to the person(s) listed:

Mr. A. K. Sharma, Kissimmee Utility Authority*
Mr. Jerome Guidry, P.E., Perigee
Mr. Brian Beals, EPA
Mr. John Bunyak, NPS
Mr. Len Kozlov, CD

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.

Charlotte J. Hayes
(Clerk)

1/3/97
(Date)

DRAFT

January XX, 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. A. K. Sharma
Director of Power Supply
Kissimmee Utility Authority
1701 West Carroll Street
Kissimmee, Florida 34741

Re: DRAFT Permit Amendment No. 0970043-004AC (PSD-FL-182)
Option to Burn Very Low Sulfur Fuel Oil at Cane Island Facility

Dear Mr. Sharma:

The Department has reviewed Kissimmee Utility Authority's (KUA) letter received on December 12, 1996, requesting an amendment to its construction permit for the sources referenced in this permit. These sources are located at KUA's Cane Island Facility near Intercession City in Osceola County. This request is acceptable and the permit is hereby amended as follows:

Specific Condition No. 4:

From:

Distillate fuel oil No. 2 (0.05% S) shall not be burned if natural gas is available.

To:

Distillate fuel oil No. 2 (0.05% S) shall not be burned for more than 800 hours per year in each unit if natural gas is available.

A copy of this letter shall be filed with the referenced permit and shall become part of the permit.

Sincerely,

Howard L. Rhodes, Director
Division of Air Resources Management

HLR/ch/hh

Enclosures

Florida Department of
Environmental Protection

Memorandum

TO: Clair Fancy

THRU: Al Linero *Al Linero 1/2*

FROM: *CH*
Cleve Holladay

DATE: January 2, 1997

SUBJECT: Kissimmee Utility Authority /Application to Burn Very Low Sulfur Fuel Oil/
AC#0970043-004 (PSD-FL-182)

Attached is the public notice package including a draft letter modifying a construction permit for the above mentioned facility.

This amendment will allow Kissimmee Utility Authority (KUA) to burn very low sulfur (0.05%) fuel oil for up to 800 hours per year each in its combustion turbines referenced in this permit. Presently KUA can only burn fuel oil when natural gas is unavailable.

The option to burn limited amounts of fuel oil even when natural gas is available will give KUA greater operational flexibility during the winter heating season. I recommend your approval and signature.

BEST AVAILABLE COPY

Is your RETURN ADDRESS completed on the reverse side of this form so that we can return this card to you.

■ 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.

Following services (not an extra fee):
 1. Addressee's Address
 2. Restricted Delivery
 Consult postmaster for fee.

3. Article Addressed to: MR. A. K. SHARMA KISSIMEE UTILITY AUTHORITY 1701 WEST CARROLL STREET KISSIMEE, FL 34741	4a. Article Number P265 659 125
5. Received By: (Print Name) X	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 Date of Delivery: 1-6
6. Signature: (Addressee or Agent) X	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 265 659 125

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

Sent to MR. A.K. SHARMA, KUA	
Street & Number 1701 WEST CARROLL STREET	
Post Office, State, & ZIP Code KISSIMEE, FL 34741	
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 0770043007-A2 PSD-FL-182	1/3/97

PS Form 3800, April 1995



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, 1996

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. A. K. Sharma
Director of Power Supply
Kissimmee Utility Authority
1701 West Carroll Street
Kissimmee, FL 34741

Dear Mr. Sharma:

Re: Permit No. AC49-205703 / PSD-FL-182
ASTM Test Method for Fuel Oil Sulfur Content
PM₁₀ Limit in Table 2

The Department has evaluated your recent request to amend the above referenced permit for the 40 MW simple cycle and 120 MW combined cycle combustion turbines. You requested to use the most recent version of the ASTM method for fuel sulfur content from fuel oils. The Department hereby grants this request to use ASTM D2880-94 for fuel oil sulfur content in place of ASTM D2880-71 which is referenced in 40 CFR 60 Subpart GG. The EPA is currently in the process of revising/Updating this subpart and will likely update the reference to this ASTM method. The limits for particulate matter smaller than 10 micrometers (PM₁₀) contained in Table 2 of the above referenced permit are listed to three significant figures. The Department hereby reduces the number of significant figures as shown below:

Table 2:

FROM:

PM10	Gas	0.0100 lb/MMBtu
------	-----	-----------------

TO:

PM10	Gas	0.010 lb/MMBtu
------	-----	----------------

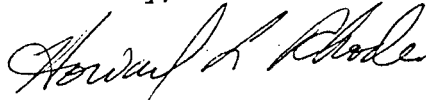
This change should avoid the need to retest the combined cycle unit for particulate matter due to the recent test results which averaged 0.0104 lb/MMBtu for particulate matter (PM) by EPA Method 5 (which includes PM₁₀). It was noted that the sample filters were loaded with particles which were larger than those expected for combustion of natural gas. Also, an oily residue was detected on some of these filters. The last run of this test yielded 0.0035 lb/MMBtu for PM. This last run may be most representative of the steady state PM emissions from this unit fired on natural gas. Best Available Control

"Protect, Conserve and Manage Florida's Environment and Natural Resources"

Technology for particulate matter on this unit was based on combustion controls and the use of clean fuels.

A copy of this amendment letter shall be attached to and shall become a part of Air Construction Permit AC49-205703 / PSD-FL-182.

Sincerely,



Howard L. Rhodes, Director
Division of Air Resources
Management

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this **PERMIT AMENDMENT** and all copies were mailed by certified mail before the close of business on 2-27-96 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED,
on this date, pursuant to
120.52(11), Florida Statutes,
with the designated Department
Clerk, receipt of which is hereby
acknowledged.

Kuni John 2-27-96
Clerk Date

Copies to be furnished to:

L. Kozlov, SED
Jewell Harper, EPA

Florida Department of
Environmental Protection

Memorandum

TO: Clair Fancy

FROM: Martin Costello

DATE: February 23, 1996

RE: Cane Island Permit Amendment

Attached for your review and approval, is a permit amendment to allow Kissimmee Utility Authority to use the most recent version of an ASTM test method instead of the method referenced in Subpart GG which is outdated. The request is attached for this change is attached.

This action also reduces the number of significant figures for the PM standard when the combustion turbine fires gas. The original standard was specified to three significant figures. The Central District requested this change to avoid the need to require a retest for PM on this unit.

BEST AVAILABLE COPY

Is your RETURN ADDRESS completed on the reverse

- Complete items 3, and 4a & b.
- 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.

3. Article Addressed to:
A.K. Sharma
Director of Power Supply
Kissimmee Utility Auth.
1701 W. Carver St.
Kissimmee, FL 34741

4a. Article Number
Z 127 633 174

4b. Service Type
 Registered Insured
 Certified COD
 Express Mail Return Receipt for Merchandise

7. Date of Delivery
3-1-96

5. Signature (Addressee)
A.K. Sharma

6. Signature (Agent)
Catherine Mickel

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


following services (for an extra fee):
 1. Addressee's Address
 2. Restricted Delivery
 Consult postmaster for fee.

PS Form 3811, December 1991 U.S. GPO: 1993-352-714 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

Z 127 633 174

Receipt for Certified Mail
 No Insurance Coverage Provided
 Do not use for international Mail
 (See Reverse)



UNITED STATES POSTAL SERVICE

Send to:
A.K. Sharma
 (Street and No.)
Kissimmee, U.A.
 (City, State and ZIP Code)
Kissimmee, FL

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	<i>2-27-96</i>

PS Form 3800, March 1993
AC49-205703
PSD-FI-182

227145

3755

RECEIVED

JAN 24 1996

A.K. (BEN) SHARMA, P.E.
DIRECTOR OF POWER SUPPLY



P.O. BOX 423219 KISSIMMEE, FLORIDA 34742-3219
(407) 933-7777 FAX: (407) 847-0787

Makefile

MAILROOM # 2

January 18, 1996

A. A. Linero, P.E.
Administrator
Bureau of Air Regulation
Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Ref: Permit AC49-205703

Dear A.A. Linero:

In reference to your letter dated January 3, 1996, enclosed herewith is a check for \$250.00 to amend permit AC94-205703.

Sincerely,

Ak Sharma

A.K. (Ben) Sharma, P.E.
Director of Power Supply

AKS/ne

Enclosure:



Lawton Chiles
Governor

Department of Environmental Protection

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

RECEIVED

JAN 9 1996

POWER SUPPLY DEPT.

Virginia B. Wetherell
Secretary

January 3, 1996

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. A. K. Sharma, P.E.
Director of Power Supply
Kissimmee Utility Authority
Post Office Box 423219
Kissimmee, Florida 34741-3219

Dear Mr. Fields:

The Bureau of Air Regulation received your request dated November 2, 1995, to amend permit AC49-205703 issued to Kissimmee Utility Authority (KUA). Before we can begin processing your request, we need a \$250 processing fee, according to Rule 62-4.050(4) (q) 4.

If you have any questions, please call Kanani K. Winans at (904)488-1344.

Sincerely,

A. A. Linero, P.E.
Administrator
Bureau of Air Regulation

AAL/kw



BLACK & VEATCH

8400 Ward Parkway, P.O. Box No. 8405, Kansas City, Missouri 64114, (913) 321-2000

RECEIVED
NOV 06 1995

BUREAU OF
AIR REGULATION

Kissimmee Utility Authority
Cane Island Power Park

B&V Project 25438.031
B&V File 32.0000
November 2, 1995

Florida Department of Environmental Protection
Twin Towers Office Bldg
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: Sulfur Testing Methods

Attention: Mr. C. H. Fancy

Gentlemen:

Kissimmee Utility Authority (KUA) is currently operating its Cane Island Power Park Units 1 and 2 under the valid authority to construct (ATC) permit no. AC49-205703. Specific Condition No. 8 of the permit requires that initial and annual stack emissions testing be conducted in accordance with listed methods for sulfur dioxide (SO₂) emissions. The listed test methods include EPA Method 20 (Specific Condition 8) or ASTM Method D4294 (Specific Condition 10). In addition, Specific Condition 19, by requiring compliance with 40 CFR 60 Subpart GG provisions, requires that fuel sulfur content be measured using ASTM Method D2880-71. Black & Veatch, on behalf of KUA, is requesting that FDEP allow the fuel sulfur content of the fuel oil to be sampled utilizing only one method, namely ASTM Method D4294, instead of the two separate methods listed in the permit. ok

Background

Kissimmee Utility Authority (KUA) notified the central and district FDEP offices that stack testing to demonstrate emissions compliance would be performed on the Unit 1 and 2 stacks at the Cane Island Power Park, beginning on November 14, 1995. KUA met with the central district office on October 12, 1995, to discuss the stack testing procedures to be used for the emissions compliance testing. During this meeting it was requested that the FDEP allow the testing of sulfur in the fuel oil to be performed with only one method. The central district office stated that this request would have to be approved by the Tallahassee FDEP office.

Florida Department of Environmental Protection
Mr. C. H. Fancy

B&V Project 25438.031
November 2, 1995

ASTM Methods

The ASTM method required by NSPS Subpart GG for fuel oil testing (D2880-71) was superceded in 1994 by ASTM Method D2880-94, which is currently the standard specification for combustion turbine fuel oil testing. This fuel specification lists, among others, D4294 as an acceptable method for measuring sulfur content in fuel oil. Method D4294, "the Standard Test Method for Sulfur in Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectroscopy," is suitable for distillate fuel oils having sulfur contents in the range of 0.05 percent, by weight.

Black & Veatch requests that you provide your approval in writing to Mr. A. K. Sharma at the address below prior to the initial test date. If you have any questions please call me at 913-339-7425.

Director of Power Supply
Kissimmee Utility Authority
1701 W. Carroll Street
Kissimmee, FL 34741

Very truly yours,

BLACK & VEATCH



A. L. Carlson

bj

cc: Mike Harley, FDEP
Chuck Collins, FDEP
A. K. Sharma, KUA

State of Florida
Department of Environmental Protection
Notice of Permit

In the matter of an
Application for Permit by:

DER File No. AC49-205703
PSD-FL-182

Mr. A. K. Sharmer
Director of Power Supply
Kissimmee Utility Authority
1701 West Carroll Street
Kissimmee, Florida 34741

Enclosed is Permit Number AC49-205703 to construct a 40 MW simple cycle combustion turbine (SCCT) and a 120 MW combined cycle combustion turbine (CCCT). The combustion turbines will have the capability to fire either natural gas or No. 2 fuel oil. Water injection or low NO_x combustors will be used to control nitrogen oxides (NO_x) emissions and low sulfur fuel (0.05% S) will be fired to control sulfur dioxide (SO₂) emissions. The CCCT will intermittently operate in a simple cycle when the HRSG or steam turbine is down for maintenance and/or repair. These two combustion gas turbines are located in Kissimmee, Osceola County, Florida.

Any party to this Order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by 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 this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION



C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF PERMIT and all copies were mailed by certified mail before the close of business on 10-24-95 to the listed persons.

Clerk Stamp

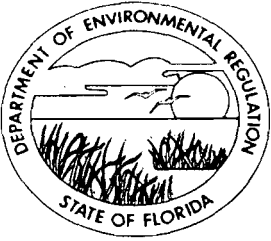
FILING AND ACKNOWLEDGMENT FILED,
on this date, pursuant to
§120.52(11), Florida Statutes,
with the designated Department
Clerk, receipt of which is hereby
acknowledged.


Clerk

10-24-95
Date

Copies furnished to:

Mr. Charles Collins, CD



Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Virginia B. Wetherell, Secretary

PERMITTEE:

Kissimmee Utility Authority
1701 West Carroll Street
Kissimmee, Florida 34741

Permit Number: AC49-205703
PSD-FL-182

Expiration Date: March 31, 1995

County: Osceola

Latitude/Longitude: 28°16'40"N
81°30'42"W

Project: A 120 MW Combined
Cycle Turbine and a 40 MW Simple
Cycle Turbine

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 17-209 through 17-297. 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:

Kissimmee Utility Authority proposes to operate a 40 MW simple cycle combustion turbine (SCCT) and a 120 MW combined cycle combustion turbine (CCCT) consisting of one combustion turbine, one steam turbine, one heat recovery steam generator and ancillary equipment. This facility is located near Intercession City, Osceola County, Florida. The UTM coordinates are Zone 17, 447.722 km East and 3127.685 km North.

The sources 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. Kissimmee Utility Authority (KUA) applications received on November 15, 1991, and June 2, 1992.
2. Department's letter dated June 30, 1992.
3. KUA's letter received on July 30, 1992.
4. KUA's letters received on August 17 and October 8, 1992.

PERMITTEE:
Kissimmee Utility Authority

Permit Number: AC 49-205703
PSD-FL-182
Expiration Date: March 31, 1995

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 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 403.722(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 any 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 an 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.

PERMITTEE:
Kissimmee Utility Authority

Permit Number: AC 49-205703
PSD-FL-182
Expiration Date: March 31, 1995

GENERAL CONDITIONS:

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

- 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 with the following information:

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

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 for 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 Sections 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 Procedure and appropriate evidentiary rules.

PERMITTEE:
Kissimmee Utility Authority

Permit Number: AC 49-205703
PSD-FL-182
Expiration Date: March 31, 1995

GENERAL CONDITIONS:

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, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

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

13. This permit also constitutes:

- (x) Determination of Best Available Control Technology (BACT)
- (x) Determination of Prevention of Significant Deterioration (PSD)
- (x) Compliance with New Source Performance Standards (NSPS)

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 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;

PERMITTEE:
Kissimmee Utility Authority

Permit Number: AC 49-205703
PSD-FL-182
Expiration Date: March 31, 1995

GENERAL CONDITIONS:

- 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 source shall not exceed the emission rates listed in Tables 1 and 2.
2. Visible emissions during startup, shutdown, or period of part load operation shall not exceed 20% opacity during any 6-minute period. At full load operation, visible emissions shall not exceed 10% opacity.

Operating Rates

3. This source is allowed to operate continuously (8760 hours per year).
4. This source is allowed to use natural gas as the primary fuel and low sulfur No. 2 distillate oil as the secondary fuel up to 1,000 hours per year. Distillate fuel oil No. 2 (0.05% S) shall not be burned if natural gas is available.
5. The permitted materials and utilization rates for the combined cycle gas turbine shall not exceed the values as follows:

40 MW Simple Cycle Turbine

- a) The maximum heat input of 371 MMBtu/hr (LHV) at ISO conditions (base load) for distillate fuel oil No. 2.
- b) The maximum heat input of 367 MMBtu/hr (LHV) at ISO conditions (base load) for natural gas.

PERMITTEE:
Kissimmee Utility Authority

Permit Number: AC 49-205703
PSD-FL-182
Expiration Date: March 31, 1995

SPECIFIC CONDITIONS:

120 MW Combined Cycle Turbine

- a) The maximum heat input of 928 MMBtu/hr (LHV) at ISO conditions (base load) for distillate fuel oil No. 2.
- b) The maximum heat input of 869 MMBtu/hr (LHV) at ISO conditions (base load) for natural gas.

6. Any change in the method of operation, equipment or operating hours shall be submitted to DER's Bureau of Air Regulation.

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

Compliance Determination

8. Compliance with the NO_x, SO₂, CO, PM, PM₁₀, and VOC standards shall be determined (while operating at 95-100% of the permitted maximum heat rate input corresponding to the particular ambient conditions) within 180 days of initial operation of the maximum capability of the unit and annually thereafter, by the following reference methods as described in 40 CFR 60, Appendix A (July, 1991 version) and adopted by reference in F.A.C. Rule 17-2.700.

- Method 1 Sample and Velocity Traverses
- Method 2 Volumetric Flow Rate
- Method 3 Gas Analysis
- Method 5 Determination of Particulate Emissions from Stationary Sources
or
Method 17
- Method 9 Visual Determination of the Opacity of Emissions from Stationary Sources
- Method 8 Determination of Sulfuric Acid Mist and Sulfur Dioxide Emissions from Stationary Sources (for fuel oil firing only)
- Method 10 Determination of Carbon Monoxide Emissions from Stationary Sources
- Method 20 Determination of Nitrogen Oxides, Sulfur Dioxide, and Diluent Emissions from Stationary Gas Turbines
- Method 25A Determination of Total Gaseous Organic Concentrations Using a Flame Ionization Analyzer

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

PERMITTEE:
Kissimmee Utility Authority

Permit Number: AC 49-205703
PSD-FL-182
Expiration Date: March 31, 1995

SPECIFIC CONDITIONS:

9. Method 5 or Method 17 must be performed on each unit to determine the initial compliance status of particulate matter emissions of the unit. Thereafter, the opacity emissions test may be used unless 10% opacity is exceeded.

10. Compliance with the SO₂ emission limit can also be determined by calculations based on fuel analysis using ASTM D4294 for the sulfur content of liquid fuels and ASTM D3246-81 for sulfur content of gaseous fuel.

11. Trace elements of Beryllium (Be) shall be tested during initial compliance test using EMPTIC 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.

12. Mercury (Hg) shall be tested during initial compliance test using EPA Method 101 (40 CFR 61, Appendix B) or fuel sampling analysis using methods acceptable to the Department.

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

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

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 (°K).

PERMITTEE:
Kissimmee Utility Authority

Permit Number: AC 49-205703
PSD-FL-182
Expiration Date: March 31, 1995

SPECIFIC CONDITIONS:

14. Test results will be the average of 3 valid runs. The Central District office will be notified at least 30 days in writing in advance of the compliance test(s). The sources shall operate between 95% and 100% of permitted capacity during the compliance test(s) as adjusted for ambient temperature. Compliance test results shall be submitted to the Central District office no later than 45 days after completion.

15. The permittee shall comply with the following by 1/1/98:

a) For the combined cycle unit (PG7111EA), if the 15 (gas)/42 (oil) ppmv emission rates cannot be met by 1/1/98, SCR will be installed. Hence, the permittee shall install a duct module suitable for future installation of SCR equipment.

b) For the simple cycle unit (LM6000), the manufacturer will attempt to achieve a maximum NO_x emission level of 15 (gas)/42 (oil) ppmv by 1/1/98. Should this level of control not be achieved when the compliance demonstration stack tests are performed, the permittee must provide the Department with expected compliance dates which will be updated annually. After 1/1/98, if the compliance schedule has not been met, the Department may require SCR be installed since the exhaust temperature has an acceptable range for SCR installation.

16. The permittee shall comply with the following requirements:

(a) Install, calibrate, maintain, and operate a continuous emission monitor in each stack to measure and record the nitrogen oxides emissions from each source. The continuous emission monitor must comply with 40 CFR 60, Appendix B, Performance Specification 2 (July 1, 1992);

(b) A continuous monitoring system shall be installed to monitor and record the fuel consumption on each unit. While water injection is being 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. The system shall meet the requirements of 40 CFR Part 60, Subpart GG;

(c) In addition, literature on equipment selected shall be submitted as it becomes available. A CT-specific graph of the relationship between NO_x emissions and water injection and also another of ambient temperature and heat inputs to the CT shall be submitted to DER's Central District office and the Bureau of Air Regulation.

17. Sulfur and nitrogen content and lower heating value of the fuel being fired in the combustion turbines shall be determined as specified in 40 CFR 60.334(b). The records of fuel oil usage shall

PERMITTEE:
Kissimmee Utility Authority

Permit Number: AC 49-205703
PSD-FL-182
Expiration Date: March 31, 1995

SPECIFIC CONDITIONS:

be kept by the company for a two-year period for regulatory agency inspection purposes. For sulfur dioxide, periods of excess emissions shall be reported if the fuel being fired in the gas turbine exceeds 0.05 percent sulfur by weight.

Rule Requirements

18. This source shall comply with all applicable provisions of Chapter 403, Florida Statutes, Chapters 17-209 through 17-297, Florida Administrative Code and 40 CFR (July, 1991 version).

19. The sources shall comply with all requirements of 40 CFR 60, Subpart GG, and F.A.C. Rule 17-296.800, Standards of Performance for Stationary Gas Turbines.

20. 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 17-210.300(1)).

21. This source shall be in compliance with all applicable provisions of F.A.C. Rules 17-210.650: Circumvention; 17-210.700: Excess Emissions; 17-296.800: Standards of Performance for New Stationary Sources (NSPS); 17-297: Stationary Sources Emission Monitoring; and, 17-4.130: Plant Operation-Problems.

22. If construction does not commence within 18 months of issuance of this permit, then the permittee shall obtain from DER a review and, if necessary, a modification of the control technology and allowable emissions for the unit(s) on which construction has not commenced (40 CFR 52.21(r)(2)).

23. Quarterly excess emission reports, in accordance with the July 1, 1992 version of 40 CFR 60.7 and 60.334 shall be submitted to DER's Central District office.

24. Fugitive dust emissions, during the construction period, shall be minimized by covering or watering dust generation areas.

25. Pursuant to F.A.C. Rule 17-210.300(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 contents and the 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 Central District office by March 1 of each calendar year.

PERMITTEE:
Kissimmee Utility Authority

Permit Number: AC 49-205703
PSD-FL-182
Expiration Date: March 31, 1995

SPECIFIC CONDITIONS:

26. 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).

27. An application for an operation permit must be submitted to the Central District office at least 90 days prior to the expiration date of this construction permit. 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. Rules 17-4.055 and 17-4.220).

Issued this 7 day
of April, 1993

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Virginia B. Wetherell
Virginia B. Wetherell
Secretary

**KISSIMMEE UTILITY AUTHORITY - AC49-205703 (PSD-FL-182)
40 MW SIMPLE CYCLE GAS TURBINE**

Table 1 - Allowable Emission Rates

Pollutant	Fuel ^A	Allowable Emission ^C Standard/Limitation	Basis
NO _x	Gas	15 ppmvd @ 15% O ₂ & ISO (22 lbs/hr; 90.86 TPY) ^B	BACT
	Gas	25 ppmvd @ 15% O ₂ & ISO (36 lbs/hr; 148.68 TPY)	BACT
	Oil*	42 ppmvd @ 15% O ₂ & ISO (63 lbs/hr; 15.75 & 31.5 TPY)	BACT
	Oil**	42 ppmvd @ 15% O ₂ & ISO (63 lbs/hr; 275.9 TPY)	
CO	Gas	30 ppmvd (40 lbs/hr; 165.2 TPY)	BACT
	Oil*	63 ppmvd (76 lbs/hr; 19 & 38 TPY)	BACT
	Oil**	63 ppmvd (76 lbs/hr; 332.9 TPY)	
VOC	Gas	1.4 lbs/hr; 5.8 TPY	BACT
	Oil*	3 lbs/hr; 0.75 & 1.5 TPY	BACT
	Oil**	3 lbs/hr; 13.1 TPY	
PM ₁₀	Gas	0.0245 lb/MMBtu	BACT
	Oil	0.0323 lb/MMBtu	BACT
SO ₂	Gas	nil	BACT
	Oil	20 lbs/hr; 5.0 & 10 TPY	BACT
	Oil**	20 lbs/hr; 87.6 TPY	
H ₂ SO ₄	Gas	nil	BACT
	Oil*	2.2 lbs/hr; 0.55 & 1.1 TPY	BACT
	Oil**	2.2 lbs/hr; 9.6 TPY	
Opacity	Gas	10% opacity ^D	BACT
	Oil	10% opacity ^D	BACT
Hg	Oil	3.1 x 10 ⁻⁶ lb/MMBtu	Appl.
As	Oil	4.2 x 10 ⁻⁶ lb/MMBtu	Appl.
Be	Oil	2.5 x 10 ⁻⁶ lb/MMBtu	BACT
Pb	Oil	2.8 x 10 ⁻⁵ lb/MMBtu	Appl.

A) Fuel: Natural Gas: Emissions are based on 8260 hours per year operating time.

Fuel: No. 2 Distillate Fuel Oil (0.05% S):

* Emissions are based on 500 and 1000 hours per year operating time.

** Emissions are based on 8760 hours per year burning oil. Continuous oil burning (8760 hrs/yr) is not allowed unless natural gas is not available.

B) The NO_x maximum limit will be lowered to 15 ppm by 1/1/98 using appropriate combustion technology improvements. Should this level of control not be achieved when the compliance demonstration stack tests are performed, the permittee must provide the Department with the expected compliance dates which will be updated annually. After 1/1/98, if the compliance schedule has not been met, the Department may require SCR be installed since the exhaust temperature has an acceptable range for SCR installation.

C) Emission rates are based on 100% load and at ISO conditions.

D) 10% opacity at full load conditions.

KISSIMMEE UTILITY AUTHORITY - AC49-205703 (PSD-FL-182)
120 MW COMBINED CYCLE GAS TURBINE

Table 2 - Allowable Emission Rates

Pollutant	Fuel ^A	Allowable Emission ^C		Basis
		Standard/Limitation		
NO _x	Gas	15 ppmvd @ 15% O ₂ & ISO	(53 lbs/hr; 219 TPY) ^B	BACT
	Gas	25 ppmvd @ 15% O ₂ & ISO	(98 lbs/hr; 405 TPY)	BACT
	Oil*	42 ppmvd @ 15% O ₂ & ISO	(170 lbs/hr; 43 & 85 TPY)	BACT
	Oil**	42 ppmvd @ 15% O ₂ & ISO	(170 lbs/hr; 745 TPY)	BACT
CO	Gas	20 ppmvd (54 lbs/hr; 223 TPY)		BACT
	Oil*	20 ppmvd (65 lbs/hr; 16 & 32.5 TPY)		BACT
	Oil**	20 ppmvd (65 lbs/hr; 285 TPY)		BACT
VOC	Gas	2.0 lbs/hr; 8.3 TPY		BACT
	Oil*	5 lbs/hr; 1.3 & 2.5 TPY		BACT
	Oil**	5 lbs/hr; 21.9 TPY		BACT
PM ₁₀	Gas	0.0100 lb/MMBtu		BACT
	Oil	0.0162 lb/MMBtu		BACT
SO ₂	Gas	nil		BACT
	Oil*	52 lbs/hr; 13 & 26 TPY		BACT
	Oil**	52 lbs/hr; 228 TPY		BACT
H ₂ SO ₄	Gas	nil		BACT
	Oil*	5.72 lbs/hr; 1.4 & 2.86 TPY		BACT
	Oil**	5.72 lbs/hr; 25.1 TPY		BACT
Opacity	Gas	10% opacity ^D		BACT
	Oil	10% opacity ^D		BACT
Hg	Oil	3.0 x 10 ⁻⁶ lb/MMBtu		Appl.
As	Oil	4.2 x 10 ⁻⁶ lb/MMBtu		Appl.
Be	Oil	2.5 x 10 ⁻⁶ lb/MMBtu		BACT
Pb	Oil	2.8 x 10 ⁻⁵ lb/MMBtu		Appl.

A) Fuel: Natural Gas: Emissions are based on 8260 hours per year operating time.

Fuel: No. 2 Distillate Fuel Oil (0.05% S):

* Emissions are based on 500 and 1000 hours per year operating time.

** Emissions are based on 8760 hours per year burning oil. Continuous oil burning (8760 hrs/yr) is not allowed unless natural gas is not available.

B) The NO_x maximum limit will be lowered to 15 ppm by 1/1/98 using appropriate combustion technology improvements or SCR.

C) Emission rates are based on 100% load and at ISO conditions.

D) 10% opacity at full load conditions.

Best Available Control Technology (BACT) Determination
 Kissimmee Utility Authority
 Osceola County
 PSD-FL-182

The applicant proposes to install two combustion turbine generators at their facility near Intercession City, Osceola County. These generator systems will consist of: 1) one nominal 80 megawatt (MW) General Electric PG7111EA combined cycle combustion turbine (CCCT), with exhaust through a heat recovery steam generator (HRSG), which will be used to power a nominal 40 MW steam turbine and 2) a 40 MW General Electric LM6000 simple cycle combustion turbine (SCCT).

The PG7111EA combustion turbine will be capable of operating on a combined and a simple cycle mode. The LM6000 will operate on a simple cycle mode. The applicant has requested to burn natural gas or fuel oil No. 2, with a 0.05 percent sulfur content, on a continuous basis (8,760 hrs/year). The applicant has indicated the maximum annual tonnage of regulated air pollutants emitted from the facility based on 100 percent capacity factor, ISO conditions, and type of fuel fired to be as follows:

Pollutant	Emissions (TPY)				PSD Significant Emission Rate (TPY)
	Oil		Gas		
	PG7111EA	LM6000	PG7111EA	LM6000	
NO _x	744.6	275.9	429.2	157.7	40
SO ₂	227.8	87.6	nil	nil	40
PM/PM ₁₀	65.7	52.6	30.7	39.4	25/15
CO	284.7	332.9	236.5	175.2	100
VOC	21.9	13.1	8.8	6.1	40
H ₂ SO ₄	25.1	9.6	nil	nil	7
Be	0.0099	0.0035	---	---	0.0004
Hg	0.012	0.005	---	---	0.1
Pb	0.044	0.141	---	---	0.6

Florida Administrative Code (F.A.C.) 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

June 2, 1992

BACT Determination Requested by the Applicant

<u>Pollutant</u>	<u>Proposed Limits</u>
NO _x	25 ppmvd @ 15% O ₂ (natural gas burning) 42 ppmvd @ 15% O ₂ (for oil firing) PG7111(EA) Control Technology: Low NO _x Burners GE LM6000 Control Technology: Water Injection

SO₂ 0.3% sulfur by weight (but limited to 0.05% sulfur
 for modeling purposes)

CO, VOC Combustion Control

PM/PM₁₀ Combustion Control

BACT Determination Procedure

In accordance with Florida Administrative Code Chapter 17-296, 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, than 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 (e.g., particulates). Controlled generally by good combustion of clean fuels.
- o Products of Incomplete Combustion (e.g., CO). Control is largely achieved by proper combustion techniques.
- o Acid Gases (e.g., NO_x). 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.

BACT POLLUTANT ANALYSIS

COMBUSTION PRODUCTS

Particulate Matter (PM/PM₁₀)

The design of this system ensures that particulate emissions will be minimized by combustion control and the use of clean fuels. The particulate emissions from the combustion turbines when burning natural gas and fuel oil will not exceed 15 lbs/hr (oil) and 7 lbs/hr (gas) for the PG7111 and 12 lbs/hr (oil) and 9 lbs/hr (gas) for the LM6000. The Department accepts the applicant's proposed control for particulate matter and heavy metals.

Lead, Mercury, Beryllium (Pb, Hg, Be)

The Department agrees with the applicant's rationale that there are no feasible methods to control lead, mercury, and beryllium; except by limiting the inherent quality of the fuel.

Although the emissions of these 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 these pollutants.

PRODUCTS OF INCOMPLETE COMBUSTION

Carbon Monoxide (CO) and Volatile Organic Compounds (VOC)

The emissions of carbon monoxide exceed the PSD significant emission rate of 100 TPY. The applicant has indicated that the carbon monoxide emissions from the proposed combined cycle turbine with a "quiet combustor" are 10 ppmv for natural gas firing and 20 ppmv for fuel oil firing. However, for a dry low NO_x combustor, the emission limit is 20 ppmvd for both oil and gas. For the simple cycle CT, the CO emissions for firing natural gas and fuel oil are 30 ppmv and 63 ppmv, respectively.

The majority of BACT emissions limitations have been based on combustion controls for carbon monoxide and volatile organic compounds minimization, however, additional control is achievable through the use of catalytic oxidation. Catalytic oxidation is a postcombustion control that has been employed in CO nonattainment areas where regulations have required CO emission levels to be less than those associated with wet injection. These installations have been required to use LAER technology and typically have CO limits in the 10-ppm range (corrected to dry conditions).

In an oxidation catalyst control system, CO emissions are reduced by allowing unburned CO to react with oxygen at the surface of a precious metal catalyst such as platinum. Combustion of CO starts at about 300°F, with efficiencies above 90 percent occurring at temperatures above 600°F. Catalytic oxidation occurs at temperatures 50 percent lower than that of thermal oxidation, which reduces the amount of thermal energy required. For CT/HRSG combinations, the oxidation catalyst can be located directly after the CT or in the HRSG. Catalyst size depends upon the exhaust flow, temperature, and desired efficiency.

Due to the oxidation of sulfur compounds and excessive formation of H₂SO₄ mist emissions, oxidation catalysts are not considered to be technically feasible for gas turbines fired with fuel oil. Catalytic oxidation has not been demonstrated on a continuous basis when using fuel oil.

Use of oxidation catalyst technology would be feasible for a natural gas-fired unit; however, the cost effectiveness of \$4,437 per ton for the LM6000 and \$10,560 per ton for the PG7110EA of CO/VOC removed will have an economic impact on this project.

The Department is in agreement with the applicant's proposal of combustor design and good operating practices as BACT for CO and VOCs for this cogeneration project.

ACID GASES

Nitrogen Oxides (NO_x)

The emissions of nitrogen oxides represent a significant proportion of the total emissions generated by this project, and need to be controlled if deemed appropriate. As such, the applicant presented an extensive analysis of the different available technologies for NO_x control.

The applicant has stated that BACT for nitrogen oxides will be met by using water injection and advanced combustor design to limit emissions to 25 ppmvd (corrected to 15% O₂) when burning natural gas and 42 ppmvd (corrected to 15% O₂) when burning fuel oil.

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% 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.

The effect of exhaust gas temperature on NO_x reduction depends on the specific catalyst formulation and reactor design. Generally, SCR units can be designed to achieve effective NO_x control over a 100-300°F operating window within the bounds of 450-800°F, although recently developed zeolite-based catalysts are claimed to be capable of operating at temperatures as high as 950°.

Most commercial SCR systems operate over a temperature range of about 600-750°F. At levels above and below this window, the specific catalyst formulation will not be effective and NO_x reduction will decrease. Operating at high temperatures can permanently damage the catalyst through sintering of surfaces.

Increased water vapor content in the exhaust gas (as would result from water or steam injection in the gas turbine combustor) can shift the operating temperature window of the SCR reactor to slightly higher levels.

As stated by the applicant, the exhaust temperatures of the proposed simple cycle CTs for this site are between 600°F to 800°F.

At temperatures of 1,000°F and above, the zeolite catalyst (reported to operate within 600°F to 950°F) will be irreparably damaged. In this case, application of an SCR system using a zeolite catalyst on a simple-cycle operation appears to be technically feasible.

However, the applicant has rejected using SCR on the simple cycle CT because of economic and environmental impacts.

Although technically feasible, the applicant has also rejected using SCR on the combined cycle because of economic, energy, and environmental impacts. The applicant has identified the following limitations:

- a) Reduced power output.
- b) Emissions of unreacted ammonia (slip).
- c) Disposal of hazardous waste generated (spend catalyst).
- d) Ammonium bisulfate and ammonium sulfate particulate emissions (ammonium salts) due to the reaction of NH_3 with SO_3 present in the exhaust gases.
- e) Cost effectiveness for the application of SCR technology to the Kissimmee Utility project was considered to be \$9,879 per ton of NO_x removed for the PG7111EA and \$13,700 per ton of NO_x removed for the LM6000 when burning natural gas.

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."

For fuel oil firing, the cost associated with controlling NO_x 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 NO_x injection ratio. For natural gas firing operation, NO_x emissions can be controlled with up to a 90 percent efficiency using a 1 to 1 or greater ammonia injection ratio. By lowering the injection ratio for oil firing, testing has indicated that NO_x can be controlled with efficiencies ranging from 60 to 80 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 NO_x emission limits ranging from 11.7 to 25 ppmvd depending on the efficiency of control established.

The applicant has indicated that the total levelized annual operating cost to install SCR for this project at 100 percent capacity factor and burning natural gas is \$2,944,000 for the PG7111EA and \$1,589,000 for the LM6000. Taking into consideration the total annual cost, a cost/benefit analysis of using SCR can now be developed.

For the PG7111EA combined cycle combustion turbine, based on the information supplied by the applicant, it is estimated that the maximum annual NO_x emissions using low NO_x burner will be 372 tons/year (natural gas) and 700 tons/year (oil firing). Assuming that SCR would reduce the NO_x emissions by 80%, about 74 tons of NO_x (natural gas) and 140 tons of NO_x (oil) would be emitted annually. When this reduction (298 TPY natural gas and 560 TPY oil) is taken into consideration with the total levelized annual operating cost of \$2,944,000 (natural gas) and \$3,424,000 (oil firing); the cost per ton of controlling NO_x is \$9,879 (natural gas) and \$6,114 (oil), respectively. These calculated costs are higher than has previously been approved as BACT.

For the simple cycle combustion turbine, based on the information supplied by the applicant, it is estimated that the maximum annual NO_x emissions using water injection will be 145 tons/year (natural gas) and 250 tons/year (oil firing). Assuming that SCR would reduce the NO_x emissions by 80%, about 29 tons of NO_x (natural gas) and 50 tons of NO_x (oil firing) would be emitted annually. When this reduction (116 TPY natural gas and 200 TPY oil) is taken into consideration with the total levelized annual operating cost of \$1,589,000 (natural gas) and \$1,840,000 (oil firing); the cost per ton of controlling NO_x is \$13,700 (natural gas) and \$9,200 (oil), respectively. These calculated costs are higher than has previously been approved as BACT.

A review of the latest DER BACT determinations show limits of 15 ppmvd (natural gas) using low-NO_x burn technology for combined cycle turbines. General Electric is currently developing programs using both steam/water injection and dry low NO_x combustor to achieve NO_x emission control level of 9 ppm when firing natural gas. Therefore, since this technology will be available by 1997, the Department has accepted the water injection (LM6000), low NO_x burner design (PG7111EA), and the 25 ppmvd (natural gas)/42 ppmvd (oil) at 15% O₂ as BACT for a limited time (up to 1/1/98).

Sulfur Dioxide(SO₂) and Sulfuric Acid Mist (H₂SO₄)

The applicant has stated that sulfur dioxide (SO₂) and sulfuric acid mist (H₂SO₄) emissions when firing fuel oil will be controlled by using fuel oil with a maximum sulfur content of 0.05 % by weight. This will result in an annual emission rate of 18 tons SO₂ per year and 2 tons H₂SO₄ mist per year (operating at 500 hours per year).

In accordance with the "top down" BACT review approach, only two alternatives exist that would result in more stringent SO₂ emissions. These include the use of a lower sulfur content fuel oil or the use of wet lime or limestone-based scrubbers, otherwise known as flue gas desulfurization (FGD).

In developing the NSPS for stationary gas turbines, EPA recognized that FGD technology was inappropriate to apply to these combustion units. EPA acknowledged in the preamble of the proposed NSPS that "Due to the high volumes of exhaust gases, the cost of flue gas desulfurization (FGD) to control SO₂ emissions from stationary gas turbines is considered unreasonable."(23). EPA reinforced this point when, later on in the preamble, they stated that "FGD... would cost about two to three times as much as the gas turbine."(23). The economic impact of applying FGD today would be no different.

Furthermore, the application of FGD would have negative environmental and energy impacts. Sludge would be generated that would have to be disposed of properly, and there would be increased utility (electricity and water) costs associated with the operation of a FGD system. Finally, there is no information in the open literature to indicate that FGD has ever been applied to stationary gas turbines burning distillate oil.

The elimination of flue gas control as a BACT option then leaves the use of low sulfur fuel oil as the next option to be investigated. Kissimmee Utility Authority, as stated above, has

proposed the use of No. 2 fuel oil with a 0.05% sulfur by weight as BACT for this project. The Department accepts their proposal as BACT for this project.

BACT Determination by DER

NO_x Control

The information that the applicant presented and Department calculations indicates that the cost per ton of controlling NO_x for these turbines [\$9,879 (gas) PG7111EA, \$6,114 (oil) PG7111EA, \$13,700 (gas) LM6000, and \$9,200 (oil) LM6000] is high compared to other BACT determinations which require SCR. Based on the information presented by the applicant, the Department believes that the use of SCR for NO_x control is not justifiable as BACT at this time.

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, and various capacity factors). Although, the cost and other concerns expressed by the applicant are valid, the Department, in this case, is willing to accept water injection and low NO_x burner design as BACT for this project for a limited time (up to 12/31/97).

It is the Department's understanding that General Electric is developing programs for the PG7111EA and the LM6000, using either steam/water injection or dry low NO_x combustor technology to achieve a NO_x emission control level of 9 ppm when firing natural gas. Therefore, the Department has determined that the following BACT will apply by 1/1/98.

- a) For the combined cycle unit (PG7111EA), if the 15 (gas)/42 (oil) ppmv emission rates cannot be met by 1/1/98, SCR will be installed. Hence, the permittee shall install a duct module suitable for future installation of SCR equipment.
- b) For the simple cycle unit (LM6000), the manufacturer will attempt to achieve a maximum NO_x emission level of 15 (gas)/42 (oil) ppmv by 1/1/98. Should this level of control not be achieved, the permittee must notify the Department of the expected compliance date by 1/1/97.
- c) For both turbines (PG7111EA and LM6000), when the manufacturer achieves an even lower NO_x emission level than 15 (gas)/42 (oil) ppmv, this level may become a condition of this permit.

SO₂ Control

BACT for sulfur dioxide is the burning of fuel oil No. 2 with 0.05% sulfur content by weight.

VOC and CO Control

Combustion control will be considered as BACT for CO and VOC when firing natural gas.

Other Emissions Control

The emission limitations for PM and PM₁₀, Be, Pb, and Hg are based on previous BACT determinations for similar facilities.

The emission limits for Kissimmee Utility Authority project are thereby established as follows:

120 MW COMBINED CYCLE COMBUSTION TURBINE

Pollutant	Emission Standards/Limitations		Method of Control
	Oil (a)	Gas (b)	
NO _x	42 ppmv	25 ppmv (c) 15 ppmv	Water Injection/ Quiet Combustor or Dry Low NO _x Combustor Water Injection/Dry Low NO _x Combustor
CO	65 lbs/hr	54 lbs/hr	Combustion
PM & PM ₁₀	15 lbs/hr	7 lbs/hr	Combustion
SO ₂	52 lbs/hr	nil	No. 2 Fuel Oil (0.05% S)
H ₂ SO ₄	5.7 lbs/hr	nil	No. 2 Fuel Oil (0.05% S)
VOC	5 lbs/hr	2 lbs/hr	Combustion
Hg	3.0 x 10 ⁻⁶ lb/MMBtu		Fuel Quality
Pb	2.8 x 10 ⁻⁵ lb/MMBtu		Fuel Quality
Be	2.5 x 10 ⁻⁶ lb/MMBtu		Fuel Quality

- (a) No. 2 fuel oil with a maximum of 0.05% sulfur by weight.
 (b) Natural gas/fuel oil 8260/500 hours per year. Natural gas/fuel oil 7760/1000 hours per year. Continuous burning of No. 2 fuel oil (8760 hrs/yr) is not allowed unless natural gas is not available.
 (c) Initial NO_x emission rates for natural gas firing shall not exceed 25 ppmvd at 15% oxygen on a dry basis. The permittee shall achieve NO_x emissions of 15 ppmvd at 15% oxygen at the earliest achievable date based on dry low NO_x combustor

injection technology or any other technology available, but no later than 1/1/98. Should this level of control not be achieved, the permittee shall install SCR.

40 MW SIMPLE CYCLE COMBUSTION TURBINE

Pollutant	Emission Standards/Limitations		Method of Control
	Oil(a)	Gas(b)	
NO _x	42 ppmv	25 ppmv(c) 15 ppmv	Water Injection Dry Low NO _x Combustor
CO	76 lbs/hr	40 lbs/hr	Combustion
PM & PM10	12 lbs/hr	9 lbs/hr	Combustion
SO ₂	20 lbs/hr	nil	No. 2 Fuel Oil (0.05% S)
H ₂ SO ₄	2.2 lbs/hr	nil	No. 2 Fuel Oil (0.05% S)
VOC	3 lbs/hr	1.4 lbs/hr	Combustion
Hg	3.0 x 10 ⁻⁶ lb/MMBtu		Fuel Quality
Pb	2.8 x 10 ⁻⁵ lb/MMBtu		Fuel Quality
Be	2.5 x 10 ⁻⁶ lb/MMBtu		Fuel Quality

- (a) No. 2 fuel oil with a maximum of 0.05% sulfur by weight.
 (b) Natural gas/fuel oil 8260/500 hours per year. Natural gas/fuel oil 7760/1000 hours per year. Continuous firing of fuel oil (8760 hrs/yr) is not allowed unless natural gas is not available.
 (c) Initial NO_x emission rates for natural gas firing shall not exceed 25 ppmvd at 15% oxygen on a dry basis. The permittee shall achieve NO_x emissions of 15 ppmvd at 15% oxygen at the earliest achievable date based on dry low NO_x combustor technology or any other technology available, but no later than 1/1/98. Should this level of control not be achieved when the compliance demonstration stack tests are performed, the permittee must provide the Department with the expected compliance dates which will be updated annually. After 1/1/98, if the compliance schedule has not been met, the Department may require SCR be installed since the exhaust temperature has an acceptable range for SCR installation.

Details of the Analysis May be Obtained by Contacting:

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

Recommended by:

C. H. Fancy

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

April 1, 1993
Date

Approved by:

Virginia B. Wetherell

Virginia B. Wetherell, Secretary
Dept. of Environmental Regulation

April 7, 1993
Date

line over top of envelope

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- 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:
 Mr. A. K. Sharnes
 Director of Power Supply
 Kissimmee Utility Auth.
 1701 W. Canell St.
 Kissimmee, FL 34741

4a. Article Number
 2 127 632 553

4b. Service Type
 Registered Insured
 Certified COD
 Express Mail Return Receipt for Merchandise

7. Date of Delivery
 10/25

5. Signature (Addressee)

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

6. Signature (Agent)

Thank you for using Return Receipt Service.

PS Form 3817, December 1991 U.S. GPO: 1993-352-714 DOMESTIC RETURN RECEIPT

2 127 632 553



Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to
 A. K. Sharnes
 Street and No.
 Kissimmee Utility A.
 P.O. - State and ZIP Code
 Kiss, FL

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	10-24-95
	AC 49-205703
	PSD-F1-182

PS Form 3800, March 1993



Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

October 23, 1995

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. A. K. Sharmer
Director of Power Supply
Kissimmee Utility Authority
1701 West Carroll Street
Kissimmee, Florida 34741

Dear Mr. Sharmer:

Re: Permit No. AC49-205703 (PSD-FL-182)

It was recently brought to our attention that the Notice of Permit for the 40 MW simple cycle combustion turbine and a 120 MW combined cycle combustion turbine contained a typographical error. The correct limit for the maximum sulfur content of the No. 2 fuel oil, as specified in the permit and Best Available Control Technology determination, is 0.05 percent.

The enclosed Notice of Permit corrects this error. Please replace the Notice that was distributed with the construction permit on April 9, 1993, with the enclosed corrected one.

Sincerely,

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

CHF/wh/h

Enclosure

cc: Mr. Charles Collins, CD



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:
Kissimmee Utility Authority
1701 West Carroll Street
Kissimmee, Florida 34741

Permit Number: AC 49-205703
PSD-FL-182
Expiration Date: Dec. 30, 1994
County: Osceola
Latitude/Longitude: 28°16'40"N
81°30'42"W
Project: A 120 MW Combined
Cycle Turbine and a 40 MW Simple
Cycle 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:

Kissimmee Utility Authority proposes to operate a 40 MW simple cycle combustion turbine (SCCT) and a 120 MW combined cycle combustion turbine (CCCT) consisting of one combustion turbine, one steam turbine, one heat recovery steam generator and ancillary equipment. This facility is located near Intercession City, Osceola County, Florida. The UTM coordinates are Zone 17, 447.722 km East and 3127.685 km North.

The sources 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. Kissimmee Utility Authority (KUA) applications received on November 15, 1991, and June 2, 1992.
2. Department's letter dated June 30, 1992.
3. KUA's letter received on July 30, 1992.
4. KUA's letters received on August 17 and October 8, 1992.

PERMITTEE:
Kissimmee Utility Authority

Permit Number: AC 49-205703
PSD-FL-182
Expiration Date: December 30, 1994

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 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 403.722(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 any 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 an 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.

PERMITTEE:
Kissimmee Utility Authority

Permit Number: AC 49-205703
PSD-FL-182
Expiration Date: December 30, 1994

GENERAL CONDITIONS:

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

- 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 with the following information:

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

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 for 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 Sections 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 Procedure and appropriate evidentiary rules.

PERMITTEE:
Kissimmee Utility Authority

Permit Number: AC 49-205703
PSD-FL-182
Expiration Date: December 30, 1994

GENERAL CONDITIONS:

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, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

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

13. This permit also constitutes:

- (x) Determination of Best Available Control Technology (BACT)
- (x) Determination of Prevention of Significant Deterioration (PSD)
- (x) Compliance with New Source Performance Standards (NSPS)

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 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;

PERMITTEE:
Kissimmee Utility Authority

Permit Number: AC 49-205703
PSD-FL-182

Expiration Date: December 30, 1994

GENERAL CONDITIONS:

- 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 source shall not exceed the emission rates listed in Tables 1 and 2.
2. Visible emissions during startup, shutdown, or period of part load operation shall not exceed 20% opacity during any 6-minute period. At full load operation, visible emissions shall not exceed 10% opacity.

Operating Rates

3. This source is allowed to operate continuously (8760 hours per year).
4. This source is allowed to use natural gas as the primary fuel and low sulfur No. 2 distillate oil as the secondary fuel up to 1,000 hours per year. Distillate fuel oil No. 2 (0.05% S) shall not be burned if natural gas is available.
5. The permitted materials and utilization rates for the combined cycle gas turbine shall not exceed the values as follows:

40 MW Simple Cycle Turbine

- a) The maximum heat input of 371 MMBtu/hr (LHV) at ISO conditions (base load) for distillate fuel oil No. 2.

PERMITTEE:
Kissimmee Utility Authority

Permit Number: AC 49-205703
PSD-FL-182
Expiration Date: December 30, 1994

SPECIFIC CONDITIONS:

- b) The maximum heat input of 367 MMBtu/hr (LHV) at ISO conditions (base load) for natural gas.

120 MW Combined Cycle Turbine

- a) The maximum heat input of 928 MMBtu/hr (LHV) at ISO conditions (base load) for distillate fuel oil No. 2.
b) The maximum heat input of 869 MMBtu/hr (LHV) at ISO conditions (base load) for natural gas.

6. Any change in the method of operation, equipment or operating hours shall be submitted to DER's Bureau of Air Regulation.

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

Compliance Determination

8. Compliance with the NO_x, SO₂, CO, PM, PM₁₀, and VOC standards shall be determined (while operating at 95-100% of the permitted maximum heat rate input) within 180 days of initial operation of the maximum capability of the unit and annually thereafter, by the following reference methods as described in 40 CFR 60, Appendix A (July, 1991 version) and adopted by reference in F.A.C. Rule 17-2.700.

- Method 1 Sample and Velocity Traverses
- Method 2 Volumetric Flow Rate
- Method 3 Gas Analysis
- Method 5 Determination of Particulate Emissions from
or
Method 17 Stationary Sources
- Method 9 Visual Determination of the Opacity of Emissions
from Stationary Sources
- Method 8 Determination of Sulfuric Acid Mist from Stationary
Sources
- Method 10 Determination of Carbon Monoxide Emission from
Stationary Sources
- Method 20 Determination of Nitrogen Oxides, Sulfur Dioxide,
and Diluent Emissions from Stationary Gas Turbines
- Method 25A Determination of Total Gaseous Organic
Concentrations Using a Flame Ionization Analyzer

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

PERMITTEE:
Kissimmee Utility Authority

Permit Number: AC 49-205703
PSD-FL-182
Expiration Date: December 30, 1994

SPECIFIC CONDITIONS:

9. Method 5 or Method 17 must be performed on each unit to determine the initial compliance status of particulate matter emissions of the unit. Thereafter, the opacity emissions test may be used unless 10% opacity is exceeded.

10. Compliance with the SO₂ emission limit can also be determined by calculations based on fuel analysis using ASTM D4294 for the sulfur content of liquid fuels and ASTM D3246-81 for sulfur content of gaseous fuel.

11. Trace elements of Beryllium (Be) shall be tested during initial compliance test 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.

12. Mercury (Hg) shall be tested during initial compliance test using EPA Method 101 (40 CFR 61, Appendix B) or fuel sampling analysis using methods acceptable to the Department.

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

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

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.

PERMITTEE:
Kissimmee Utility Authority

Permit Number: AC 49-205703
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Expiration Date: December 30, 1994

SPECIFIC CONDITIONS:

14. Test results will be the average of 3 valid runs. The Central District office will be notified at least 30 days in writing in advance of the compliance test(s). The sources shall operate between 95% and 100% of permitted capacity during the compliance test(s) as adjusted for ambient temperature. Compliance test results shall be submitted to the Central District office no later than 45 days after completion.

15. The permittee shall leave sufficient space for the combined cycle (CT) suitable for future installation of SCR equipment should the facility be unable to meet the NO_x standards, if required.

16. The permittee shall install, calibrate, maintain, and operate a continuous emission monitor in each stack to measure and record the nitrogen oxides emissions from each source. The continuous emission monitor must comply with 40 CFR 60, Appendix B, Performance Specification 2 (July 1, 1992).

17. A continuous monitoring system shall be installed to monitor and record the fuel consumption on each unit. While water injection is being 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. The system shall meet the requirements of 40 CFR Part 60, Subpart GG.

18. Literature on equipment selected shall be submitted as it becomes available. A CT-specific graph of the relationship between NO_x emissions and water injection and also another of ambient temperature and heat inputs to the CT shall be submitted to DER's Central District office and the Bureau of Air Regulation.

19. Sulfur and nitrogen content and lower heating value of the fuel being fired in the combustion turbines shall be determined as specified in 40 CFR 60.334(b). The records of fuel oil usage shall be kept by the company for a two-year period for regulatory agency inspection purposes. For sulfur dioxide, periods of excess emissions shall be reported if the fuel being fired in the gas turbine exceeds 0.05 percent sulfur by weight.

Rule Requirements

20. This source shall comply with all applicable provisions of Chapter 403, Florida Statutes, Chapters 17-2 and 17-4, Florida Administrative Code and 40 CFR (July, 1991 version).

PERMITTEE:
Kissimmee Utility Authority

Permit Number: AC 49-205703
PSD-FL-182
Expiration Date: December 30, 1994

SPECIFIC CONDITIONS:

21. The sources 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.

22. 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)).

23. This source shall be in compliance with all applicable provisions of F.A.C. Rules 17-2.240: Circumvention; 17-2.250: Excess Emissions; 17-2.660: Standards of Performance for New Stationary Sources (NSPS); 17-2.700: Stationary Point Source Emission Test Procedures; and, 17-4.130: Plant Operation-Problems.

24. If construction does not commence within 18 months of issuance of this permit, then the permittee shall obtain from DER a review and, if necessary, a modification of the control technology and allowable emissions for the unit(s) on which construction has not commenced (40 CFR 52.21(r)(2)).

25. Quarterly excess emission reports, in accordance with the July 1, 1992 version of 40 CFR 60.7 and 60.334 shall be submitted to DER's Central District office.

26. Fugitive dust emissions, during the construction period, shall be minimized by covering or watering dust generation areas.

27. 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 contents and the 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 Central District office by March 1 of each calendar year.

28. 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).

29. An application for an operation permit must be submitted to the Central District office at least 90 days prior to the expiration date of this construction permit. To properly apply for an

PERMITTEE:
Kissimmee Utility Authority

Permit Number: AC 49-205703
PSD-FL-182
Expiration Date: December 30, 1994

SPECIFIC CONDITIONS:

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. Rules 17-4.055 and 17-4.220).

Issued this _____ day
of _____, 1992

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Carol M. Browner
Secretary

KISSIMMEE UTILITY AUTHORITY - AC49-205703 (PSD-FL-182)
40 MW SIMPLE CYCLE GAS TURBINE

Table 1 - Allowable Emission Rates

Pollutant	Fuel ^A	Allowable Emission ^C		Basis
		Standard/Limitation		
NO _x	Gas	15 ppmvd @ 15% O ₂ & ISO (22 lbs/hr; 90.86 TPY) ^B		BACT
	Gas	25 ppmvd @ 15% O ₂ & ISO (36 lbs/hr; 148.68 TPY)		BACT
	Oil*	42 ppmvd @ 15% O ₂ & ISO (63 lbs/hr; 15.75 & 31.5 TPY)		BACT
	Oil**	42 ppmvd @ 15% O ₂ & ISO (63 lbs/hr; 275.9 TPY)		
CO	Gas	10 ppmvd (40 lbs/hr; 165.2 TPY)		BACT
	Oil*	20 ppmvd (76 lbs/hr; 19 & 38 TPY)		BACT
	Oil**	20 ppmvd (76 lbs/hr; 332.9 TPY)		
VOC	Gas	1.4 lbs/hr; 5.8 TPY		BACT
	Oil*	3 lbs/hr; 0.75 & 1.5 TPY		BACT
	Oil**	3 lbs/hr; 13.1 TPY		
PM ₁₀	Gas	0.0100 lb/MMBtu		BACT
	Oil	0.0100 lb/MMBtu		BACT
SO ₂	Gas	nil		BACT
	Oil	20 lbs/hr; 5.0 & 10 TPY		BACT
	Oil**	20 lbs/hr; 87.6 TPY		
H ₂ SO ₄	Gas	nil		BACT
	Oil*	2.2 lbs/hr; 0.55 & 1.1 TPY		BACT
	Oil**	2.2 lbs/hr; 9.6 TPY		
Opacity	Gas	10% opacity ^D		BACT
	Oil	10% opacity		BACT
Hg	Oil	3.1 x 10 ⁻⁶ lb/MMBtu		Appl.
As	Oil	4.2 x 10 ⁻⁶ lb/MMBtu		Appl.
Be	Oil	2.0 x 10 ⁻⁶ lb/MMBtu		BACT
Pb	Oil	2.8 x 10 ⁻⁵ lb/MMBtu		Appl.

A) Fuel: Natural Gas: Emissions are based on 8260 hours per year operating time.

Fuel: No. 2 Distillate Fuel Oil (0.05% S):

* Emissions are based on 500 and 1000 hours per year operating time.

** Emissions are based on 8760 hours per year burning oil. Continuous oil burning (8760 hrs/yr) is not allowed unless natural gas is not available.

B) The NO_x maximum limit will be lowered to 15 ppm by 12/31/97 using appropriate combustion technology improvements. Should this level of control not be achieved, the permittee must notify the Department of the expected compliance date by 12/31/96.

C) Emission rates are based on 100% load and at ISO conditions.

D) 10% opacity at full load conditions.

KISSIMMEE UTILITY AUTHORITY - AC49-205703 (PSD-FL-182)
120 MW COMBINED CYCLE GAS TURBINE

Table 2 - Allowable Emission Rates

Pollutant	Fuel ^A	Allowable Emission ^C		Basis
			Standard/Limitation	
NO _x	Gas	15 ppmvd @ 15% O ₂ & ISO	(53 lbs/hr; 219 TPY) ^B	BACT
	Gas	25 ppmvd @ 15% O ₂ & ISO	(98 lbs/hr; 405 TPY)	BACT
	Oil*	42 ppmvd @ 15% O ₂ & ISO	(170 lbs/hr; 43 & 85 TPY)	BACT
	Oil**	42 ppmvd @ 15% O ₂ & ISO	(170 lbs/hr; 745 TPY)	
CO	Gas	10 ppmvd	(54 lbs/hr; 223 TPY) ^D	BACT
	Oil*	20 ppmvd	(65 lbs/hr; 16 & 32.5 TPY)	BACT
	Oil**	20 ppmvd	(65 lbs/hr; 285 TPY)	
VOC	Gas	2.0 lbs/hr;	8.3 TPY	BACT
	Oil*	5 lbs/hr;	1.3 & 2.5 TPY	BACT
	Oil**	5 lbs/hr;	21.9 TPY	
PM ₁₀	Gas	0.0100 lb/MMBtu		BACT
	Oil	0.0100 lb/MMBtu		BACT
SO ₂	Gas	nil		BACT
	Oil*	52 lbs/hr;	13 & 26 TPY	BACT
	Oil**	52 lbs/hr;	228 TPY	
H ₂ SO ₄	Gas	nil		BACT
	Oil*	5.72 lbs/hr;	1.4 & 2.86 TPY	BACT
	Oil**	5.72 lbs/hr;	25.1 TPY	
Opacity	Gas	10% opacity ^D		BACT
	Oil	10% opacity		BACT
Hg	Oil	3.0 x 10 ⁻⁶ lb/MMBtu		Appl.
As	Oil	4.2 x 10 ⁻⁶ lb/MMBtu		Appl.
Be	Oil	2.0 x 10 ⁻⁶ lb/MMBtu		BACT
Pb	Oil	2.8 x 10 ⁻⁵ lb/MMBtu		Appl.

A) Fuel: Natural Gas: Emissions are based on 8260 hours per year operating time.

Fuel: No. 2 Distillate Fuel Oil (0.05% S):

* Emissions are based on 500 and 1000 hours per year operating time.

** Emissions are based on 8760 hours per year burning oil. Continuous oil burning (8760 hrs/yr) is not allowed unless natural gas is not available.

B) The NO_x maximum limit will be lowered to 15 ppm by 12/31/97 using appropriate combustion technology improvements or SCR.

C) Emission rates are based on 100% load and at ISO conditions.

D) 10% opacity at full load conditions.

Best Available Control Technology (BACT) Determination
 Kissimmee Utility Authority
 Osceola County
 PSD-FL-182

The applicant proposes to install two combustion turbine generators at their facility near Intercession City, Osceola County. These generator systems will consist of: 1) one nominal 80 megawatt (MW) General Electric PG7111EA combined cycle combustion turbine (CCCT), with exhaust through a heat recovery steam generator (HRSG), which will be used to power a nominal 40 MW steam turbine and 2) a 40 MW General Electric LM6000 simple cycle combustion turbine (SCCT).

The PG7111EA combustion turbine will be capable of operating on a combined and a simple cycle mode. The LM6000 will operate on a simple cycle mode. The applicant has requested to burn natural gas or fuel oil No. 2, with a 0.05 percent sulfur content, on a continuous basis (8,760 hrs/year). The applicant has indicated the maximum annual tonnage of regulated air pollutants emitted from the facility based on 100 percent capacity factor and type of fuel fired to be as follows:

Pollutant	Emissions (TPY)				PSD Significant Emission Rate (TPY)
	Oil		Gas		
	PG7111EA	LM6000	PG7111EA	LM6000	
NO _x	744.6	275.9	429.2	157.7	40
SO ₂	227.8	87.6	nil	nil	40
PM/PM ₁₀	65.7	52.6	30.7	39.4	25/15
CO	284.7	332.9	236.5	175.2	100
VOC	21.9	13.1	8.8	6.1	40
H ₂ SO ₄	25.1	9.6	nil	nil	7
Be	0.0099	0.0035	---	---	0.0004
Hg	0.012	0.005	---	---	0.1
Pb	0.044	0.141	---	---	0.6

Florida Administrative Code (F.A.C.) 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

June 2, 1992

BACT Determination Requested by the Applicant

<u>Pollutant</u>	<u>Proposed Limits</u>
NO _x	25 ppmvd @ 15% O ₂ (natural gas burning) 42 ppmvd @ 15% O ₂ (for oil firing) PG7111(EA) Control Technology: Low NO _x Burners GE LM6000 Control Technology: Water Injection

SO ₂	0.3% sulfur by weight (but limited to 0.05% sulfur for modeling purposes)
CO, VOC	Combustion Control
PM/PM ₁₀	Combustion Control

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 (e.g., particulates). Controlled generally by good combustion of clean fuels.
- o Products of Incomplete Combustion (e.g., CO). Control is largely achieved by proper combustion techniques.
- o Acid Gases (e.g., NO_x). 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.

BACT POLLUTANT ANALYSIS

COMBUSTION PRODUCTS

Particulate Matter (PM/PM₁₀)

The design of this system ensures that particulate emissions will be minimized by combustion control and the use of clean fuels. The particulate emissions from the combustion turbine when burning natural gas and fuel oil will not exceed 0.01 lb/MMBtu. The Department accepts the applicant's proposed control for particulate matter and heavy metals.

Lead, Mercury, Beryllium (Pb, Hg, Be)

The Department agrees with the applicant's rationale that there are no feasible methods to control lead, mercury, and beryllium; except by limiting the inherent quality of the fuel.

Although the emissions of these 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 these pollutants.

PRODUCTS OF INCOMPLETE COMBUSTION

Carbon Monoxide (CO) and Volatile Organic Compounds (VOC)

The emissions of carbon monoxide exceed the PSD significant emission rate of 100 TPY. The applicant has indicated that the carbon monoxide emissions from the proposed combined cycle turbine is on exhaust concentrations of 10 ppmv for natural gas firing and 20 ppmv for fuel oil firing. For the simple cycle CT, the CO emissions for firing natural gas and fuel oil are 30 ppmv and 63 ppmv, respectively.

The majority of BACT emissions limitations have been based on combustion controls for carbon monoxide and volatile organic compounds minimization, additional control is achievable through the use of catalytic oxidation. Catalytic oxidation is a postcombustion control that has been employed in CO nonattainment areas where regulations have required CO emission levels to be less than those associated with wet injection. These installations have been required to use LAER technology and typically have CO limits in the 10-ppm range (corrected to dry conditions).

In an oxidation catalyst control system, CO emissions are reduced by allowing unburned CO to react with oxygen at the surface of a precious metal catalyst such as platinum. Combustion of CO starts at about 300°F, with efficiencies above 90 percent occurring at temperatures above 600°F. Catalytic oxidation occurs at temperatures 50 percent lower than that of thermal oxidation, which reduces the amount of thermal energy required. For CT/HRSG combinations, the oxidation catalyst can be located directly after the CT or in the HRSG. Catalyst size depends upon the exhaust flow, temperature, and desired efficiency.

Due to the oxidation of sulfur compounds and excessive formation of H₂SO₄ mist emissions, oxidation catalyst are not considered to be technically feasible for gas turbines fired with fuel oil. Catalytic oxidation has not been demonstrated on a continuous basis when using fuel oil.

Use of oxidation catalyst technology would be feasible for natural gas-fired unit; however, the cost effectiveness of \$4,437 per ton for the LM6000 and \$10,560 per ton for the PG7110EA of CO/VOC removed will have an economic impact on this project.

The Department is in agreement with the applicant's proposal of combustor design and good operating practices as BACT for CO and VOCs for this cogeneration project.

ACID GASES

Nitrogen Oxides (NO_x)

The emissions of nitrogen oxides represent a significant proportion of the total emissions generated by this project, and need to be controlled if deemed appropriate. As such, the applicant presented an extensive analysis of the different available technologies for NO_x control.

The applicant has stated that BACT for nitrogen oxides will be met by using water injection and advanced combustor design to limit emissions to 25 ppmvd (corrected to 15% O₂) when burning natural gas and 42 ppmvd (corrected to 15% O₂) when burning fuel oil.

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% 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.

The effect of exhaust gas temperature on NO_x reduction depends on the specific catalyst formulation and reactor design. Generally, SCR units can be designed to achieve effective NO_x control over a 100-300°F operating window within the bounds of 450-800°F, although recently developed zeolite-based catalysts are claimed to be capable of operating at temperatures as high as 950°.

Most commercial SCR systems operate over a temperature range of about 600-750°F. At levels above and below this window, the specific catalyst formulation will not be effective and NO_x reduction will decrease. Operating at high temperatures can permanently damage the catalyst through sintering of surfaces.

Increased water vapor content in the exhaust gas (as would result from water or steam injection in the gas turbine combustor) can shift the operating temperature window of the SCR reactor to slightly higher levels.

The exhaust temperatures of the proposed simple cycle CTs for this site are expected to be in excess of 1,000°F. At temperatures of

1,000°F and above, the zeolite catalyst (reported to operate within 600°F to 950°F) will be irreparably damaged. Therefore, application of an SCR system using a zeolite catalyst on a simple-cycle operation is technically infeasible without exhaust gas cooling. Attemperation systems are neither commercially available nor have they been applied, even at a pilot stage, to SCR systems associated with simple-cycle CTs.

Consequently, the applicant has rejected using SCR on the simple cycle CT because of technical infeasibility, economic and environmental impact for the simple cycle.

Although technically feasible, the applicant has rejected using SCR on the combined cycle because of economic, energy, and environmental impacts. The applicant has identified the following limitations:

- a) Reduced power output.
- b) Emissions of unreacted ammonia (slip).
- c) Disposal of hazardous waste generated (spend catalyst).
- d) Ammonium bisulfate and ammonium sulfate particulate emissions (ammonium salts) due to the reaction of NH_3 with SO_3 present in the exhaust gases.
- e) Cost effectiveness for the application of SCR technology to the Kissimmee Utility project was considered to be \$9,879 per ton of NO_x removed for the PG7111EA and \$13,700 per ton of NO_x removed for the LM6000 when burning natural gas.

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."

For fuel oil firing, the cost associated with controlling NO_x 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 NO_x injection ratio. For natural gas firing operation, NO_x emissions can be controlled with up to a 90 percent efficiency using a 1 to 1 or greater ammonia injection ratio. By lowering the injection ratio for oil firing, testing has indicated that NO_x can be controlled with efficiencies ranging from 60 to 80 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 NO_x emission limits ranging from 11.7 to 25 ppmvd depending on the efficiency of control established.

The applicant has indicated that the total levelized annual operating cost to install SCR for this project at 100 percent capacity factor and burning natural gas is \$2,944,000 for the PG7111EA and \$1,589,000 for the LM6000. Taking into consideration the total annual cost, a cost/benefit analysis of using SCR can now be developed.

For the PG7111EA combined cycle combustion turbine, based on the information supplied by the applicant, it is estimated that the maximum annual NO_x emissions using low NO_x burner will be 372 tons/year (natural gas) and 700 tons/year (oil firing). Assuming that SCR would reduce the NO_x emissions by 80%, about 74 tons of NO_x (natural gas) and 140 tons of NO_x (oil) would be emitted annually. When this reduction (298 TPY natural gas and 560 TPY oil) is taken into consideration with the total levelized annual operating cost of \$2,944,000 (natural gas) and \$3,424,000 (oil firing); the cost per ton of controlling NO_x is \$9,879 (natural gas) and \$6,114 (oil), respectively. These calculated costs are higher than has previously been approved as BACT.

For the simple cycle combustion turbine, based on the information supplied by the applicant, it is estimated that the maximum annual NO_x emissions using water injection will be 145 tons/year (natural gas) and 250 tons/year (oil firing). Assuming that SCR would reduce the NO_x emissions by 80%, about 29 tons of NO_x (natural gas) and 50 tons of NO_x (oil firing) would be emitted annually. When this reduction (116 TPY natural gas and 200 TPY oil) is taken into consideration with the total levelized annual operating cost of \$1,589,000 (natural gas) and \$1,840,000 (oil firing); the cost per

ton of controlling NO_x is \$13,700 (natural gas) and \$9,200 (oil), respectively. These calculated costs are higher than has previously been approved as BACT.

A review of the latest DER BACT determinations show limits of 15 ppmvd (natural gas) using low-NO_x burn technology for combined cycle turbines. General Electric is currently developing programs using both steam/water injection and dry low NO_x combustor to achieve NO_x emission control level of 9 ppm when firing natural gas. Therefore, since this technology will be available by 1997, the Department has accepted the water injection (LM6000), low NO_x burner design (PG7110EA), and the 25 ppmvd (natural gas)/42 ppmvd (oil) at 15% O₂ as BACT for a limited time (up to 12/31/97).

Sulfur Dioxide(SO₂) and Sulfuric Acid Mist (H₂SO₄)

The applicant has stated that sulfur dioxide (SO₂) and sulfuric acid mist (H₂SO₄) emissions when firing fuel oil will be controlled by using fuel oil with a maximum sulfur content of 0.05 % by weight. This will result in an annual emission rate of 18 tons SO₂ per year and 2 tons H₂SO₄ mist per year (operating at 500 hours per year).

In accordance with the "top down" BACT review approach, only two alternatives exist that would result in more stringent SO₂ emissions. These include the use of a lower sulfur content fuel oil or the use of wet lime or limestone-based scrubbers, otherwise known as flue gas desulfurization (FGD).

In developing the NSPS for stationary gas turbines, EPA recognized that FGD technology was inappropriate to apply to these combustion units. EPA acknowledged in the preamble of the proposed NSPS that "Due to the high volumes of exhaust gases, the cost of flue gas desulfurization (FGD) to control SO₂ emissions from stationary gas turbines is considered unreasonable."(23). EPA reinforced this point when, later on in the preamble, they stated that "FGD... would cost about two to three times as much as the gas turbine."(23). The economic impact of applying FGD today would be no different.

Furthermore, the application of FGD would have negative environmental and energy impacts. Sludge would be generated that would have to be disposed of properly, and there would be increased utility (electricity and water) costs associated with the operation of a FGD system. Finally, there is no information in the open literature to indicate that FGD has ever been applied to stationary gas turbines burning distillate oil.

The elimination of flue gas control as a BACT option then leaves the use of low sulfur fuel oil as the next option to be investigated. Kissimmee Utility Authority, as stated above, has

proposed the use of No. 2 fuel oil with a 0.05% sulfur by weight as BACT for this project. The Department accepts their proposal as BACT for this project.

BACT Determination by DER

NO_x Control

The information that the applicant presented and Department calculations indicates that the cost per ton of controlling NO_x for these turbines [\$9,879 (gas) PG7111EA, \$6,114 (oil) PG7111EA, \$13,700 (gas) LM6000, and \$9,200 (oil) LM6000] is high compared to other BACT determinations which require SCR. Based on the information presented by the applicant, the Department believes that the use of SCR for NO_x control is not justifiable as BACT at this time.

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, and various capacity factors). Although, the cost and other concerns expressed by the applicant are valid, the Department, in this case, is willing to accept water injection and low NO_x burner design as BACT for this project for a limited time (up to 12/31/97).

It is the Department's understanding that General Electric is developing programs for the PG7111EA and the LM6000, using either steam/water injection or dry low NO_x combustor technology to achieve a NO_x emission control level of 9 ppm when firing natural gas. Therefore, the Department has determined to revise and lower the allowable BACT limit for this project no later than 12/31/97 as follows:

- a) For the combined cycle unit (PG7111EA), if the 15 (gas)/42 (oil) ppmv emission rates cannot be met by December 31, 1997, SCR will be installed. Hence, the permittee shall install a duct module suitable for future installation of SCR equipment.
- b) For the simple cycle unit (LM6000), the manufacturer will attempt to achieve a maximum NO_x emission level of 15 (gas)/42 (oil) ppmv by December 31, 1997. Should this level of control not be achieved, the permittee must notify the Department of the expected compliance date by December 31, 1996.
- c) For both turbines (PG7111EA and LM6000), when the manufacturer achieves an even lower NO_x emission level than 15 (gas)/42 (oil) ppmv, this level would become a condition of this permit.

SO₂ Control

BACT for sulfur dioxide is the burning of fuel oil No. 2 with 0.05% sulfur content by weight.

VOC and CO Control

Combustion control will be considered as BACT for CO and VOC when firing natural gas.

Other Emissions Control

The emission limitations for PM and PM₁₀, Be, Pb, and Hg are based on previous BACT determinations for similar facilities.

The emission limits for Kissimmee Utility Authority project are thereby established as follows:

120 MW COMBINED CYCLE COMBUSTION TURBINE

Pollutant	Emission Standards/Limitations		Method of Control
	Oil ^(a)	Gas ^(b)	
NO _x	42 ppmv	25 ppmv ^(c) 15 ppmv	Water Injection/ Quiet Combustor or Water Injection/Dry Low NO _x Combustor
CO	65 lbs/hr	54 lbs/hr	Combustion
PM & PM ₁₀	15 lbs/hr	7 lbs/hr	Combustion
SO ₂	52 lbs/hr	nil	No. 2 Fuel Oil (0.05% S)
H ₂ SO ₄	5.7 lbs/hr	nil	No. 2 Fuel Oil (0.05% S)
VOC	5 lbs/hr	2 lbs/hr	Combustion
Hg	3.0 x 10 ⁻⁶ lb/MMBtu		Fuel Quality
Pb	2.8 x 10 ⁻⁵ lb/MMBtu		Fuel Quality
Be	2.5 x 10 ⁻⁶ lb/MMBtu		Fuel Quality

(a) No. 2 fuel oil with a maximum of 0.05% sulfur by weight.
 (b) Natural gas (8260 hours per year), Fuel oil (500 hours per year). Continuous burning of No. 2 fuel oil (8760 hrs/yr) is not allowed unless natural gas is not available.

- (c) Initial NO_x emission rates for natural gas firing shall not exceed 25 ppmvd at 15% oxygen on a dry basis. The permittee shall achieve NO_x emissions of 15 ppmvd at 15% oxygen at the earliest achievable date based on dry low NO_x combustor injection technology or any other technology available, but no later than 12/31/97. Should this level of control not be achieved, the permittee shall install SCR.

40 MW SIMPLE CYCLE COMBUSTION TURBINE

Pollutant	Emission Standards/Limitations		Method of Control
	Oil (a)	Gas (b)	
NO _x	42 ppmv	25 ppmv (c) 15 ppmv	Water Injection Dry Low NO _x Combustor
CO	76 lbs/hr	40 lbs/hr	Combustion
PM & PM10	12 lbs/hr	9 lbs/hr	Combustion
SO ₂	20 lbs/hr	nil	No. 2 Fuel Oil (0.05% S)
H ₂ SO ₄	2.2 lbs/hr	nil	No. 2 Fuel Oil (0.05% S)
VOC	3 lbs/hr	1.4 lbs/hr	Combustion
Hg	3.0 x 10 ⁻⁶ lb/MMBtu		Fuel Quality
Pb	2.8 x 10 ⁻⁵ lb/MMBtu		Fuel Quality
Be	2.5 x 10 ⁻⁶ lb/MMBtu		Fuel Quality

- (a) No. 2 fuel oil with a maximum of 0.05% sulfur by weight.
 (b) Natural gas (8360 hours per year), Fuel oil (400 hours per year). Continuous firing of fuel oil (8760 hrs/yr) is not allowed unless natural gas is not available.
 (c) Initial NO_x emission rates for natural gas firing shall not exceed 25 ppmvd at 15% oxygen on a dry basis. The permittee shall achieve NO_x emissions of 15 ppmvd at 15% oxygen at the earliest achievable date based on dry low NO_x combustor technology or any other technology available, but no later than 12/31/97. Should this level of control not be achieved, the permittee must notify the Department of the expected compliance date by 12/31/96.

BACT-Kissimmee Utility Authority
PSD-FL-182
Page 12

Details of the Analysis May be Obtained by Contacting:

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

Recommended by:

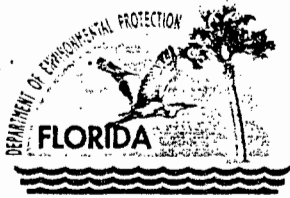
Approved by:

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

Carol M. Browner, Secretary
Dept. of Environmental Regulation

Date 1992

Date 1992



Department of Environmental Protection

file

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

October 11, 1995

Mr. A.K. Sharma, P.E.
Director of Power Supply
Kissimmee Utility Authority
Post Office Box 423219
Kissimmee, Florida 34742-3219

Dear Mr. Sharma:

This letter is in response to your request for an extension of air construction permit no. AC 49-205703.

Enclosed is a copy of recently enacted rule language which extends your air construction permit (Rule 62-213.420(1)(a)4., F.A.C.). Therefore, no action is required by the Department and your \$50 fee will be refunded.

Please note the new application dates for Title V permits have been changed. The acid rain part of the application is due not later than January 1, 1996. The remaining part of your Title V application is due on June 15, 1996.

Please contact John Brown at the letterhead address or by calling him at (904)488-1344 if you have any questions.

Sincerely,

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

CHF/jb/k

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6.01

DATE

NO. 07320

ISSUANCE UTILITY AUTHORITY VOID AFTER 90 DAYS

FLORIDA PUBLIC SERVICE

UTILITY AUTHORITY

9/20/95

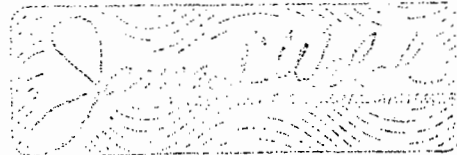
0104672

AMOUNT

\$50.00

PAY TO:

Bureau of Air Regulation
Fla Dept of Environmental Protection
2600 Blair Stone Rd
Tallahassee FL 32399-2400



A.K. (BEN) SHARMA, P.E.
DIRECTOR OF POWER SUPPLY



P.O. BOX 423219 KISSIMMEE, FLORIDA 34742-3219
(407) 933-7777 FAX: (407) 847-0787

0104672

3755

0970001-001 TX

September 19, 1995

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

1995 SEP 25 AM 11:02
KUA

Attention: C.H. Fancy

RE: Air Construction Permit
Permit No. AC49-205703

Gentlemen:

Pursuant to a telephone conversation between Tom Cascio of the Florida Department of Environmental Protection (FDEP) and Tim Hillman of Black & Veatch on September 6, 1995, Kissimmee Utility Authority (KUA) is requesting an amendment of the air construction permit (Permit No. AC49-205703) for the Cane Island Power Park that would extend the construction permit expiration date to October 1, 1996, or to a date 90 days after the expected submittal due date for Title V operating permits for acid rain sources, whichever date is later. This letter provides the background and justification for the requested expiration date amendment and includes the \$50 expiration date amendment fee.

Background and Justification

KUA received an air construction permit for the Cane Island Power Park on April 4, 1993. The permit was scheduled to expire on March 31, 1995. However, on August 15, 1994, KUA requested that the air construction permit expiration date be extended to July 9, 1995, and that the facility be allowed to operate on its construction permit. This amendment was requested in order to allow sufficient time to complete stack testing on Unit 2 prior to submitting an application for an operating permit on December 31, 1994 (which would have been, without the requested extension, 90 days prior to the expiration of the air construction permit), and to allow for a single operating permit application to be submitted. Specific condition number 27 of the construction permit requires that the application for an operating permit be submitted 90 days prior to the expiration of the air construction

C.H. Fancy - FDEP
September 19, 1995
Page 2

permit. The FDEP granted the expiration date extension on September 16, 1994.

On February 13, 1995, KUA received notification from the FDEP that the Title V operating permit application deadlines were being deferred because of the U.S. Environmental Protection Agency's (EPA) delay in approving Florida's request for delegation of the Title V program. Specifically, the deadline for submitting a Title V operating permit for sources with a Prevention of Significant Deterioration (PSD) preconstruction review construction permit issued prior to January 2, 1995, was deferred to August 1, 1995. Accordingly, KUA requested that the Cane Island air construction permit expiration date be extended to November 5, 1995 in order that the application for the operating permit may be filed 90 days prior to the expiration of the construction permit and concurrent with the Title V operating permit application deadline. On May 8, 1995, the FDEP granted an extension of the construction permit to January 30, 1996.

In July of 1995, KUA received notification from the FDEP that the Title V operating permit application deadlines had once again been postponed. Specifically, the deadline for submitting a Title V operating permit for an acid rain source was deferred to January 1, 1996. Accordingly, the Title V operating permit for Cane Island would need to be submitted no later than October 30, 1995, in order to file the permit 90 days prior to the expiration date of the construction permit.

It is with respect to the October 30, 1995 submittal deadline for the Cane Island facility the KUA makes the following request. Based on the aforementioned telephone call with Mr. Cascio, KUA understands that the Title V operating permit program may be subject to some additional revisions as the result of the EPA's July 10th, White Paper for Streamlined Development of Part 70 Permit Applications. Specifically, KUA understands that these changes will likely include revisions to the operating permit application forms and postponement of the submittal deadline until July 1996, with both changes not likely to be finalized prior to Cane Island's submittal deadline of October 30, 1995. As such, Mr. Cascio suggested, and KUA requests, that Cane Island's construction permit expiration date be extended to October 1, 1996, or to a date 90 days after the expected Title V operating permit submittal deadline for acid rain sources, whichever date is later.

C.H. Fancy - FDEP
September 19, 1995
Page 3

If you have any questions concerning this request, or require additional information, please contact me at 407-933-7777 (Ext. 1232) or Amy Carlson of Black & Veatch at 913-339-7425.

Sincerely,

Ak Sharma

A.K. (Ben) Sharma, P.E.
Director of Power Supply

AKS/ne

cc: J. Welsh
J. Ling
A. Carlson - B&V Kansas City

BEST AVAILABLE COPY

P 230 524 402



**Receipt for
Certified Mail**

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to: <i>Diane Lebrve</i>	
Street and No.: <i>20112 4th St</i>	
P.O., State and ZIP Code: <i>Warren Ct. Ill</i>	
Postage	\$ <i>—</i>
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date: <i>AL 40-2057E POD FI-1E2 E-EC-93</i>	

PS Form 3800, June 1991



Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

May 8, 1995

CERTIFIED MAIL- RETURN RECEIPT REQUESTED

Mr. A. K. Sharma, P.E.
Director of Power Supply
Kissimmee Utility Authority
Post Office Box 423219
Kissimmee, Florida 34742-3219

Dear Mr. Sharma:

RE: Kissimmee Utility Authority
AC 49-205703

The Department is is receipt of your letter dated April 6, 1995, requesting the expiration date of the above referenced permit to be extended. The Bureau has evaluated your request and agrees to extend the expiration date of the permit as follows:

FROM:

July 9, 1995

TO:

January 30, 1996

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 (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 at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the applicant of the amendment request/application and the parties listed below must be filed within 14 days of receipt of this amendment. Petitions filed by other persons must be filed within 14 days of the amendment issuance or within 14 days of their receipt of this amendment, whichever occurs first. Petitioner

Mr. A. K. Sharma
May 8, 1995
Page Two

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, F.S.

The Petition shall contain the following information:

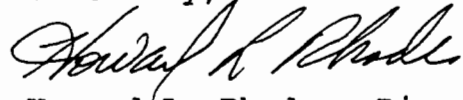
- (a) The name, address and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
- (b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- (c) 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 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 the 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 amendment. Persons whose substantial interests will be affected by any decision of the Department with regard to the amendment request/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 amendment 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.

Mr. A. K. Sharma
May 8, 1995
Page Three

This letter shall be attached to permit AC 49-205703 and shall become a part of the permit.

Sincerely,



Howard L. Rhodes, Director
Division of Air Resources
Management

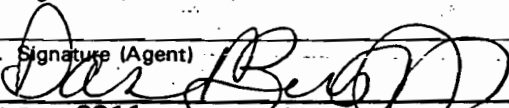
HLR/th/t

Enclosure:

Mr. A. K. Sharma's letter dated April 6, 1995

cc: C. Collins, Central District

Is your RETURN ADDRESS completed on the reverse side?

SENDER: • Complete items 1 and/or 2 for additional services. • Complete items 3, and 4a & b. • 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): 1. <input type="checkbox"/> Addressee's Address 2. <input type="checkbox"/> Restricted Delivery Consult postmaster for fee.	
3. Article Addressed to: A. K. Sharma, P.E. Director of Power Supply Kissimmee Utility Auth PO BOX 423219 Kissimmee, FL 34742-3219		4a. Article Number Z 311 902 932	
5. Signature (Addressee)		4b. Service Type <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise	
6. Signature (Agent) 		7. Date of Delivery	
PS Form 3811, December 1991 U.S. GPO: 1993-352-714		8. Addressee's Address (Only if requested and fee is paid)	
DOMESTIC RETURN RECEIPT			

Thank you for using Return Receipt Service.

B

Z 311 902 932



Receipt for Certified Mail

No Insurance Coverage Provided
 Do not use for International Mail
 (See Reverse)

PS Form 3800, March 1993

Sent to	AK Sharma
Street and No.	Kissimmee Utility
City, State and ZIP Code	Kissimmee, FL
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	5-9-95
	AL 49-205703

Memorandum

Florida Department of
Environmental Protection

TO: Howard L. Rhodes
FROM: Clair Fancy *Off for CHF*
DATE: May 5, 1995
SUBJ: Extension of Construction Permit AC 49-205703
Kissimmee Utility Authority

Attached for your approval and signature is a letter that will extend the expiration date of the above mentioned permit. This extension will allow the permittee additional time before applying for a Title V operating permit by the August 1, 1995 deadline.

I recommend your approval and signature.

CHF/th/t

Attachments

A.K. (BEN) SHARMA, P.E.
DIRECTOR OF POWER SUPPLY



P.O. BOX 423219 KISSIMMEE, FLORIDA 34742-3219
(407) 833-7777 FAX: (407) 847-0797

0102439

April 6, 1995

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

Re: Air Construction Permit
Permit No. AC49-205703

Dear Mr. Fancy:

Pursuant to a telephone conversation between Teresa Heron of the Florida Department of Environmental Protection (FDEP) and Amy Carlson of Black & Veatch, on March 8, 1995, Kissimmee Utility Authority (KUA) is requesting an amendment of the air construction permit (Permit No. AC49-205703) for the Cane Island Power Park that would extend the construction permit expiration date to November 5, 1995. This letter provides the background and justification for the requested expiration date amendment and includes the \$50 expiration date amendment fee.

Background and Justification

KUA received an air construction permit for the Cane Island Power Park on April 4, 1993. The permit was scheduled to expire on March 31, 1995. However, on August 15, 1994, KUA requested that the air construction permit expiration date be extended to July 9, 1995. This amendment was requested in order to allow sufficient time to complete stack testing on Unit 2 prior to submitting an application for an operating permit on December 31, 1994 (which would have been, without the requested extension, 90 days prior to the expiration of the air construction permit), and to allow for a single operating permit application to be submitted. Specific condition number 27 of the construction permit requires that the application for an operating permit be submitted 90 days prior to the expiration of the air construction permit. The FDEP granted the expiration date extension on September 16, 1994.

On February 13, 1995, KUA received notification from the FDEP that the Title V operating permit application deadlines are being deferred because of the U. S.

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APR 10 10 PM '95

Mr. C. H. Fancy
April 6, 1995
Page 2

Environmental Protection Agency's delay in approving Florida's request for delegation of the Title V program. Specifically, KUA understands that the deadline for submitting a Title V operating permit for sources with a Prevention of Significant Deterioration (PSD) preconstruction review construction permit issued prior to January 2, 1995, is being deferred to a proposed date of August 1, 1995. Accordingly, KUA requests that the Cane Island air construction permit expiration date be extended to November 5, 1995, in order that the application for the operating permit may be filed 90 days prior to the expiration of the construction permit in accordance with specific condition number 27 for the construction permit (concurrently with the Title V operating permit application deadline).

If you have any questions concerning this request, or require additional information, please contact me at 407-933-7777 (Ext. 1232).

Sincerely,



A. K. (Ben) Sharma, P.E.
Director of Power Supply

AKS/css

cc: A. L. Carlson
H. L. Jacobs
J. Ling

BEST AVAILABLE COPY
KISSIMMEE UTILITY AUTHORITY

7959

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INVOICE NUMBER/DESCRIPTION	REFERENCE*	DATE	ACCOUNT NUMBER/PROJECT	AMOUNT
PERMIT	004564 4/05/1995	04198109510640	G34002	50.00
				*****50.00



KISSIMMEE UTILITY AUTHORITY VOID AFTER 90 DAYS
 KISSIMMEE, FLORIDA
 GENERAL OPERATING FUND

63-538
631

DATE
4/06/1995

NO. 069678

0102439

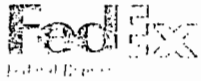
AMOUNT
*****50.00

PAY TO:
FLORIDA DEPT ENVIRONMENTAL PROTECTION BUREAU OF AIR 2600 BLAIRSTONE RD TALLAHASSEE FL 323992400

James Welch
 PRESIDENT & GENERAL MANAGER

Bank, N.A.
 Town Office
 S. Orange Ave.
 Ind. FL 32801





USE THIS SERVICE FOR YOUR AIRBILT MAIL. FOR MORE INFORMATION, CALL 800-223-8383.

AIRBILT

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4240148253



1591-9773-5

4/7/95

A. K. (Ben) Sharma

407-933-7777

Mr. C. H. Fancy, Chief 904 487-3299

KISSIMMEE UTILITY AUTHORITY

Bureau of Air Regulation
Fla Dept of Environmental Protection

701 WEST CARRULL STREET

Twin Towers Office Building
2600 Blair Stone Road

KISSIMMEE

FL

3 4 7 4 1

Tallahassee

FL

32399-2400

041-981-951-06-40 G34002

<input type="checkbox"/> OPEN	<input type="checkbox"/> DELIVERED	<input type="checkbox"/> RETURN TO SENDER
<input type="checkbox"/> DELIVERED	<input checked="" type="checkbox"/> DELIVERED	<input checked="" type="checkbox"/> RETURN TO SENDER
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<input type="checkbox"/> DELIVERED	<input type="checkbox"/> DELIVERED	<input type="checkbox"/> RETURN TO SENDER



REVISION DATE 4/94

160



Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

9/21/94
September 16, 1994

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. A. K. (Ben) Sharma, P.E.
Director of Utilities
P. O. Box 423219
Kissimmee, Florida 34742-3219

Dear Mr. Sharma:

RE: Kissimmee Utility Authority
Request for Extension of Construction
Permit No. AC 49-205703, PSD-FL-182

The Department is in receipt of your letter dated August 15, 1994, requesting a revision of Specific Conditions Nos. 7, 27 and 28, and an extension of the expiration date of the above mentioned permit. These requests are acceptable. The expiration date for this permit will be changed as follows:

FROM: March 31, 1995

TO: July 9, 1995

SPECIFIC CONDITION NO. 7

FROM: 7. Any other operating parameters established during compliance testing and/or inspection that will ensure the proper operation of this facility may be included in the operating permit.

TO: 7. Any other operating parameters established during compliance testing and/or inspection that will ensure the proper operation of this facility may be included in the operating permit **or in this amended construction permit upon sufficient request and documentation to the Department by the owner/operator.**

Mr. A. K. Sharma
AC49-205703, PSD-FL-182
September 16, 1994
Page Two

SPECIFIC CONDITION NO. 27.

FROM: 27. An application for an operation permit must be submitted to the Central District office at least 90 days prior to the expiration date of this construction permit. 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. Rules 62-4.05 and 62-4.220).

TO: 27. An application for an operation permit must be submitted to the Department's Central District office at least 90 days prior to the expiration date of this construction permit in accordance with Rule 62-4.055, F.A.C. 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 (Rules 62-4.055 and 62-4.220, F.A.C.).

NEW SPECIFIC CONDITION NO. 28

28. The facility shall be allowed to commence operation in accordance with all the terms and provisions included herein, after conducting stack compliance testing as specified in Specific Condition No. 8. This extended and amended permit will allow continued operation after demonstration of compliance and is valid through the expiration date listed herein.

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 (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 at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the applicant of the amendment request/application and the parties listed below must be filed within 14 days of receipt of this amendment. Petitions filed by other persons must be filed within 14 days of the amendment issuance or within 14 days of their receipt of this amendment, whichever occurs first. 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

Mr. A. K. Sharma
AC49-205703, PSD-FL-182
September 16, 1994
Page Three

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, F.S.

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 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;
- (g) A statement of the relief sought by petitioner, stating precisely the action the 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 amendment. Persons whose substantial interests will be affected by any decision of the Department with regard to the request/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 amendment 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.

Mr. A. K. Sharma
AC49-205703, PSD-FL-182
September 16, 1994
Page Four

A copy of this letter shall be attached to the above mentioned permit and shall become a part of this permit.

Sincerely,



Howard L. Rhodes
Director
Division of Air Resources
Management

HLR/TH/bjb

Attachment to Be Incorporated:

Mr. A. K. (Ben) Sharma's letter of August 15, 1994.

cc: Charles Collins, CD

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this AMENDMENT and all copies were mailed by certified mail before the close of business on 9/21/94 to the listed persons.

Clerk Stamp

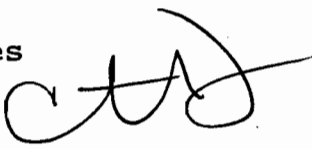
FILING AND ACKNOWLEDGMENT FILED,
on this date, pursuant to
120.52(11), Florida Statutes,
with the designated Department
Clerk, receipt of which is
hereby acknowledged.

Paulina J. Pontwell 9/21/94
Clerk Date

Florida Department of
Environmental Protection

Memorandum

CLAIR

TO: Howard Rhodes
FROM: Clair Fancy 
DATE: September 16, 1994
SUBJECT: Kissimmee Utility Authority
Request for Extension of Construction
Permit No. AC 49-205703, PSD-FL-182A

Kissimmee Utility Authority has requested that the referenced permit for its facility be revised/amended to change specific conditions Nos. 7, 27 and 28, and to extend the expiration date of the permit. The amendment will not allow an increase in permitted annual emissions of any air pollutant.

The Bureau recommends your approval.

CF/TH/bjb

Attachment

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- 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):

- 1. Addressee's Address
- 2. Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
 Mr. A. K. Sharma, P.E.
 Director of Utilities
 P. O. Box 423219
 Kissimmee, Florida 34742-3219

4a. Article Number

P 872 562 694

4b. Service Type

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

7. Date of Delivery

9-23-94

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

5. Signature (Addressee)

6. Signature (Agent)
[Handwritten Signature]

PS Form 3811, December 1991

★U.S. GPO: 1992-323-402

DOMESTIC RETURN RECEIPT

Thank you for using Return Receipt Service.

P 872 562 694



Receipt for Certified Mail

No Insurance Coverage Provided
 Do not use for International Mail
 (See Reverse)

Sent to Mr. A. K. Sharma, P.E.	
Street and No. P. O. Box 423219	
P.O., State and ZIP Code Kissimmee, FL 34742-3219	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date Mailed: 92194 AC 49-205703, PSD-FL-182	

PS Form 3800, JUNE 1991

A.K. (BEN) SHARMA, P.E.
DIRECTOR OF POWER SUPPLY



P.O. BOX 423219 KISSIMMEE, FLORIDA 34742-3219
(407) 933-7777 • FAX: (407) 847-0787

0005539

August 15, 1994

Bureau of Air Regulations
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Attention: Mr. John Brown

RE Permit to Operate
Permit No. AC49-205703

Gentlemen:

Pursuant to the telephone conversation you had with Amy Carlson of Black & Veatch on July 8, 1994, Kissimmee Utility Authority (KUA) is requesting an amendment of the construction permit (Permit No. AC49-205703) for our Cane Island Facility. The proposed amendment would extend the Authority to Construction/Prevention of Significant Deterioration permit expiration date and allow KUA to operate its facility under its existing construction permit. This letter provides revised Specific Condition language for amendment of the permit and includes the required \$250 amendment fee.

This letter also serves to respond to the Florida Department of Environmental Protection's (FDEP's) June 30, 1994 letter to KUA requesting the confirmation of actual emissions and the payment of emission fees.

If you have any questions concerning the information or requests contained within this letter, please call Amy Carlson at Black & Veatch (913) 339-7425.

Background

KUA received the state of Florida air construction permit for their Cane Island Units 1 and 2 on April 4, 1993. This permit expires on March 31, 1995, unless extension is requested (according to Specific Condition 26 of the permit) at least 60 days prior to the expiration date, and the extension is granted by the FDEP. Specific Condition 27 of the permit requires that an operating permit application be submitted

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BAR ABES 809

to the FDEP at least 90 days prior to the expiration date of the construction permit. Without an extension, the deadline to submit an operation permit application would be on December 31, 1994 for Units 1 and 2.

Unit 1 is presently being constructed and is scheduled to begin initial operation this month. After compliance testing, it is expected that this Unit will commence commercial operation in September, 1994. Unit 2 is also under construction. Initial operation for testing purposes is scheduled to begin in December 1994 or early 1995.

Thus, without an extension of the construction permit, an operating permit application would need to be submitted prior to the stack testing of Unit 2. In addition, the current Florida regulations implementing the Title V operating program would require submittal of the Title V operating permit application by April 2, 1995.

Therefore, to ensure that the facility can commence operation under a valid permit and to avoid the duplicity of effort in submitting two operating permit applications within four months of each other, KUA is requesting that the construction permit be extended.

Construction Permit Extension

In your conversation with Amy Carlson on July 8, 1994, you mentioned that the above request may be granted after supplying FDEP with the following information.

1. Requested Amendment to Construction Expiration Date.
2. A request for the facility to operate under the terms and conditions specified in the construction permit.
3. Revised permit conditions which allow the submittal of the operating permit application consistent with Title V requirements.
4. A statement that the permit extension does not relieve the owner/operator from the original compliance testing schedule set forth in the construction permit.

The requested information is provided in the following paragraphs.

Requested Amendment to Construction Expiration Date

From March 31, 1995 to July 9, 1995

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AUG 23 1994
BAR ASBESTOS

Revision of Specific Permit Conditions

Add Specific Condition 28: The facility shall be allowed to commence operation in accordance with all the terms and provisions included herein, after conducting stack compliance testing as specified in Specific Condition 8. This extended and amended permit will constitute a temporary Permit to Operate upon commencement of operation and is valid through the expiration date listed herein.

Specific Condition 27: An application for an operation permit must be submitted to the Central District office at least 90 days prior to the expiration date of this construction permit in accordance with the applicable operating permit rules. 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. Rules 17-4.055 and 17-4.220).

Specification Condition 7: Any other operating parameters established during compliance testing and/or inspection that will ensure the proper operation of this facility may be included in the operating permit or in this amended construction permit upon sufficient request and documentation to the FDEP by the owner/operator.

Because the compliance testing condition (Specific Condition 8) sets the schedule based upon initial operation, and not the expiration date of the permit, Specific Condition 8 does not have to be revised to ensure compliance with NSPS requirements.

Emission Fees

On June 30, 1994, the FDEP sent a letter to KUA requesting verification of actual emissions during 1993, and the appropriate emissions fees to be provided to the FDEP.

Cane Island Units 1 and 2 were under construction in 1993 and were not operational in any capacity. Therefore, the actual emissions resulting from the operation of the units was 0 tpy. Because the Cane Island Plant is a Title V facility and will not have a permit to operate until 1995, an emission fee will not need to be paid until the first quarter of 1996 (i.e., between January 15 and March 1 of 1995) per F.A.C. regulation 17-213.200. However, because KUA is requesting that the facility be allowed to operate under an extended construction permit, any emissions that occur as a result of commercial operation in 1994 will be quantified and submitted with the appropriate fee to the FDEP in the first quarter of 1995. DEP Form

Bureau of Air Regulations
August 15, 1994
Page 4

17-213.900(1) "Major Air Pollution Source Annual Operation License Fee Form" will be completed and submitted with the licensing fee. Units 1 and 2 are both affected units under Title IV, and the annual licensing fee for 1996 through 1999 of \$250 (per year) will be submitted to the FDEP as appropriate.

We look forward to your review and expedient resolution of this matter.

Sincerely,

A. K. Sharma

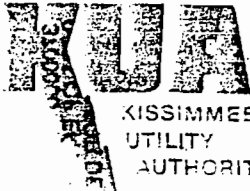
A. K. (Ben) Sharma, P.E.
Director of Power Supply

AKS/css

Enclosure

cc: Hobart Jacobs, B&V
Jeff Ling
Amy Carlson, B&V

J. Heron
C. Collins, C. Dast



KISSIMMEE UTILITY AUTHORITY VOID AFTER 90 DAYS
KISSIMMEE, FLORIDA
GENERAL OPERATING FUND

60-833
831

DATE
8/15/94

NO. 063268

0005539

AMOUNT
\$250.00

PAY TO:
Florida Dept of Environmental
Protection
2600 Blair Stone Rd
Tallahassee Fl 32399-2400

Richard L. Hord
CHAIRMAN

James C. Welsh
PRESIDENT AND GENERAL MANAGER
CEO

Bank, N.A.
Branch Office
Tallahassee, FL 32309

NO: 063268

KISSIMMEE UTILITY AUTHORITY

INVOICE NUMBER DESCRIPTION	REFERENCE	DATE	ACCOUNT NUMBER/PROJECT	AMOUNT
Amendment fee		8/15/94	041 9810 981 06 40 G34001	250.00
				250.00



Florida Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

August 24, 1993

Mr. David M. Lefebvre
Black & Veatch
P.O. Box 8405
Kansas City, Missouri 64114

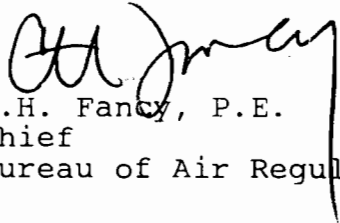
Dear Mr. Lefebvre:

Re: Permit No. AC49-205703, PSD-FL-182
Cane Island Combustion Turbine Project
Kissimmee Utility Authority

This is in reply to your letters dated June 1 and July 27, 1993, requesting revised carbon monoxide concentration levels for the Cane Island combustion turbine project. The requested changes are based on recent information from the turbine manufacturer and would result in an increase in allowable concentrations of 48 ppmvd (gas) and 81 ppmvd (oil) for the 40 MW gas turbine and 25 ppmvd (gas) for the 120 MW gas turbine.

Although we understand the reasons for requesting the changes now, we recommend waiting until the performance test has been completed. At that time the Department will adjust the limits as called for by the data. This approach avoids the need for further changes later. Your letter will remain on file as a pending request for adjustment of the limits prior to issuing the operation permit.

Sincerely,


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

CHF/TH/bb



BLACK & VEATCH

8400 Ward Parkway, P.O. Box No. 8405, Kansas City, Missouri 64114, (913) 339-2000

Kissimmee Utility Authority
Cane Island

B&V Project 17645
B&V File 32.0402
July 27, 1993

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

Subject: CO Emission Calculations

Attention: Mr. C. H. Fancy, P.E.

Gentlemen:

Based on a conversation with Teresa Heron on June 22, 1993, the Kissimmee Utility Authority (KUA) Cane Island construction permit can be amended as soon as she receives the carbon monoxide (CO) emission calculations showing the calculation from ppmvd to lb/h for the Unit 1 (GE LM6000) and Unit 2 (GE 7EA) combustion turbines. Attachment 1 shows this calculation for Units 1 and 2 in a form prepared by Black & Veatch. Attachment 2 shows the original calculation for Units 1 and 2 prepared by GE. This information was also provided to Teresa via facsimile on July 27, 1993.

The CO emission calculations include the conversion from ppmvd to lb/h for Unit 1 firing distillate fuel and natural gas. In addition, the CO emission calculations showing the conversion from ppmvd to lb/h for Unit 2 on natural gas are included.

If you have any questions regarding these emission calculations, please contact me at (913) 339-2028 or Amy Carlson at (913) 339-7425.

Very truly yours,

BLACK & VEATCH

D. D. Schultz

ALC:rs

Enclosures

cc: A. K. Sharma, KUA

J. Heron
C. Holladay
A. Zahon, C. Dist.

RECEIVED

JUL 30 1993

Division of Air
Resources Management

Attachment 1

CO (ppmvd to lb/h) Emission Calculations for Units 1 and 2

UNIT 1: GE LM6000 CO(ppm) to CO(lb/hr) Conversion

General Equation:

$$CO\left(\frac{lb}{hr}\right) = CO\text{ ppmvd @ } 15\% O_2 \times \frac{\text{moles dry}}{\text{moles wet}} \times \frac{\text{Mol Weight CO}}{\text{Avg Mol Wt Exhaust Gas}} \times \text{Exhaust Gas Flow}\left(\frac{lb}{sec}\right) \times 3600 \frac{sec}{hr}$$

Distillate Fuel:

From Engine Test for Distillate Fuel Operation at Guarantee Pointt:

CO ppmvd @ 15% O₂ = 80.8308 ppmvd

moles dry /moles wet = 0.9192

Mol Weight CO = 28.01

Avg Mol Wt Exhaust Gas = 28.5149

Exhaust Gas Flow = 280.2429 lb/sec

Therefore, using the general equation:

$$CO\left(\frac{lb}{hr}\right) = (80.8308 \times 10^{-6})(0.9192)\left(\frac{28.01}{28.5149}\right)(280.2429)(3600)$$

CO = 73.6282 lb/hr, Rounded to 74 lb/hr

UNIT 1: GE LM6000 CO(ppm) to CO(lb/hr) Conversion, (cont.)

General Equation:

$$CO\left(\frac{lb}{hr}\right) = CO_{ppmvd @ 15\% O_2} \times \frac{\text{moles dry}}{\text{moles wet}} \times \frac{\text{Mol Weight CO}}{\text{Avg Mol Wt Exhaust Gas}} \times \text{Exhaust Gas Flow}\left(\frac{lb}{sec}\right) \times 3600 \frac{sec}{hr}$$

Natural Gas Fuel:

From Engine Test for Distillate Fuel Operation at Guarantee Point:

CO ppmvd @ 15% O₂ = 46.8075 ppmvd

moles dry /moles wet = 0.9035

Mol Weight CO = 28.01

Avg Mol Wt Exhaust Gas = 28.1867

Exhaust Gas Flow = 279.5446 lb/sec

Therefore, using the general equation:

$$CO\left(\frac{lb}{hr}\right) = (46.8075 \times 10^{-6})(0.9035)\left(\frac{28.01}{28.1867}\right)(279.5446)(3600)$$

CO = 42.2907 lb/hr, Rounded to 42 lb/hr

UNIT 2: GE 7EA CO(ppm) to CO(lb/hr) Conversion

From Kissimmee Utility Authority

Base load at 59F, 60% R.H. Natural Gas Fuel

$$CO\left(\frac{lb}{hr}\right) = \frac{CO\text{ ppmvd}}{10^6} \times \frac{\text{MolWtCO}}{\text{MolWtExhaust}} \times \left(1 - \frac{\%H_2O\text{ by Vol}}{100}\right) \times \text{Exhaust Flow}\left(\frac{lb}{hr}\right)$$

$$CO\left(\frac{lb}{hr}\right) = \left(\frac{25}{10^6}\right) \left(\frac{28}{28.46}\right) \left(1 - \frac{7.07}{100}\right) (2344 \times 10^3)$$

CO = 53.577 lb/hr, Rounded to 54 lb/hr

Attachment 2

GE and KUA CO (ppmvd to lb/h) Emission Calculations for Units 1 and 2

**GAS TURBINE
PRODUCTION SYSTEMS ENGINEERING
FAX TRANSMITTAL**

TO:

DATE: 7/22/93

TO: Amy Carlson 7425 PS

LOCATION: B+V, Ks

FAX NUMBER: (913) 389-2934

NUMBER OF PAGES TO FOLLOW THIS COVER:

PAGE: 3

FROM:

Erin K. Barrett

GENERAL ELECTRIC COMPANY

1 RIVER ROAD BLDG 53 ROOM 401

SCHENECTADY, NEW YORK 12345 U.S.A.

IN CASE OF A PROBLEM SENDER CAN BE REACHED AT:

(518) 385-3594



GE Power Generation

*Production Systems Engineering
General Electric Company
One River Road, 53-401, Schenectady, NY 12345 USA
(518) 385-7864, Fx: (518) 385-1474, Tx: 145354*

July 22, 1993

Mr. Steve Edwards
Black & Veatch
1500 Meadow Lake Parkway
Kansas City, Missouri 64114
Tel. (913) 339-2000

Subject: Kissimmee Utility Authority

Dear Mr. Edwards:

This letter is in response to your letter of June 25, 1993, pertaining to CO emission conversions. Please find attached the conversion from CO ppm to CO lb/hr for both Distillate and Natural Gas fuel operation per your request.

Please advise if you have any questions or comments.

Best regards,

Erin K. Barrett
LM6000 Engineer

Copies to-

A. Carlson
R. Mills,
C. Shook,
V. Hoepfner,
J. Sanders,

B&V, 11401 Lamar, Overland Park, KS
S&S, Houston, TX
S&S, Houston, TX
37-2ANX
53-401

^{SE}
LM6000
CO(ppm) to CO(lb/hr) CONVERSION

GENERAL EQUATION:

$$\underline{CO (lb/hr)} = CO_{ppmud @ 15\% O_2} * \frac{\text{moles dry}}{\text{moles wet}} * \frac{\text{Mol Wt CO}}{\text{Avg Mol Wt Exh Gas}} * \text{Exhaust Gas Flow, lb/sec} * 3600 \text{ sec/hr}$$

DISTILLATE FUEL:

From Engine Test for Distillate Fuel Operation at Guar Pt:

$$CO_{ppmud @ 15\% O_2} = 80.8308 \text{ ppmud}$$

$$\text{moles dry / moles wet} = 0.9192$$

$$\text{Mol Wt CO} = 28.01$$

$$\text{Avg. Mol Wt Exhaust Gas} = 28.5149$$

$$\text{Exhaust Gas Flow} = 280.2429 \text{ lb/sec}$$

Therefore, using the General Equation:

$$CO(lb/hr) = (80.8308 \times 10^{-6})(0.9192) \left(\frac{28.01}{28.5149} \right) (280.2429)(3600)$$

$$CO = 73.6282 \text{ lb/hr, rounded to } 74 \text{ lb/hr}$$

NATURAL GAS FUEL:

From Engine Test for Natural Gas Operation at Guar Pt:

$$CO_{ppmud @ 15\% O_2} = 46.8075 \text{ ppmud}$$

$$\text{moles dry / moles wet} = 0.9035$$

$$\text{Mol Wt CO} = 28.01$$

$$\text{Avg Mol. Wt. Exhaust Gas} = 28.1867$$

$$\text{Exhaust Gas Flow} = 279.5446 \text{ lb/sec}$$

Therefore, using the General Equation:

$$CO (lb/hr) = (46.8075 \times 10^{-6}) (0.9035) \left(\frac{28.01}{28.1867} \right) (279.5446) (3600)$$

$$CO = 42.2907 \text{ lb/hr, rounded to } 42 \text{ lb/hr.}$$

TRANSMITTAL SHEET

DOC NO: FAX32942 TOTAL PAGES SENT: 2 (INCLUDING THIS PAGE)
 FROM: W.J. HUDSON - FAX NO. (803) 675-2400 TEL NO. (803) 675-2429

GE POWER GENERATION
 300 GARLINGTON ROAD
 P.O. BOX 648
 GREENVILLE, SC 29602

CC: GINGER HOEPPNER 37-2 ANNEX
 WALT POUA 53-200
 STEVE EDWARDS B&V

JULY 15, 1993

COMPANY: **BLACK & VEATCH, ENGINEERS-ARCHITECTS**

ATTENTION: **MS. AMY CARLSON**

CITY: KANSAS CITY STATE: MISSOURI COUNTRY: USA

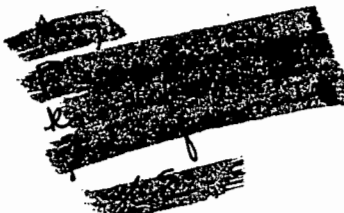
FAX PHONE NO. AT RECEIVING LOCATION: (913) 339-2934 (ALT 339-2936)

REFERENCE: KUA/FMPA GE DM# **GR0281**
 JOB NO. **23175.62.1003** GE ML# **7A1PEA91**
 CANE ISLAND UNIT #2 TB SN# **296047**

SUBJECT: CO (LBS/HR) CALCULATIONS @ 59 DEG F AND 60% HUMIDITY

ATTACHED HANDWRITTEN SHEET SHOWS METHOD OF CALCULATING THE 54 LBS/HR OF CARBON MONOXIDE FOR KISSIMMEE PROJECT AT ISO CONDITIONS.

REGARDS, JACK HUDSON



Project	23175	
Files	62.1003.06	
Date	7-15-93	
DISTRIBUTION		
	ACTION	INFO
[REDACTED]		X
SLE		X
NJA		X
HLJ/FILE		

GE 7EA

July 17/93

Kissimmee Utility Authority

Base load at 59°F, 60% R.H.
Natural gas fuel.

$$CO(lb/hr) = \frac{\text{provided CO}}{1.06} \times \frac{28}{MW_{\text{exh}}} \times \left(1 - \frac{\%H_2O}{100}\right) \times \text{Exh. flow (lb/hr)}$$

MW of CO by volume

$$= \frac{25}{1.06} \times \frac{28}{28.46} \times \left(1 - \frac{7.07}{100}\right) \times 2344 \times 10^3$$

= 53.577 lb/hr
 ≈ 54 lb/hr.

Post-it® brand fax transmittal memo 7671 # of pages 1

To	Jack Hudson	From	W. Pene
Co.		Co.	
Dept.		Phone	3600
Fax	8-788-2400	Fax	



June 9, 1993

Mr. C. H. Fancy, P.E.
Chief, Bureau of Air Regulation
Florida Dept. of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: Kissimmee Utility Authority
Amendment of Permitted CO Emissions
AC49-205703, PSD-FL-182

Dear Mr. Fancy:

Enclosed is a check for \$250.00 to cover the processing fee for the above referenced permit amendment as requested in your letter to Mr. David Lefebvre of Black & Veatch dated June 3, 1993.

Sincerely,

A. K. Sharma

A. K. (Ben) Sharma, P.E.
Director of Power Supply

AKS/css

Enclosure

001031

RECEIVED
DER-MAIL ROOM
1993 JUN 16 AM 8:46

P 230 524 362

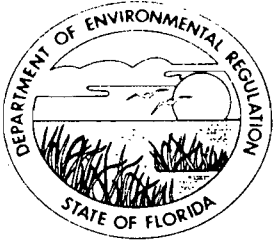


Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sender's Name	David Lefebvre	
Street Address	Black & Veatch	
City, State, ZIP	Kansas City, MO	
Postage	\$	
Certified Fee		
Special Delivery Fee		Mail Card
Restricted Delivery Fee		not needed 7/3/93
Return Receipt Showing to Whom & Date Delivered		
Return Receipt Showing to Whom, Date, and Addressee's Address		
TOTAL Postage & Fees	\$	
Postmark or Date	6-4-93	
	AC 49-205703	
	PSD-FI-182	

PS Form 3800, June 1991



Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Virginia B. Wetherell, Secretary

June 3, 1993

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. David M. Lefebvre
Black & Veatch
P. O. Box No. 8405
Kansas City, MO 64114

Dear Mr. Lefebvre:

RE: Kissimmee Utility Authority
Amendment of Permitted CO Emissions
AC49-205703, PSD-FL-182

The Bureau of Air Regulation received your May, 27, 1993, request for the above referenced project. On October 30, 1991, Rule 17-4.050(4)(o), F.A.C., was changed to require a \$250 processing fee for a permit amendment; therefore, we will not be able to take action on your request until the fee is received. If you have any questions, please call Patty Adams at (904) 488-1344.

Sincerely,

Patricia G. Adams

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

CHF/pa

cc: Teresa Heron



BLACK & VEATCH

8400 Ward Parkway, P.O. Box No. 8405, Kansas City, Missouri 64114 (913) 333-2000

RECEIVED

JUN 01 1993

Division of Air
Resources Management

Kissimmee Utility Authority
Cane Island Combustion Turbine Project

B&V Project 17645
B&V File 32.0402
May 27, 1993

Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Amendment of Permitted CO
Emissions

Attention: Mr. C. H. Fancy, PE, Chief

Gentlemen:

The Kissimmee Utility Authority (KUA) recently received an Authority to Construct (#AC49-205703/PSD-FL-182) for its Cane Island Combustion Turbine Project. In its final negotiations with General Electric (GE), its selected combustion turbine vendor, KUA was unable to receive guarantees from GE for several permit limits on carbon monoxide (CO) emissions. Therefore, KUA requests that the Bureau amend the permit to reflect these slightly higher CO emissions limits guaranteed by GE. The minor differences between the permitted CO emissions and the guaranteed CO emissions are described below.

- LM6000 simple cycle unit - The permit limits CO emissions to 40 lb/hr (30 ppm_{dv}) when burning natural gas and to 76 lb/hr (63 ppm_{dv}) when burning fuel oil. However, GE only anticipates achieving CO emissions as low as 42 lb/hr (48 ppm_{dv}) for natural gas and 75 lb/hr (81 ppm_{dv}) for fuel oil. Therefore, KUA requests that the permit be amended to increase the permitted CO emissions by 2 lb/hr (18 ppm_{dv}) for natural gas and by 18 ppm_{dv} for fuel oil. No adjustment in the lb/hr CO emission rate is needed for fuel oil.
- 7EA combined cycle unit - KUA negotiated with GE to buy a low NO_x combustor capable of achieving NO_x emissions as low as 9 ppm for this unit when burning natural gas. Although the use of this combustor will not increase CO mass emission rates (lb/hr) for either natural gas or fuel oil, this combustor does have slightly higher CO emissions concentrations (ppm_{dv}) when burning natural gas than allowed by the permit. Therefore, KUA requests the Bureau increase the allowable CO emission concentrations from 20 ppm_{dv} for natural gas in the existing permit to 25 ppm_{dv}.

Bureau of Air Regulation
Mr. C. H. Fancy, PE, Chief

B&V Project 17645
May 27, 1993

Since these deviations from the permitted limits are minor, KUA does not believe that the project's CO impacts will significantly change. Therefore, KUA requests that the Bureau amend KUA's permit to reflect these slightly increased CO emissions from both units.

If you have any questions concerning this request or if you need any further information to process this request, please call me at (913) 339-2164. Thank you for your cooperation in this matter.

Very truly yours,

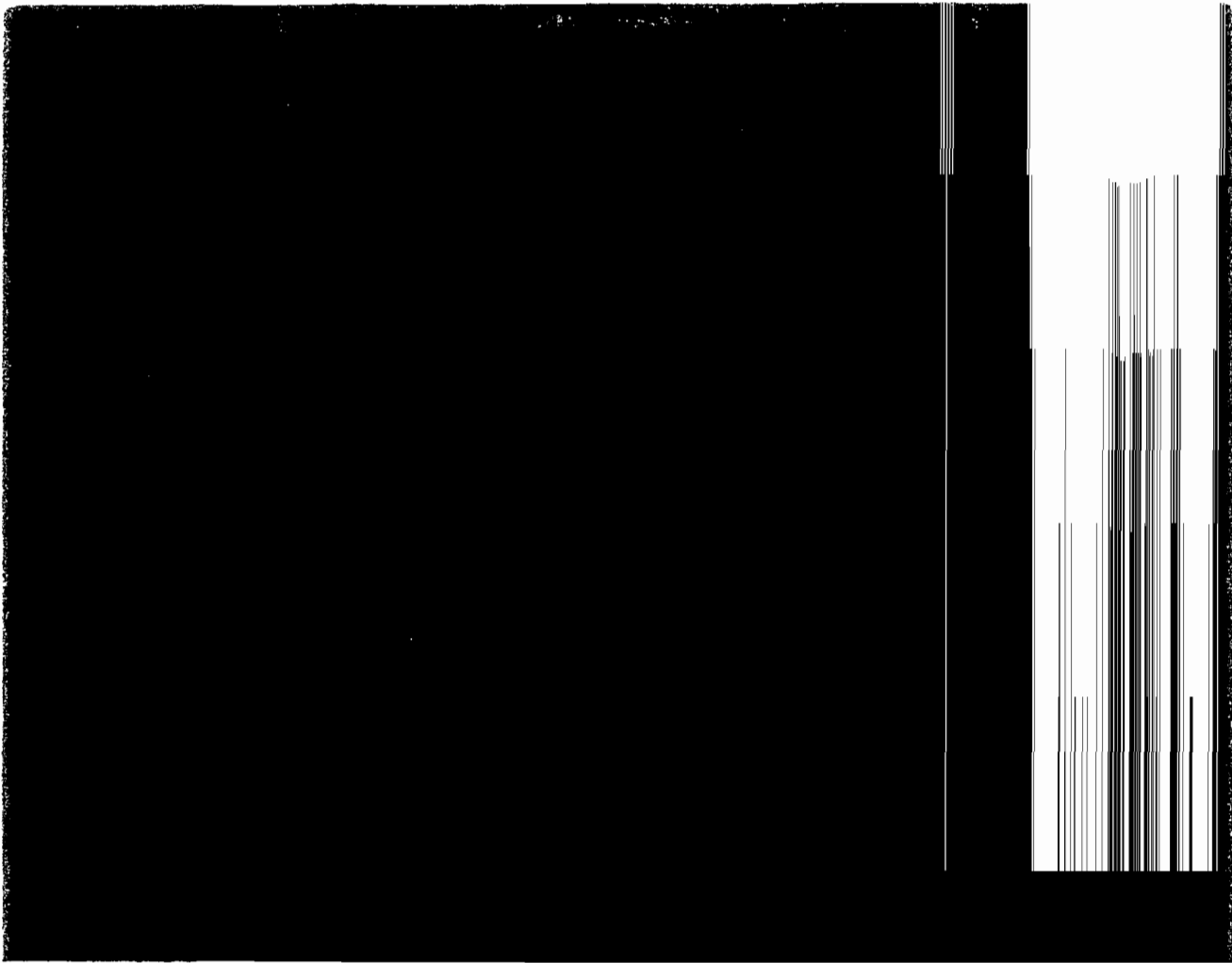
BLACK & VEATCH

David M Lefebvre

David M. Lefebvre

cc: Mr. A. K. "Ben" Sharma, KUA

BEST AVAILABLE COPY



BLACK & VEATCH

P.O. Box No. 8405
Kansas City, Missouri 64114

AG



Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Attn: Mr. C. H. Fancy, PE, Chief



Bureau of Air Regulation
Mr. C. H. Fancy, PE, Chief

B&V Project 17645
May 27, 1993

Since these deviations from the permitted limits are minor, KUA does not believe that the project's CO impacts will significantly change. Therefore, KUA requests that the Bureau amend KUA's permit to reflect these slightly increased CO emissions from both units.

If you have any questions concerning this request or if you need any further information to process this request, please call me at (913) 339-2164. Thank you for your cooperation in this matter.

Very truly yours,

BLACK & VEATCH

David M Lefebvre

David M. Lefebvre

cc: Mr. A. K. "Ben" Sharma, KUA



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

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

MAY 7 1993

4APT-AEB

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: Kissimmee Utility Authority, Cane Island Project (PSD-FL-182)

Dear Mr. Fancy:

This is to acknowledge receipt of the final determination and Prevention of Significant Deterioration (PSD) permit for the above referenced facility, by your letter dated April 9, 1993. The facility will consist of one simple cycle combustion turbine, nominally rated at 40 megawatts of electrical generating capacity, one combined cycle combustion turbine, nominally rated at 120 MW, a heat recovery steam generator, and a steam turbine generator. The combustion turbines will have the capability to fire either natural gas or No. 2 distillate fuel oil.

Your determination proposes to limit NO_x emissions through the use of maximum water injection and low-NO_x combustion technology (through 12/31/97), to limit NO_x emissions through the use of advanced low-NO_x combustion technology, selective catalytic reduction (on the combined-cycle unit), or another equivalent NO_x control technology (after 12/31/97), to limit SO₂ and H₂SO₄ emissions through limiting the sulfur content of the No. 2 distillate fuel oil, to limit CO and VOC emissions through the use of efficient combustion, to limit PM/PM₁₀ emissions through efficient combustion and the use of clean fuels, and to limit Be, Hg, and Pb emissions through fuel quality limits.

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

Sincerely yours,

Brian L. Beals, Chief
Source Evaluation Unit
Air Enforcement Branch
Air, Pesticides, and Toxics
Management Division

cc: J. Nelson
C. Holladay
A. Zahon, C. Dist.
A. R. Sharma, KY
A. Bandyop, NPS

RECEIVED

MAY 11 1993

Division of Air
Resources Management

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF PERMIT

In the matter of an
Application for Permit by:

DER File No. AC49-205703
PSD-FL-182

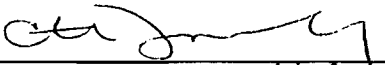
Mr. A. K. Sharmer
Director of Power Supply
Kissimmee Utility Authority
1701 West Carroll Street
Kissimmee, Florida 34741

Enclosed is Permit Number AC49-205703 to construct a 40 MW simple cycle combustion turbine (SCCT) and a 120 MW combined cycle combustion turbine (CCCT). The combustion turbines will have the capability to fire either natural gas or No. 2 fuel oil. Water injection or low NOx combustors will be used to control nitrogen oxides (NOx) emissions and low sulfur fuel (0.5% S) will be fired to control sulfur dioxide (SO₂) emissions. The CCCT will intermittently operate in a simple cycle when the HRSG or steam turbine is down for maintenance and/or repair. These two combustion gas turbines are located in Kissimmee, Osceola County, Florida.

Any party to this Order (permit) has the right to seek judicial review of the permit 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 this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION


C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMIT and all copies were mailed before the close of business on 4-9-93 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED,
on this date, pursuant to
§120.52(11), Florida Statutes,
with the designated Department
Clerk, receipt of which is hereby
acknowledged.


(Clerk)

4-9-93
(Date)

Copies furnished to:

Mr. T. A. Kaczmariski, P.E.
Mr. Chuck Collins, CD
Ms. Jewell Harper, EPA
Mr. John Bunyak, NPS



State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee	
To: <i>Law</i>	Location: _____
To: _____	Location: _____
To: _____	Location: _____
From: _____	Date: _____

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Interoffice Memorandum

APR 06 1993

DEPARTMENT OF ENVIRONMENTAL REGULATION
OFFICE OF THE SECRETARY

TO: Virginia B. Wetherell
FROM: Howard L. Rhodes *HLR*
DATE: April 1, 1993
SUBJ: Approval of Construction Permit AC49-205703 (PSD-FL-182)
Kissimmee Utility Authority

Attached for your approval and signature is a permit prepared by the Bureau of Air Regulation for the above mentioned company to construct a 40 MW simple cycle combustion turbine (SCCT) and a 120 MW combined cycle combustion turbine (CCCT).

Kissimmee Utility Authority proposes to operate two combustion gas turbines. The combustion turbines will have the capability to fire either natural gas or No. 2 fuel oil. Water injection or low NO_x combustors will be used to control nitrogen oxides (NO_x) emissions and low sulfur fuel (0.05% S) will be fired to control sulfur dioxide (SO₂) emissions. The CCCT will intermittently operate in a simple cycle when the HRSG or steam turbine is down for maintenance and/or repair.

I recommend your approval and signature.

HLR/TH/plm

Attachments

Final Determination

Kissimmee Utility Authority
Kissimmee, Osceola County, Florida

40 MW Simple Cycle Combustion Gas Turbine
120 MW Combined Cycle Combustion Gas Turbine

Permit Number: AC49-205703
PSD-FL-182

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

April 1, 1993

FINAL DETERMINATION

The Technical Evaluation and Preliminary Determination for the permit to construct a 40 MW simple cycle combustion turbine (SCCT) and a 120 MW combined cycle combustion turbine (CCCT) system facility in Intercession City, Florida, was distributed on November 18, 1992. The Notice of Intent was published in The Orlando Sentinel on December 20, 1992. Copies of the evaluation were available for inspection at the Department's offices in Orlando and Tallahassee.

Kissimmee Utility Authority's (KUA) application for a permit to construct a 40 MW SCCT and a 120 MW CCCT system facility at their Intercession City site has been reviewed by the Bureau of Air Regulation in Tallahassee.

No adverse comments were submitted by the U.S. Environmental Protection Agency (EPA) in their letter dated December 17, 1992, or by the U.S. Department of the Interior in their letters of December 18, 1992, and January 26, 1993.

Comments regarding the Technical Evaluation and Preliminary Determination (Synopsis of Application) and specific conditions of the permit were submitted by Donald D. Shultz of Black & Veatch. The Bureau has considered Mr. Shultz's comments and has agreed to the changes proposed in the material covered by the document entitled "Synopsis of Application" (page 2 through 9) as requested. Regarding the modification of the specific conditions of the permit, these changes, if accepted, will be finalized as follows:

DER PERMIT NUMBER AC49-205703, PSD-FL-182, FOR THE KUA 120 MW COMBINED CYCLE TURBINE AND 40 MW SIMPLE CYCLE TURBINE

RESPONSE TO COMMENT No. 1

The expiration date will be changed to **March 31, 1995**

RESPONSE TO COMMENT No. 2, 3, and 4

Specific Condition No. 8

Compliance with the NO_x, SO₂, CO, PM, PM₁₀, and VOC standards shall be determined (while operating at 95-100% of the permitted maximum heat input rate **corresponding to the particular ambient conditions**) within 180 days of initial operation of the maximum capability of the unit and annually thereafter, by the following reference methods as described in 40 CFR 60, Appendix A (July 1992 version) and adopted by reference in F.A.C. Rule 17-297.

- Method 1 Sample and Velocity Traverses
- Method 2 Volumetric Flow Rate
- Method 3 Gas Analysis

- Method 5 Determination of Particulate Emissions from
or Stationary Sources
- Method 17
- Method 9 Visual Determination of the Opacity of Emissions
from Stationary Sources
- Method 8 Determination of Sulfuric Acid Mist and **Sulfur
Dioxide Emissions** from Stationary Sources (**for fuel
oil burning only**).
- Method 10 Determination of Carbon Monoxide **Emissions** from
Stationary Sources
- Method 20 Determination of Nitrogen Oxides, Sulfur Dioxide,
and Diluent Emissions from Stationary Gas Turbines
- Method 25A Determination of Total Gaseous Organic
Concentrations Using a Flame Ionization Analyzer

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

RESPONSE TO COMMENT No. 5

This condition will not be deleted. The Department is declining this request because natural gas contains varying small amounts of sulfur. Recent applications for similar turbines burning natural gas have shown emissions up to 4 lbs SO₂/hr. If SO₂ emissions from any of these sources exceed 40 TPY, the project will be retroactively subject to the PSD regulations for this pollutant.

RESPONSE TO COMMENT No. 6

Conditions Nos. 16, 17 and 18 will be combined and reworded as follows:

Specific Condition No. 16

The permittee shall comply with the following requirements:

(a) Install, calibrate, maintain, and operate a continuous emission monitor in each stack to measure and record the nitrogen oxides emissions from each source. The continuous emission monitor must comply with 40 CFR 60, Appendix B, Performance Specification 2 (July 1, 1992); (b) A continuous monitoring system shall be installed to monitor and record the fuel consumption on each unit. While water injection is being 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. The system shall meet the requirements of 40 CFR Part 60, Subpart GG; (c) In addition, literature on equipment selected shall be submitted as it becomes available. A CT-specific graph of the relationship between

NOx emissions and water injection and also another of ambient temperature and heat inputs to the CT shall be submitted to DER's Central District office and the Bureau of Air Regulation.

RESPONSE TO COMMENTS ON TABLES 1 and 2, and BACT DETERMINATION

The numerical levels for CO, PM and Be were modified as requested. The BACT emission level for NO_x will remain as originally set for both turbines (15 ppmvd). However, the wording of some sections of the BACT determination was modified as requested by the applicant.

Because of the uncertainty of time of the NO_x control technology being achieved for the simple cycle CT, the Department will review this permit annually (after 1/1/95) and will modify its specific conditions to reflect the BACT Determination NO_x emission level, if appropriate.

In response to comments from the Department of the Interior (Fish and Wildlife Services) Specific Condition No. 15 will be changed as follows:

Specific Condition No. 15

The permittee shall comply with the following by 1/1/98:

- a) For the combined cycle unit (PG7111EA), if the 15 (gas)/42 (oil) ppmv emission rates cannot be met by 1/1/98, SCR will be installed. Hence, the permittee shall install a duct module suitable for future installation of SCR equipment.
- b) For the simple cycle unit (LM6000), the manufacturer will attempt to achieve a maximum NO_x emission level of 15 (gas)/42 (oil) ppmv by 1/1/98. Should this level of control not be achieved when the compliance demonstration stack tests are performed, the permittee must provide the Department with expected compliance dates which will be updated annually. After 1/1/98, if the compliance schedule has not been met, the Department may require SCR be installed since the exhaust temperature has an acceptable range for SCR installation.

The Department will revise permitted emission levels for NO_x for both turbines if the manufacturer achieves an even lower NO_x emission than 15 (gas)/42 (oil) ppmv pursuant to F.A.C. Rule 17-4.080, Modification of Permit Conditions.

The final action of the Department will be to issue construction permit AC49-205703 (PSD-FL-182) with the changes noted above.

P 710 058 555



Certified Mail Receipt

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to <i>A K Sharnner</i>	
Street & No. <i>Kissimmee U A</i>	
City, State & ZIP Code <i>Kissimmee, FL</i>	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	\$
Postmark or Date <i>4-9-93</i> <i>AC 49-205703</i> <i>PSD-FI-182</i>	

PS Form 3800, June 1990

PS Form 3817, JULY 1983 447-845

DOMESTIC RETURN RECEIPT

SENDER: Complete items 1, 2, 3 and 4.
Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

- Show to whom, date and address of delivery.
- Restricted Delivery.

3. Article Addressed to:
A K Sharnner
Kissimmee Utility Authority
1701 W Carroll St
Kissimmee FL 34741

4. Type of Service:	Article Number
<input type="checkbox"/> Registered <input type="checkbox"/> Insured	<i>P 710 058 555</i>
<input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD	
<input type="checkbox"/> Express Mail	

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee
X *Michelle Robin*

6. Signature - Agent
X

7. Date of Delivery
4-17

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



United States Department of the Interior



FISH AND WILDLIFE SERVICE
75 Spring Street, S.W.
Atlanta, Georgia
30303

February 2, 1993

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

Dear Mr. Fancy:

Please remove and replace from your files our letter dated January 26, 1993, with the following corrected letter. This letter provides the Service's comments on the Kissimmee Utility Authority (KUA) permit application for the proposed Kissimmee Cane Island combustion turbines project. The enclosed version does not substantively change our previous comments, but is necessary to correct errors which developed in the computer scanning process used to develop the letter. These single character errors were not caught in our internal review process. Please accept our apology for any inconvenience this may cause.

Sincerely yours,

Harold W. Benson
Acting Regional Director

Enclosure

RECEIVED

FEB 09 1993

Division of Air
Resources Management



United States Department of the Interior



FISH AND WILDLIFE SERVICE
75 Spring Street, S.W.
Atlanta, Georgia
30303

February 2, 1993

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

Dear Mr. Fancy:

We have completed our review of Kissimmee Utility Authority's (KUA) permit application for the proposed Kissimmee Cane Island combustion turbines project in Intercession City, Florida. The KUA facility would be located 115 km east of the Chassahowitzka Wilderness Area (WA), a Class I air quality area administered by the Fish and Wildlife Service. Our comments on the control technology, modeling, and air quality related values analyses are discussed below. We ask that you consider these comments before making a final determination on the KUA permit.

Control Technology Analysis

The proposed facility would be a significant emitter of nitrogen oxides (NO_x), sulfur dioxide (SO_2), carbon monoxide (CO), particulate matter (PM), sulfuric acid mist (H_2SO_4), and beryllium (Be). KUA proposes to minimize emissions from the turbines by using proper combustion controls, burning low sulfur fuel (gas as the primary fuel and oil with a maximum sulfur content of 0.05 percent as the backup fuel), and use of water injection and low- NO_x burners. We agree that proper combustion controls and burning a low sulfur fuel are best available control technology (BACT) for PM, Be, CO, SO_2 , and H_2SO_4 . Regarding NO_x , we still believe that either water injection in combination with Selective Catalytic Reduction (SCR), or dry low- NO_x combustors is BACT for new combined cycle combustion turbine projects. Dry low- NO_x combustors can reduce NO_x levels to less than 15 parts per million (ppm) when firing natural gas, while SCR can achieve flue gas NO_x concentrations as low as 6 ppm when burning gas and 9 ppm when burning oil. In fact, it is also our understanding that General Electric is developing processes, using either steam/water injection or dry-low NO_x combustor technology to achieve a NO_x control level of 9 ppm when firing natural gas. Therefore, we do not object to the Florida Department of

Environmental Regulation (FDER) allowing KUA to emit at the 25 ppm NO_x rate while General Electric develops dry low-NO_x combustors and/or other NO_x reduction processes for the proposed turbines. This is conditional on KUA installing SCR technology on the combined cycle turbine if they can not at least meet the 15 ppm rate by December 31, 1997. Finally, the FDER's BACT analysis and the draft permit appear to be inconsistent with respect to specifying even lower emission levels. The FDER states on page 9 of their BACT analysis, "For both turbines when the manufacturer achieves an even lower NO_x emission level than 15 (gas)/42 (oil) ppmvd, this level would become a condition of this permit." However, the specific conditions in the draft permit do not include such a provision. In order to be consistent with the conclusions of the BACT analysis, the FDER should revise the specific conditions to include the statement that the FDER may revise and lower the allowable BACT limit to less than 15 ppm if such a lower rate is achievable.

Modeling Analysis

In addressing the Class I SO₂ and NO₂ increments, KUA modeled its impact at the Chassahowitzka WA with the EPA MESOPUFF II model, using one year of meteorological data (1986) with surface data from Tampa, Orlando, and Gainesville, and upper air data from Ruskin, Florida. For the SO₂ analysis, KUA initially modeled assuming a worst-case emission rate based on firing 0.3% sulfur oil. For the 3-hour and 24-hour averaging periods, the MESOPUFF II modeling indicates that the KUA facility would significantly consume SO₂ increment (i.e., having an impact greater than 0.48 ug/m₃ and 0.07 ug/m₃, respectively) at the Chassahowitzka WA. For the 24-hour averaging period, KUA would significantly impact the Chassahowitzka WA for 53 days. Therefore, KUA performed a cumulative MESOPUFF II modeling analysis to assess whether it contributed significantly to a Class I increment violation. The cumulative modeling analysis modeled 98 sources defined in the FDER's Class I PSD inventory. The cumulative MESOPUFF II analysis indicated that KUA would significantly contribute to one Class I increment violation. Therefore, the KUA facility has agreed to limit the sulfur content of its fuel oil to 0.05%, thereby eliminating any significant increment consumption at the Chassahowitzka WA for both the 3-hour and 24-hour averaging periods. KUA calculated the annual SO₂ impact using the ISCST model and 1 year of 1986 data. The modeling indicates that based on a fuel oil sulfur content of 0.05%, KUA's impact would be below the significant impact level of 0.025 ug/M₃ for the annual average for SO₂.

The MESOPUFF II model was used to calculate the annual impact for NO₂. The modeling results indicate that KUA's impact will be greater than the significant level of 0.025 ug/m₃, with an annual impact of 0.12 ug/m₃.

KUA performed a visibility modeling analysis for the Chassahowitzka WA using the EPA VISCREEN model. The KUA facility passed the Level I VISCREEN analysis, and therefore, is not expected to cause visible plume impacts at Chassahowitzka WA.

Air Quality Related Values Analysis

KUA sufficiently addressed potential impacts to vegetation, soils, terrestrial wildlife, and visibility in the Chassahowitzka WA from the proposed emissions. However, KUA failed to assess the potential effects on freshwater wetlands and related wildlife in the Chassahowitzka WA from sulfate deposition. These wetlands have a thin veneer of organic soil over a porous limestone base. As precipitation containing sulfate percolates through the soil, the organic matter in the soil may be oxidized. Such oxidation could cause erosion of the thin soil veneer. Many types of vegetation and invertebrates depend upon this veneer, and its loss would seriously alter and impair the function of the wetland ecosystem.

We are also concerned about the effect of nitrate deposition on the saltwater habitat of Chassahowitzka WA. Nitrogen has been found to be the critical limiting nutrient to algal growth and eutrophication in coastal marine waters. Nitrogen enrichment has led to nuisance algal blooms; subsequent algal die-off can result in depleted dissolved oxygen concentrations in the water. In addition, algal blooms increase the turbidity of the water, decreasing light levels to rooted aquatic plants. Shallow coastal waters are particularly vulnerable to this process. Such changes in the patterns and magnitudes of phytoplankton production, changes in the production of rooted aquatic macrophytes, and changes in concentrations of dissolved oxygen can lead to alterations in the entire food web.

Atmospheric deposition of nitrogen, in the form of nitrates from emissions of nitrogen oxides, has been shown to be a significant source of nitrogen loading to coastal marine ecosystems, notably the Chesapeake Bay. Recently, atmospheric deposition of nitrogen to the Apalachicola River watershed in northern Florida was found to be sufficient to account for essentially all the dissolved nitrate and ammonium and total organic nitrogen flow in the river. The Apalachicola River empties into the Apalachicola Bay, where it is likely that these nitrogen compounds cause nutrient enrichment of the phytoplankton, with its associated problems of turbidity and decreased dissolved oxygen. Similar processes may be occurring in the Chassahowitzka WA ecosystem.

We do not expect KUA to quantify, or evaluate the impacts of, sulfate and nitrate deposition in the Chassahowitzka WA. However, in the near future, the Interagency Working Group on Air Quality Modeling (IWAQM) will be releasing the revised MESOPUFF II model. This version will have the capability to calculate

nitrate and sulfate deposition mass, as well as ground level concentrations. At that time, we will request that new sources which have a significant concentration impact in a Class I area perform cumulative modeling analyses to calculate both deposition and concentration at the respective Class I areas. In addition, such sources will be expected to perform an Air Quality Related Values Analysis based on the results of the deposition modeling. Applicants can contact our Air Quality office in Denver for guidance on the deposition modeling.

We appreciate your continued cooperation in requiring applicants to adequately assess the impacts of new emissions on the resources in our Class I areas. If you have any questions regarding this matter, please contact Ellen Porter of our Air Quality Branch office in Denver at 303/969-2071.

Sincerely yours,

Harold W. Benson
Harold W. Benson
Acting Regional Director

cc: *J. Neer*
C. Holladay
L. Collins, & Dist
J. Harper, EPA
D. Zefenore, BCU



U.S. Fish and Wildlife Service
 Division of Refuges and Wildlife, Southeast Region



Phone: (404) 331-0830
 FTS 841-0830

75 Spring Street, Room 1240
 Atlanta, GA 30303

FAX (404) 730-2023
 FTS 880-2023

Date: January 26, 1973

To: C.H. Fancy, Florida Department of
 Environmental Regulation

FAX 904 922-
 6979

From: Sarah Bridges, USFWS (WTH), Atlanta

Subject: Kissimmee Utility Authority

Number Of Pages To Follow: 4

Remarks: We are trying to get a copy of this
 letter with James Pulliam's signature
 sent to you by close-of-business today. We
 want you to have the ~~advance copy~~
~~for your use~~

Thank you for permitting us to
 be so very late with the submission.

Signed letter attached

INTENT TO ISSUE PERMIT
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 Kasimwee Utility Authority (KUA), 1702 West Carol Street, Kasimwee, Osceola County, Florida, to construct a 40 MW simple cycle and a 120 MW combined cycle combustion gas turbine at their facility. A determination of Best Available Control Technology (BACT) was required. 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 fourteen (14) days of publication of this notice. Petitioners 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) pursuant to 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 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 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 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 29-5.207 F.A.C.

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 32803-3757

Any person may send written comments on the proposed action to Mr. Preston Lewis 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(s). Such requests must be submitted within 30 days of this notice.

CONCIS3005 Dec 20, 1992

LEGAL ADVERTISEMENT
RFP NO. 21-93
TRANSPORTATION
PLANNING CONSULTING
SERVICES

The City of Altamonte Springs, in compliance with the Consultant's Competitive Negotiation Act, FL 50-287.050, is seeking



United States Department of the Interior



FISH AND WILDLIFE SERVICE
75 Spring Street, S.W.
Atlanta, Georgia
30303

January 26, 1993

RECEIVED

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

JAN 29 1993

Division of Air
Resources Management

Dear Mr. Fancy:

We have completed our review of Kissimmee Utility Authority's (KUA) permit application for the proposed Kissimmee Cane Island combustion turbines project in Intercession City, Florida. The KUA facility would be located 115 km east of the Chassahowitzka Wilderness Area (WA), a Class I air quality area administered by the Fish and Wildlife Service. Our comments on the control technology, modeling, and air quality related values analyses are discussed below. We ask that you consider these comments before making a final determination on the KUA permit.

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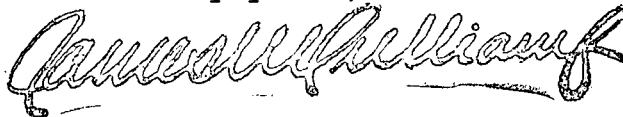
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nitrate and sulfate deposition mass, as well as ground level concentrations. At that time, we will request that new sources which have a significant concentration impact in a Class I area perform cumulative modeling analyses to calculate both deposition and concentration at the respective Class I areas. In addition, such sources will be expected to perform an Air Quality Related Values Analysis based on the results of the deposition modeling. Applicants can contact our Air Quality office in Denver for guidance on the deposition modeling.

We appreciate your continued cooperation in requiring applicants to adequately assess the impacts of new emissions on the resources in our Class I areas. If you have any questions regarding this matter, please contact Ellen Porter of our Air Quality Branch office in Denver at 303/969-2071.

Sincerely yours,



James W. Pulliam, Jr.
Regional Director

cc:

Jewell Harper, Chief
Air Enforcement Branch
Air, Pesticides and Toxic Management Division
U.S. EPA, Region 4
345 Courtland Street, NE.
Atlanta, GA 30365

bcc:

FWS-REG. 4: AQC
FWS-REG. 6: Ty Berry
CHAS: Refuge Manager
AQD-DEN: Ellen Porter
National Park Service - AIR
P.O. Box 25287
Denver, CO 80225

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Sincerely yours,

A handwritten signature in cursive script, appearing to read "James W. Pulliam, Jr.", written in black ink.

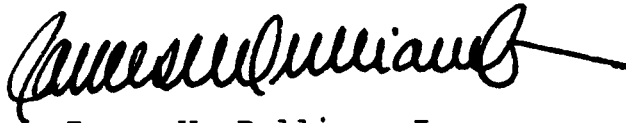
James W. Pulliam, Jr.
Regional Director

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

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Sincerely yours,

A handwritten signature in black ink, appearing to read "James W. Pulliam, Jr.", with a long horizontal stroke extending to the right.

James W. Pulliam, Jr.
Regional Director



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

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

DEC 17 1992

4APT-AEB

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: Kissimmee Utility Authority, Cane Island Project
(PSD-FL-182)

Dear Mr. Fancy:

This is to acknowledge receipt of the preliminary determination and draft Prevention of Significant Deterioration (PSD) permit for the above referenced facility, by your letter dated November 18, 1992. The facility will consist of one simple cycle combustion turbine, nominally rated at 40 megawatts of electrical generating capacity, one combined cycle combustion turbine, nominally rated at 120 MW, a heat recovery steam generator, and a steam turbine generator. The combustion turbines will have the capability to fire either natural gas or No. 2 distillate fuel oil.

Your determination proposes to limit NO_x emissions through the use of maximum water injection and low-NO_x combustion technology (through 12/31/97), to limit NO_x emissions through the use of advanced low-NO_x combustion technology, selective catalytic reduction (on the combined-cycle unit), or another equivalent NO_x control technology (after 12/31/97), to limit SO₂ and H₂SO₄ emissions through limiting the sulfur content of the No. 2 distillate fuel oil, to limit CO and VOC emissions through the use of efficient combustion, to limit PM/PM₁₀ emissions through efficient combustion and the use of clean fuels, and to limit Be, Hg, and Pb emissions through fuel quality limits.

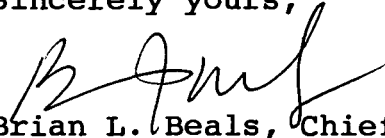
RECEIVED

DEC 28 1992

Division of Air
Resources Management
Printed on Recycled Paper

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

Sincerely yours,


Brian L. Beals, Chief
Source Evaluation Unit
Air Enforcement Branch
Air, Pesticides, and Toxics
Management Division

cc: J. Heon
C. Nelladay
C. Collins, CDist.
G. Bunnah, NPS
D. Zefebure, B & V



December 21, 1992

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

RE: DER File No. AC 49-205703
PSD-FL-182
Osceola County

Dear Mr. Lewis:

Please find enclosed a copy of the public notice which was published in the local newspaper, The Orlando Sentinel, on December 20, 1992.

Sincerely,

A handwritten signature in cursive script that reads "A.K. Sharma".

A. K. (Ben) Sharma, P.E.
Director of Power Supply

AKS/css

Enclosure

cc: David Lefebvre, B&V

Handwritten initials in cursive script. The first line appears to be "J. Ryan" and the second line appears to be "C. Halladay".

RECEIVED

DEC 23 1992

Division of Air
Resources Management

The Orlando Sentinel

Published Daily
\$185.31

State of Florida } S.S.
COUNTY OF ORANGE

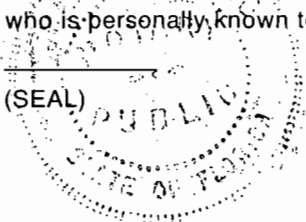
Before the undersigned authority personally appeared Mary Lynn McKenzie, who on oath says that he/she is the Legal Advertising Representative of The Orlando Sentinel, a daily newspaper published at ORLANDO in ORANGE County, Florida; that the attached copy of advertisement, being a INTENT TO ISSUE PERMIT in the matter of PSD PERMIT in the ORANGE Court, was published in said newspaper in the issue; of 12/20/92

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

The foregoing instrument was acknowledged before me this 22 day of December, 19 92, by Mary Lynn McKenzie who is personally known to me and who did take an oath.

Mary Lynn McKenzie
Juanita Rosado
JUANITA ROSADO

Juanita Rosado
Notary Public, State of Florida
My commission expires June 18, 1994
Commission # CC022902



**INTENT TO ISSUE PERMIT
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 Kissimmee Utility Authority (KUA), 1702 West Carroll Street, Kissimmee, Osceola County, Florida, to construct a 40 NW simple cycle and a 120 NW combined cycle combustion gas turbine at their facility. A determination of Best Available Control Technology (BACT) was required. 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 fourteen (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) pursuant to Section 120.57, Florida Statutes.

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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.

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Any person may send written comments on the proposed action to Mr. Preston Lewis 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(s). Such requests must be submitted within 30 days of this notice. CORC163006 Dec. 20, 1992

Department of Environmental Regulation
Routing and Transmittal Slip

To: (Name, Office, Location)

1. *Nestor Lewis*
2. *ARM - BAR Permits*
- 3.
- 4.

Remarks:

*For your files -
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NUMBER OF PAGES TO FOLLOW 3

TO: FDE
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FROM: ELLEN PORTER, U.S. FISH & WILDLIFE SERVICE
AIR QUALITY BRANCH PHONE: (303) 969-2617

SUBJECT: COMMENTS ON KISSIMMEE UTILITY
AUTHORITY PERMIT

REMARKS: DRAFT ENCLOSED.

cc: C. Halladay
S. Merson

DRAFT

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

Dear Mr. Fancy:

We have completed our review of Kissimmee Utility Authority's (KUA) permit application for the proposed Kissimmee Cane Island combustion turbines project in Intercession City, Florida. The KUA facility would be located 115 km east of the Chassahowitzka Wilderness Area (WA), a Class I air quality area administered by the U.S. Fish and Wildlife Service. Our comments on the control technology, modeling, and air quality related values analyses are discussed below. We ask that you consider these comments before making a final determination on the KUA permit.

Control Technology Analysis

The proposed facility would be a significant emitter of nitrogen oxides (NO_x), sulfur dioxide (SO_2), carbon monoxide (CO), particulate matter (PM), sulfuric acid mist (H_2SO_4), and beryllium (Be). KUA proposes to minimize emissions from the turbines by using proper combustion controls, burning low sulfur fuel (gas as the primary fuel and oil with a maximum sulfur content of 0.05 percent as the backup fuel), and use of water injection and low- NO_x burners. We agree that proper combustion controls and burning a low sulfur fuel are best available control technology (BACT) for PM, Be, CO, SO_2 , and H_2SO_4 . Regarding NO_x , we still believe that either water injection in combination with Selective Catalytic Reduction (SCR), or dry low- NO_x combustors is BACT for new combined cycle combustion turbine projects. Dry low- NO_x combustors can reduce NO_x levels to less than 15 parts per million (ppm) when firing natural gas, while SCR can achieve flue gas NO_x concentrations as low as 6 ppm when burning gas and 9 ppm when burning oil. In fact, it is also our understanding that General Electric is developing programs, using either steam/water injection or dry-low NO_x combustor technology to achieve a NO_x control level of 9 ppm when firing natural gas. Therefore, we do not object to the Florida Department of Environmental Regulation (FDER) allowing KUA to emit at the 25 ppm NO_x rate while General Electric develops dry low- NO_x combustors and/or other NO_x reduction programs for the proposed turbines. This is conditional on KUA installing SCR technology on the combined cycle turbine if they can not at least meet the 15 ppm rate by December 31, 1997. Finally, the FDER's BACT analysis and the draft permit appear to be inconsistent with respect to specifying even lower emission levels. The FDER states on page 9 of their BACT analysis, "For both turbines...when the manufacturer achieves an even lower NO_x emission level than 15 (gas)/42 (oil) ppmvd, this level would become a condition of this permit." However, the specific conditions in the draft permit do not include such a provision. In order to be consistent with the conclusions of the BACT analysis, the FDER should revise the specific conditions to include the statement that the FDER may revise and lower the allowable BACT limit to less than 15 ppm if such a lower rate is achievable.

Modeling Analysis

In addressing the Class I SO₂ and NO₂ increments, KUA first modeled its impact at the Chassahowitzka WA with the EPA ISCST model, using one year of meteorological data (1986) with surface data from Tampa, Orlando, and Gainesville, and upper air data from Ruskin, Florida. For the SO₂ analysis, KUA initially modeled assuming a worst-case emission rate based on firing 0.3% sulfur oil. For the 3-hour and 24-hour averaging periods, the ISCST modeling indicates that the KUA facility would significantly consume SO₂ increment (i.e. having an impact greater than 0.48 ug/m³ and 0.07 ug/m³, respectively) at the Chassahowitzka WA. For the 24-hour averaging period, KUA would significantly impact the Chassahowitzka WA for 53 days. Therefore, KUA performed a cumulative MESOPUFF II modeling analysis to assess whether it contributed significantly to a Class I increment violation. The cumulative modeling analysis modeled 98 sources defined in the FDER's Class I PSD inventory. The cumulative MESOPUFF II analysis indicated that KUA would significantly contribute to one Class I increment violation. Therefore, the KUA facility has agreed to limit the sulfur content of its fuel oil to 0.05%, thereby eliminating any significant increment consumption at the Chassahowitzka WA for both the 3-hour and 24-hour averaging periods. KUA calculated the annual SO₂ impact using the ISCST model and 1 year of 1986 data. The modeling indicates that based on a fuel oil sulfur content of 0.05%, KUA's impact would be below the significant impact level of 0.025 ug/m³ for the annual average for SO₂.

The MESOPUFF II model was used to calculate the annual impact for NO₂. The modeling results indicate that KUA's impact will be greater than the significant level of 0.025 ug/m³, with an annual impact of 0.12 ug/m³.

KUA performed a visibility modeling analysis for the Chassahowitzka WA using the EPA VISCREEN model. The KUA facility passed the Level I VISCREEN analysis, and therefore, is not expected to cause visible plume impacts at Chassahowitzka WA.

Air Quality Related Values Analysis

KUA sufficiently addressed potential impacts to vegetation, soils, terrestrial wildlife, and visibility in the Chassahowitzka WA from the proposed emissions. However, KUA failed to assess the potential effects on freshwater wetlands and related wildlife in the Chassahowitzka WA from sulfate deposition. These wetlands have a thin veneer of organic soil over a porous limestone base. As precipitation containing sulfate percolates through the soil, the organic matter in the soil may be oxidized. Such oxidation could cause erosion of the thin soil veneer. Many types of vegetation and invertebrates depend upon this veneer, and its loss would seriously alter and impair the function of the wetland ecosystem.

We are also concerned about the effect of nitrate deposition on the saltwater habitat of Chassahowitzka WA. Nitrogen has been found to be the critical limiting nutrient to algal growth and eutrophication in coastal marine waters. Nitrogen enrichment has led to nuisance algal blooms; subsequent algal die-off can result in depleted dissolved oxygen concentrations in the water. In addition, algal blooms increase the turbidity of the water, decreasing light levels to rooted aquatic plants. Shallow coastal waters are particularly vulnerable to this process. Such changes in the patterns and magnitudes of

phytoplankton production, changes in the production of rooted aquatic macrophytes, and changes in concentrations of dissolved oxygen can lead to alterations in the entire food web.

Atmospheric deposition of nitrogen, in the form of nitrates from emissions of nitrogen oxides, has been shown to be a significant source of nitrogen loading to coastal marine ecosystems, notably the Chesapeake Bay. Recently, atmospheric deposition of nitrogen to the Apalachicola River watershed in northern Florida was found to be sufficient to account for essentially all the dissolved nitrate and ammonium and total organic nitrogen flow in the river. The Apalachicola River empties into the Apalachicola Bay, where it is likely that these nitrogen compounds cause nutrient enrichment of the phytoplankton, with its associated problems of turbidity and decreased dissolved oxygen. Similar processes may be occurring in the Chassahowitzka WA ecosystem.

We do not expect KUA to quantify, or evaluate the impacts of, sulfate and nitrate deposition in the Chassahowitzka WA. However, in the near future, the Interagency Working Group on Air Quality Modeling (IWAQM) will be releasing the revised MESOPUFF II model. This version will have the capability to calculate nitrate and sulfate deposition mass, as well as ground level concentrations. At that time, we will request that new sources which have a significant concentration impact in a Class I area perform cumulative modeling analyses to calculate both deposition and concentration at the respective Class I areas. In addition, such sources will be expected to perform an Air Quality Related Values Analysis based on the results of the deposition modeling. Applicants can contact our Air Quality office in Denver for guidance on the deposition modeling.

We appreciate your continued cooperation in requiring applicants to adequately assess the impacts of new emissions on the resources in our Class I areas. If you have any questions regarding this matter, please contact Ellen Porter of our Air Quality office in Denver at (303) 969-2071.

Sincerely,

James W. Pulliam, Jr.
Regional Director

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

bcc:
FWS-REG. 4: AQC
FWS-REG. 6: Ty Berry
CHAS: Refuge Manager
AQD-DEN: Ellen Porter
National Park Service - AIR
P.O. Box 25287
Denver, CO 80225

A.K. (BEN) SHARMA, P.E.
DIRECTOR OF POWER SUPPLY



P.O. BOX 423219 KISSIMMEE, FLORIDA 34742-3219
(407) 933-7777 • FAX: (407) 847-0787

December 15, 1992

*Partly
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give to person
Shank
Denton
12/17*

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

RE: DER File No. AC 49-205703
PSD-FL-182
Osceola County

Dear Mr. Lewis:

This is in reference to the proposed DER permit in favor of KUA to construct a 40 MW simple cycle combustion turbine and a 120 MW combined cycle combustion turbine. Copy of the proposed permit was transmitted to us from the offices of Mr. C. H. Fancy, P.E. on November 18, 1992.

Black & Veatch, KUA's retained consultants for the project, have reviewed the draft permit and have compiled the comments on behalf of KUA in the form of a letter report which is addressed to myself. A copy of the review comments is attached herewith.

We hope our comments will receive favorable consideration by DER at the time of issuing the final permit.

If you have any questions, please contact me at (407) 933-7777 Ext. 1232 or David Lefebvre of Black & Veatch at (913) 339-2164.

Sincerely,

A. K. Sharma

A. K. (Ben) Sharma, P.E.
Director of Power Supply

Ass

Enclosure

cc: Mr. C. H. Fancy, P.E., w/encl.
James C. Welsh, w/encl.
Mr. David Lefebvre, w/o encl.

[Handwritten initials]

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U. S. ENVIRONMENTAL PROTECTION AGENCY
Region IV

Air, Pesticides & Toxics Management Division

DATE:

Dec 17, 1992

TO:

Preston Lewis

PHONE:

904-488-1344

FAX:

904-922-6979

FROM:

Scott Davis

SUBJECT:

Kissimmee Utility

ASD Prelim Det.

PAGES:

3

(including cover sheet)



BLACK & VEATCH

8400 Ward Parkway, P.O. Box No. 8405, Kansas City, Missouri 64114, (913) 339-2000

B&V Project No. 17645.130
B&V File No. 32.0402
KUA Project G14001

December 9, 1992

Mr. A. K. Sharma
Director of Power Supply
Kissimmee Utility Authority
1701 West Carroll Street
Kissimmee, Florida 34741

Dear Mr. Sharma:

On behalf of Kissimmee Utility Authority (KUA), Black & Veatch has reviewed the November 18, 1992, Florida Department of Environmental Regulation (FDER) document, Technical Evaluation and Preliminary Determination for the Kissimmee Utility Authority Cane Island Project. Black & Veatch has the following comments on the aforementioned document.

SYNOPSIS OF APPLICATION

1. The first paragraph of page 3 of 9 of the Synopsis currently states:

"... of lead; 0.002 TPY of mercury; and 2 TPY of sulfuric acid mist if operated at 8,260 hours per year on gas and 500 hours per year on fuel oil (0.05% S) for each turbine fired at base load for ISO ambient conditions. If the gas pipeline is not in place by 1995, then the CTs will operate a maximum of 1000 hours per year on fuel oil. Emission increases in this situation will be 635 TPY of NO_x, 36 TPY of SO₂, 435 TPY of CO, 76 TPY of PM, 17 TPY of VOC, 0.002 TPY of Be, 0.02 TPY of Pb, 0.004 TPY of Hg, 4 TPY of H₂SO₄."

This paragraph should be modified to read:

"... of lead; 0.002 TPY of mercury; and 2 TPY of sulfuric acid mist for **both turbines if each turbine is** operated at 8,260 hours per year on gas and 500 hours per year on fuel oil (0.05% S) at base load

December 9, 1992

operation at ISO ambient conditions. If the gas pipeline is not in place by 1995, then the CTs will operate a maximum of 1000 hours per year **per turbine** on fuel oil. Emission increases in this situation will be 635 TPY of NO_x, 36 TPY of SO₂, 435 TPY of CO, 76 TPY of PM, 17 TPY of VOC, 0.002 TPY of Be, 0.02 TPY of Pb, 0.004 TPY of Hg, 4 TPY of H₂SO₄ **for both turbines.**"

2. The second sentence of the second paragraph on page 3 of 9 of the Synopsis currently states:

"The first unit is planned for initial operation on or about October, 1993, followed by the second unit planned for initial operation on or about January, 1995."

This sentence should be modified to state:

"The first unit is planned for initial operation on or **after** October, 1993, followed by the second unit planned for initial operation on or **after** January, 1995."

3. The last sentence of the second paragraph on page 3 of 9 of the Synopsis currently states:

"The CCCT will intermittently operate in a simple cycle (or by-pass mode) when the HRSG is down for maintenance and/or repair."

This sentence should be modified to state:

"The CCCT will intermittently operate in a simple cycle **mode** when the **HRSG or steam turbine** is down for maintenance and/or repair."

4. The second sentence of the fourth paragraph on page 4 of 9 currently states:

"The emission rates of these chemicals shall not create ambient concentrations greater than the No-Threat-Level (NTL) listed in the Department's air toxic list."

December 9, 1992

This sentence should be modified to state:

"The emission rates of these chemicals shall not create ambient concentrations greater than the No-Threat-Level (NTL) listed in the Department's air toxic list **current as of November 18, 1992.**"

5. The last line on page 6 of 9 currently states:

"intervals from 5 to 15 kilometers, and (5) 20 and 25 kilometers."

For clarity, this line should be revised to state:

"intervals from 5 to 15 kilometers, and (5) rings placed at 20 and 25 kilometers."

FDER PERMIT NUMBER: AC 49-205703, PSD-FL-182 FOR THE KUA 120 MW COMBINED CYCLE TURBINE AND 40 MW SIMPLE CYCLE TURBINE.

1. The expiration date on page 1 of 10 currently is given as December 30, 1994.

The expiration date should be corrected to **March 31, 1995**, as the second turbine installation is expected to begin operations on or after January 1, 1995.

2. Specific condition number 8 on page 6 of 10 currently states:

"Compliance with the NO_x, SO₂, CO, PM, PM₁₀, and VOC standards shall be determined (while operating at 95-100% of the permitted maximum heat input rate) within 180 days"

This condition should be modified to the following because of the fluctuation of heat input rates with ambient temperatures:

"Compliance with the NO_x, SO₂, CO, PM, PM₁₀, and VOC standards shall be determined (while operating at 95-100% of the permitted maximum heat input rate **corresponding to the particular ambient conditions**) within 180 days"

December 9, 1992

3. On page 6 of 10, the description of reference Method 8 states:

"Method 8 Determination of Sulfuric Acid Mist from Stationary Sources"

This description should be modified to state:

"Method 8 Determination of Sulfuric Acid Mist *and Sulfur Dioxide Emissions* from Stationary Sources (*for fuel oil firing only*)"

4. Method 10 on page 6 of 10 currently states:

"Method 10 Determination of Carbon Monoxide Emission from Stationary Sources"

This description should be corrected to read:

"Method 10 Determination of Carbon Monoxide *Emissions* from Stationary Sources"

5. Specific condition number 10 on page 7 of 10 have the following words deleted. ". . . and ASTM D3246-81 for sulfur content of gaseous fuels."

6. Specific permit conditions numbers 16, 17, and 18 on page 8 of 10 currently state:

"16. The permittee shall install, calibrate, maintain, and operate a continuous emission monitor in each stack to measure and record the nitrogen oxide emissions from each source. The continuous emission monitor must comply with 40 CFR, Appendix B, Performance Specification 2 (July 1, 1992)."

"17. A continuous monitoring system shall be installed to monitor and record the fuel consumption on each unit. While water injection is being 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. The system shall meet the requirements of 40 Part 60, Subpart GG."

December 9, 1992

"18. Literature on equipment selected shall be submitted as it becomes available. A CT-specific graph of the relationship between NO_x emissions and water injection and also another of ambient temperatures and heat inputs to the CT shall be submitted to the DER's Central District office and the Bureau of Air Regulation."

Although Condition 17 is required under Subpart GG of NSPS, this requirement accomplishes the identical purpose as Condition 16. In addition, alternative methods of monitoring are allowed under Subpart A of the NSPS.

Therefore, these three permit conditions should be combined into the following single permit condition:

"16. The permittee shall ***comply with one of the two following requirements:*** (a) install, calibrate, maintain, and operate a continuous emission monitor in each stack to measure and record the nitrogen oxide emissions from each source. The continuous emission monitor must comply with 40 CFR, Appendix B, Performance Specification 2 (July 1, 1992). (b) ***An alternative method of monitoring NO_x*** shall be installed to ***continuously*** monitor and record the fuel consumption on each unit. While water injection is being 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. The system shall meet the requirements of 40 Part 60, Subpart GG. ***In addition***, literature on equipment selected shall be submitted as it becomes available. A CT-specific graph of the relationship between NO_x emissions and water injection and also another of ambient temperatures and heat inputs to the CT shall be submitted to the DER's Central District office and the Bureau of Air Regulation."

Table 1 - KISSIMMEE UTILITY AUTHORITY - AC49-205703 (PSD-FL-182) 40 MW SIMPLE CYCLE GAS TURBINE - ALLOWANCE EMISSION RATES.

The following corrections should be made to the table to reflect the BACT proposed in the PSD permit application.

As stated in the PSD permit application, the turbine vendor has not yet been selected for the combined cycle unit. General Electric has indicated that they

December 9, 1992

are currently developing technology capable of achieving 9 ppmvd NO_x for their frame turbines (e.g., 7EA). Other turbine vendors have indicated that technology capable of achieving 15 ppmvd NO_x on their machines may not be available in the time frame requested by the FDER (12/31/97). Therefore, by applying this permit condition on the combined cycle combustion turbine, FDER is giving GE a substantial competitive advantage in the CTG procurement since other CTG vendors' bids must be evaluated with the cost of an SCR system to control NO_x emissions to 15 ppm. KUA's cost of such an SCR system is estimated to be about \$5.6 million. Therefore, the condition of 15 ppmvd NO_x for the combined cycle combustion turbine should be removed from the permit conditions.

For the LM6000, GE sent the FDER a letter stating, "The NO_x emission control level that is currently commercially available on the GE LM6000 gas turbine is 25 ppmvd when firing natural gas, with either steam or water injection. Development programs using both steam/water injection and dry low NO_x combustors are in place to provide lower NO_x capability in the future. It is expected that the LM6000 dry low NO_x (DLN) combustor will be commercially available at 25 ppmvd, when firing natural gas, by the end of 1994. The goal of the GE LM6000 DLN development program is a NO_x emission control level of 9 ppm when firing natural gas, but no date has as yet been established for commercial availability at that level." Although some manufacturers have indicated that they are initiating development programs for dry low NO_x systems capable of meeting 15 ppm, they have not guaranteed that these systems can or will be developed. In addition, even if these systems are developed, the manufacturers have not guaranteed commercially available dates. Because no commercial date is confirmed, the LM6000 will most likely not be able to meet the 15 ppmvd NO_x limit proposed by the FDER by 12/31/97. Therefore, this condition should be removed from the permit conditions.

Due to the period of time necessary to purchase and install a retrofit burner on the combustion turbine, this low NO_x technology for the turbines must be commercially available prior to 12/31/97 in order to comply with the FDER's 12/31/97 compliance deadline.

The amount of time needed to retrofit the units is manufacturer dependant and is unknown because of the currently developing technology. The turbine manufacturer's have not indicated that this technology is currently available for either the LM6000 or other frame machines. Therefore, by applying the

December 9, 1992

15 ppmvd NO_x limitation to the combustion turbines, the FDER has adopted a policy of selecting best available control technology based upon control technologies which potentially could be available at some date after the commercial operation date of the unit. Per 40 CFR 52.21, BACT is defined as an emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under Act which would be emitted from any proposed major stationary source or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant. From this definition, BACT determinations are based on technologies achievable/available today, not at some future date. Therefore, the BACT determinations for the Cane Island Project should not be based upon future technology that would require retrofitting of the unit.

- The CO emission for gas combustion is currently stated as 10 ppmvd. The correct CO emission rate for gas combustion is **30 ppmvd**.
- The CO emission for oil combustion based on 500 and 1000 hours per year operating time is currently stated as 20 ppmvd. Similarly, the CO emission based on continuous oil burning is given as 20 ppmvd. The correct CO emission for both oil combustion cases is **63 ppmvd**.
- The PM₁₀ emission for natural gas combustion is currently stated as 0.0100 lb/MMBtu. The correct PM₁₀ emission for natural gas combustion is **0.0245 lb/MMBtu**. This emission rate was calculated based on the PM₁₀ emission rate at ISO conditions and the maximum heat input permitted at ISO conditions.
- The PM₁₀ emission rate for oil combustion is currently given as 0.0100 lb/MMBtu. The correct PM₁₀ emission for oil combustion is **0.0323 lb/MMBtu**. The calculation of this limit was calculated similarly to that above.

December 9, 1992

- The opacity emission rate for oil combustion currently states 10% opacity. This emission rate should refer to footnote D and therefore, should be stated as **10% opacity^D**.
- The SO₂ and H₂ SO₄ emission rates from gas combustion should be changed to **nil (< < 40 tpy) lb/MMBtu**.
- The Be emission for oil combustion is currently stated as 2.0 x 10⁻⁶ lb/MMBtu. The correct Be emission for oil combustion is **2.5 x 10⁻⁶ lb/MMBtu**.

**Table 2 - KISSIMMEE UTILITY AUTHORITY - AC49 - 2,05703 IPSD-FL-182)
120 MW COMBINED CYCLE GAS TURBINE - ALLOWANCE EMISSION
RATES.**

The following corrections should be made to the table to reflect the BACT proposed in the PSD permit application.

- See discussion of NO_x BACT listed under Table 1 for the 40 MW simple cycle gas turbine.
- The CO emission rates given in lb/hr and TPY are correct as listed. However, the CO emission rate for natural gas firing using a dry low NO_x combustor should be revised to 20 ppm. Although a quiet combustor is capable of meeting the 10 ppm limit, a dry low NO_x may not be able to. The 20 ppmvd rate was inadvertently omitted from the PSD permit application for the dry low NO_x combustor. In addition, the reference to footnote D should be omitted, as it pertains to capacity.
- The PM₁₀ emission rate for oil combustion is currently given as 0.0100 lb/MMBtu. This emission rate should be corrected to **0.0162 lb/MMBtu**. This emission rate was calculated based on the PM₁₀ emissions and maximum heat input permitted under ISO conditions.
- The opacity emission rate for oil combustion is currently stated as 10% opacity. This emission rate should refer to footnote D, and therefore should be corrected to state **10% opacity^D**.

December 9, 1992

- The Be emission rate for oil combustion is currently stated as 2.0×10^{-6} lb/MMBtu. The corrected Be emission rate is **2.5×10^{-6} lb/MMBtu.**

**THE BEST AVAILABLE CONTROL TECHNOLOGY (BACT)
DETERMINATION FOR THE KISSIMMEE UTILITY AUTHORITY IN
OSCEOLA COUNTY.**

1. The last sentence of the second paragraph on page 1 of BACT determination currently states:

"The applicant has indicated the maximum annual tonnage of regulated air pollutants emitted from the facility based on 100 percent capacity factor and type of fuel fired to be as follows:"

This sentence should be changed to read as follows:

"The applicant has indicated the maximum annual tonnage of regulated air pollutants emitted from the facility based on 100 percent capacity factor, ***ISO conditions***, and type of fuel fired to be as follows:"

2. On page 3, the second sentence in the paragraph on Particulate Matter (PM/PM₁₀) currently reads as follows:

"The particulate emissions from the combustion turbine when burning natural gas and fuel oil will not exceed 0.01 lb/MMBtu."

This sentence should be corrected to the following to reflect the maximum value given in the simple cycle combustion turbine Table 1.

"The particulate emissions from the combustion turbine when burning natural gas and fuel oil will not exceed **0.0323** lb/MMBtu."

3. The second sentence of the first paragraph on page 4 of this document reads:

"The applicant has indicated that the carbon monoxide emissions from the proposed combined cycle turbine is on exhaust concentrations of 10 ppmv for natural gas firing and 20 ppmv for fuel oil firing."

December 9, 1992

This sentence should be corrected to state:

"The applicant has indicated that the carbon monoxide emissions from the proposed combined cycle turbine with a "Quiet Combustor" are **10** ppmv for natural gas firing and 20 ppmv for fuel oil firing. However, for a dry low NO_x combustor, the emission limit is 20 ppmvd on both oil and gas."

4. On page 5 of the BACT Determination, the last sentence on the page reads:

"The exhaust temperatures of the proposed simple cycle CTs for this site are expected to be in excess of 1,000 F."

On page 6, in the first full paragraph, the FDER comments:

"...the applicant has rejected using SCR on the simple cycle CT because of technical infeasibility, economic and environmental impact for the simple cycle."

However, as stated in the PSD application, the simple cycle CTs have exhaust temperatures in the 600 F to 800 F range. Therefore, ***the applicant rejected using SCR on the simple cycle CTs because of economic and environmental impacts, not because of technical infeasibility.***

5. On page 8, the last sentence of the first full paragraph currently reads:

"Therefore, since this technology will be available by 1997, the Department has accepted the water injection (LM6000), low NO_x burner design (PG7110EA), and the"

This sentence should be corrected to state:

"Therefore, since this technology will be available by 1997, the Department has accepted the water injection (LM6000), low NO_x burner design (***PG7111EA***), and the"

6. On page 9, the last sentence of the third paragraph under NO_x Control currently states:

"Therefore, the Department has determined to revise and lower the allowable BACT limit for this project no later than 12/31/97 as follows:"

December 9, 1992

This sentence should be modified to read:

"Therefore, the Department has determined ***that the following BACT will apply by 1/1/98:***"

However, as discussed on pages 5-7, BACT should not reflect technology that has not yet been developed.

7. On page 10, in the table titled 120 MW COMBINED CYCLE COMBUSTION TURBINE, the following corrections are needed:

The NO_x method of control for gas at an emission limit of 25 ppmv currently reads:

"Water Injection/Quiet Combustor or"

This statement should read as follows:

"Water Injection/Quiet Combustor or ***Dry Low NO_x Combustor***"

The first sentence of footnote (b) for this table states:

"Natural gas (8260 hours per year), Fuel oil (500 hours per year)."

This sentence should be modified to read:

"Natural gas/Fuel Oil (8260/500 hours per year), or Natural gas/fuel oil (7760/1000 hours per year)."

8. On page 11, the table titled 40 MW SIMPLE CYCLE COMBUSTION TURBINE, the first sentence in footnote (b) currently states:

This sentence should be corrected to read:

"Natural gas/Fuel Oil (8260/500 hours per year), or Natural gas/fuel oil (7760/1000 hours per year)."

Mr. A. K. Sharma

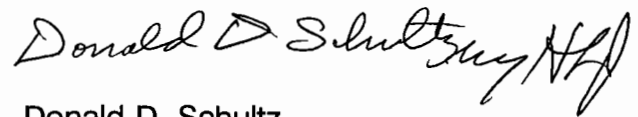
Page 12

December 9, 1992

If you have any questions concerning these comments, please call Amy Carlson (913) 339-7425 or David Lefebvre (913) 339-2164.

Very truly yours,

BLACK & VEATCH

A handwritten signature in cursive script that reads "Donald D. Schultz". The signature is written in dark ink and is positioned above the printed name.

Donald D. Schultz

cjs

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

CERTIFIED MAIL

In the Matter of an
Application for Permit by:

DER File No. AC 49-205703
PSD-FL-182
Osceola County

Kissimmee Utility Authority
1701 West Carroll Street
Kissimmee, Florida 34741

INTENT TO ISSUE

The Department of Environmental Regulation gives notice of its intent to issue a permit (copy attached) for the proposed project as detailed in the application specified above, for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, Kissimmee Utility Authority applied on June 2, 1992, to the Department of Environmental Regulation for a permit to construct a 40 MW simple cycle and a 120 MW combined cycle combustion gas turbine system facility. The facility is located near Intercession City, Osceola County, Florida.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes and Florida Administrative Code (F.A.C.) Chapters 17-2 and 17-4. The project is not exempt from permitting procedures. The Department has determined that a construction permit is required for the proposed work.

Pursuant to Section 403.815, Florida Statutes and Rule 17-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Notice of Intent to Issue Permit. The notice shall be published one time only within 30 days in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "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. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 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.

The Department will issue the permit with the attached conditions unless a petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S.

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. Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of their receipt of this intent, whichever first occurs. 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;

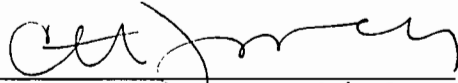
- (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
- (b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- (c) 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 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 intent. 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 intent 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.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION



C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this INTENT TO ISSUE and all copies were mailed by certified mail before the close of business on 11-18-92 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.


Clerk

11-18-92
Date

Copies furnished to:

T. A. Kaczmariski, P.E.
Charles Collins, CD
Jewell Harper, USEPA
Brian Mitchell, NPS

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 Kissimmee Utility Authority (KUA), 1701 West Carroll Street, Kissimmee, Osceola County, Florida, to construct a 40 MW simple cycle and a 120 MW combined cycle combustion gas turbine at their facility. A determination of Best Available Control Technology (BACT) was required. 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 the material facts disputed by Petitioner, if any; (e) 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 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 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, F.A.C.

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. Preston Lewis 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(s). Such requests must be submitted within 30 days of this notice.

P 062 921 922



Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sender <i>AK Sharma</i>	
Street and No. <i>Kissimmee Util. Auth.</i>	
P.O., State and ZIP Code <i>Kissimmee, FL</i>	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date <i>11-18-92</i>	
<i>AC 49-205703</i>	
<i>PSD-F1-152</i>	

PS Form 3811, July 1983 447-845

DOMESTIC RETURN RECEIPT

SENDER: Complete items 1, 2, 3 and 4.
Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. Show to whom, date and address of delivery.
2. Restricted Delivery.

3. Article Addressed to:
Mr. A-K. Sharma
Director of Power Supply
Kissimmee Utility Authority
1701 W Carroll St.
Kissimmee, FL 34741

4. Type of Service: Article Number
 Registered Insured
 Certified COD *P062 921 922*
 Express Mail

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee
*X *Velma Argueta**

6. Signature - Agent
X

7. Date of Delivery
11/20/92

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

PS Form 3800, June 1991



Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

November 18, 1992

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

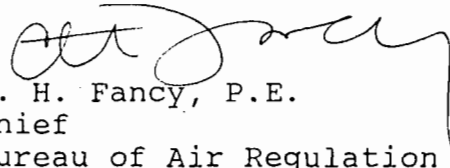
Mr. A. K. Sharma
Director of Power Supply
Kissimmee Utility Authority
1701 West Carroll Street
Kissimmee, Florida 34741

Dear Mr. Sharma:

Attached is one copy of the Technical Evaluation and Preliminary Determination and proposed permit to construct a 40 MW simple cycle combustion turbine (SCCT) and a 120 MW combined cycle combustion gas turbine (CCCT) system facility in Intercession City Florida.

Please submit any written comments you wish to have considered concerning the Department's proposed action to Mr. Preston Lewis of the Bureau of Air Regulation.

Sincerely,



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

CHF/TH/plm

Attachments

cc: T. A. Kaczmariski, P.E.
Charles Collins, CD
Jewell Harper, USEPA
Brian Mitchell, NPS



BLACK & VEATCH

8400 Ward Parkway, P.O. Box No. 8405, Kansas City, Missouri 64114, (913) 339-2000

FAX NUMBERS: 913-339-2934 913-339-2936 913-339-2939

FACSIMILE TRANSMISSION

TO: Theresa Hixon / Betty Adams B&V PROJECT: 17645
 COMPANY: Florida Department of Environmental Reg B&V PHASE: 130
 FAX NUMBER: 904-922-6979 B&V FILE: 32.0000
 TELEPHONE NUMBER: 904-488-1344
 FROM: Amy Carlson DATE: 11/5/92
 EXTENSION: 7425 LOCATION: P5C5
 NUMBER OF PAGES, INCLUDING THIS COVER SHEET: 2
 SUBJECT: Waiver

MESSAGE: Please call if you have any questions.

cc: _____ DATE OF TRANSMITTAL: _____
 _____ TIME OF TRANSMITTAL: _____
 _____ OPERATOR'S INITIALS: _____

NOTE TO RECEIVING OPERATOR: In the event transmission is not complete, please call (913) 339-7218.

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

License (Permit, Certification) Application No. PSD-EI-182 AQ49-205703

Applicant's Name: Kissimmee Utility Authority

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 20 day of November 1992.

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

David M Lefebvre
Signature

David M. Lefebvre
Name (Please Type or Print)

Technical Evaluation
and
Preliminary Determination

Kissimmee Utility Authority
Kissimmee, Osceola County, Florida

40 MW Simple Cycle Combustion Gas Turbine
120 MW Combined Cycle Combustion Gas Turbine

Permit Number: AC49-205703
PSD-FL-182

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

November 18, 1992

SYNOPSIS OF APPLICATION

I. NAME AND ADDRESS OF APPLICANT

Kissimmee Utility Authority
1701 West Carroll Street
Kissimmee, Florida 34741

II. REVIEWING AND PROCESS SCHEDULE

Date of Receipt of Application: November 15, 1991 (original application); June 2, 1992 (revised application).

Completeness Review: Department letter dated June 30, 1992.

Response to Incompleteness Letters: Company letters received on July 30, August 17, and October 8, 1992.

Application Completeness Date: August 17, 1992.

III. FACILITY INFORMATION

III.1 Facility Location

This facility is located near Intercession City, Osceola County, Florida. The UTM coordinates are Zone 17, 447.722 km East and 3127.685 km North.

III.2 Facility Identification Code (SIC)

Major Group No. 49 - Electric, Gas and Sanitary Services.

Industry Group No. 491 - Combination Electric, Gas and Other Utility Services.

Industry Group No. 4911 - Electric and Other Services Combined.

III.3 Facility Category

Kissimmee Utility Authority (KUA) proposed project near Intercession City is classified as a major emitting facility. The proposed project, construction of a 40 MW simple cycle combustion turbine (SCCT) and a 120 MW combined cycle combustion turbine (CCCT), will increase emissions by 611 tons per year (TPY) of nitrogen oxides (NO_x); 18 TPY of sulfur dioxide (SO₂); 276 TPY of carbon monoxide (CO); 73 TPY of particulate matter (PM); 16 TPY of volatile organic compounds (VOC); 0.001 TPY of beryllium; 0.01 TPY

compliance with all applicable provisions of F.A.C. Rules 17-2.240: Circumvention; 17-2.250: Excess Emissions; 17-2.660: Standards of Performance for New Stationary Sources (NSPS); 17-2.700: Stationary Point Source Emission Test Procedures; and, 17-4.130: Plant Operation-Problems.

The source shall be in compliance with the New Source Performance Standards for Gas Turbines, Subpart GG, Appendix A, which is contained in 40 CFR 60, and is adopted by reference in F.A.C. Rule 17-2.660.

VI. SOURCE IMPACT ANALYSIS

VI.1 Emission Limitations

The operation of this combined cycle system facility burning No. 2 fuel oil and natural gas will produce emissions of NO_x, SO₂, CO, sulfuric acid mist, PM, As, Fluorines (F), Be, Pb and Hg. The impact of these pollutant emissions are below the Florida ambient air quality standards (AAQS) and/or the acceptable ambient concentration levels (AAC). Table 1 and 2 list each contaminant and its maximum expected emission rates for each type of combustion gas turbine.

VI.2 Air Toxics Evaluation

The operation of the sources will produce emissions of chemical compounds that may be toxic in high concentrations. The emission rates of these chemicals shall not create ambient concentrations greater than the No-Threat-Level (NTL) listed in the Department's air toxic list. This project is in compliance with the Department's air toxic guidelines.

VI.3 Air Quality Analysis

a. Introduction

The operation of the proposed facility will result in emissions increases which are projected to be greater than the PSD significant emission rates for the following pollutants: NO_x, SO₂, PM, PM₁₀, Be, CO, VOC, and H₂SO₄ mist. Therefore, the project is subject to the PSD NSR requirements contained in F.A.C. Rule 17-2.500(5) for these pollutants. Part of these requirements is an air quality impact analysis for these pollutants which includes the following:

- An analysis of existing air quality;
- A PSD increment analysis (for SO₂, PM, PM₁₀, and NO₂);
- An ambient Air Quality Standards analysis (AAQS);
- An analysis of impacts on soils, vegetation, visibility

of lead; 0.002 TPY of mercury; and 2 TPY of sulfuric acid mist if operated at 8,260 hours per year on gas and 500 hours per year on fuel oil (0.05% S) for each turbine fired at base load for ISO ambient conditions. If the gas pipeline extension is not in place by 1995, then the CTs will operate a maximum of 1000 hours per year on fuel oil. Emission increases in this situation will be 635 TPY of NO_x, 36 TPY of SO₂, 435 TPY of CO, 76 TPY of PM, 17 TPY of VOC, 0.002 TPY of Be, 0.02 TPY of Pb, 0.004 TPY of Hg, 4 TPY of H₂SO₄.

IV. PROJECT DESCRIPTION

Kissimmee Utility Authority proposes to operate two combustion gas turbines: 1) a 40 MW SCCT, GE LM6000, and 2) a 120 MW CCCT consisting of one 80 MW combustion turbine (CT), GE PG7111EA, one 40 MW steam turbine (ST), and one unfired heat recovery steam generator (HRSG) and ancillary equipment. The first unit is planned for initial operation on or about October, 1993, followed by the second unit planned for initial operation on or about January, 1995. The CTs will have the capability to fire either natural gas or No. 2 fuel oil. Water injection or low NO_x combustors will be used to control nitrogen oxides (NO_x) emissions and low sulfur fuel (0.05% S) will be fired to control sulfur dioxide (SO₂) emissions. The CCCT will intermittently operate in a simple cycle (or by-pass mode) when the HRSG is down for maintenance and/or repair.

V. RULE APPLICABILITY

The proposed project is subject to preconstruction review under the provisions of Chapter 403, Florida Statutes, Chapters 17-2 and 17-4, Florida Administrative Code (F.A.C.), and 40 CFR (July, 1990 version).

The plant is located in an area designated attainment for all criteria pollutants in accordance with F.A.C. Rule 17-2.420.

The proposed project will be reviewed under F.A.C. Rule 17-2.500(5), New Source Review (NSR) for Prevention of Significant Deterioration (PSD), because it will be a major new stationary source. This review consists of a determination of Best Available Control Technology (BACT) and unless otherwise exempted, an analysis of the air quality impact of the increased emissions. The review also includes an analysis of the project's impacts on soils, vegetation and visibility; along with air quality impacts resulting from associated commercial, residential and industrial growth.

The proposed source shall be in compliance with all applicable provisions of F.A.C. Chapters 17-2 and 17-4 and the 40 CFR (July, 1992 version). The proposed source shall be in

satisfy the ambient monitoring analysis requirement. Background SO₂ values of 63 ug/m³, 3-hr average; 19 ug/m³, 24-hr average; and 5 ug/m³, annual average, were based on these data. This site is located 38.6 km away from the project.

c. Modeling Method

The EPA-approved Industrial Source Complex Short-Term (ISCST) dispersion model was used by the applicant to predict the impact of the proposed project on the surrounding ambient air. All recommended EPA default options were used. Downwash parameters were used because the stacks were less than the good engineering practice (GEP) stack height. Five years of sequential hourly surface and mixing depth data from the Orlando/Tampa, Florida National Service (NWS) stations collected during 1982 through 1986 were used in the model. Since five years of data were used, the highest-second-high (HSH) short-term predicted concentrations are compared with the appropriate ambient air quality standards or PSD increments. For the annual averages, the highest predicted yearly average was compared with the standards. The highest impacts were used for comparison with the PSD significant impact levels.

d. Modeling Results

The applicant first evaluated the potential increase in ambient ground-level concentrations associated with the project to determine if these predicted ambient concentration increases would be greater than specified PSD significant impact levels for SO₂, CO, NO_x, PM and PM₁₀. This evaluation was based on the proposed SCCT unit operating at 100% load and the proposed CCCT unit operating at load conditions of peak, 100, 75, 50 and 25 percent. The modeling was performed using the highest pollutant emissions and lowest stack exit temperatures at 20°F design condition coupled with the lowest exit gas flow rates at 102°F design condition to maximize predicted impacts. The applicant modeled emissions based on the use of fuel oil with a maximum sulfur content of 0.3%. However, the applicant will use a cleaner fuel oil with a maximum of 0.05% sulfur content in order to comply with PSD Class I increments. All significant impact, NAAQS, and PSD Class II increment analyses are based on the use of 0.3% sulfur fuel oil; therefore, the modeled results show higher impacts than actually expected and the results are conservative. The maximum predicted concentrations occur for different load conditions based upon which pollutant is being considered. Dispersion modeling was performed with polar receptors placed along the 36 standard radial directions (10 degrees apart) surrounding the proposed units at the following downwind distances: (1) intervals of 100 meters from 200 to 1,500 meters; (2) intervals of 250 meters from 1,500 to 3,000 meters; (3) 500 meter intervals from 3 to 5 kilometers; (4) 1 kilometer intervals from 5 to 15 kilometers, and (5) 20 and 25 kilometers.

- and growth-related air quality impacts; and,
- A Good Engineering Practice (GEP) stack height determination.

The analysis of existing air quality generally relies on preconstruction monitoring data collected in accordance with EPA-approved methods. The PSD increment and AAQS analyses are based on air quality dispersion modeling completed in accordance with EPA guidelines.

Based on these required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or contribute to a violation of any PSD increment or ambient air quality standard. A brief description of the modeling methods used and results of the required analyses follow. A more complete description is contained in the permit application on file.

b. Analysis of the Existing Air Quality

Preconstruction ambient air quality monitoring may be required for pollutants subject to PSD review. However, an exemption to the monitoring requirement can be obtained if the maximum air quality impact resulting from the projected emissions increase, as determined through air quality modeling, is less than a pollutant-specific de minimus concentration. The predicted maximum concentration increase for each pollutant subject to PSD (NSR) is given below:

	SO ₂	TSP & PM ₁₀	NO ₂	CO	Be
PSD de minimus Concentra. (ug/m ³)	13	10	14	575	.001
Averaging Time	24-hr	24-hr	Annual	8-hr	24-hr
Maximum Predicted Impact (ug/m ³)	73.6	4.8	0.7	473.7	0.00059

There are no monitoring de minimus concentrations for H₂SO₄ mist and VOC emissions. As shown above, the predicted impacts for TSP/PM₁₀, NO₂, CO, and Be are all less than the corresponding de minimus concentrations; therefore, no preconstruction monitoring is required for these pollutants. Since the predicted SO₂ impact is greater than the de minimus concentration, a preconstruction ambient monitoring analysis would generally be required for SO₂. However, the Department determined that the use of existing FDER air quality monitoring data collected in 1991 from the Winter Park SO₂ monitoring site in Orange County would be appropriate to

The nearest PSD Class I area is the Chassahowitzka National Wilderness Area located 115 km from the facility. The predicted impact of the proposed project on this area was evaluated by using the long range transport model Mesopuff II to predict maximum increment consumptions by the source alone and by comparing these predicted values to the appropriate recommended significance levels to determine whether further modeling was necessary. The significance levels used by the Department were the more stringent National Park Service (NPS) recommended levels. The predicted maximum NO₂ increment consumption was less than the significance level. Therefore, no further modeling for NO₂ was required. In addition, the predicted maximum SO₂ annual average increment consumption by the source alone was also below the NPS significance level. However, the predicted maximum SO₂ 24-hour and 3-hour concentrations from the project alone were predicted to be greater than the NPS levels when 0.3% sulfur fuel oil was used. The applicant further evaluated the SO₂ short term impacts on the Class I area by using Mesopuff II and modeling the inventory of all PSD increment consuming and expanding sources on days when the predicted impacts from the project were greater than significant. The results of the modeling for at least one period showed that cumulative source impacts would be above Class I PSD increments. Therefore, the project's fuel sulfur content was limited to 0.05% so that all project impacts would be below the NPS significance levels during all periods and at all PSD Class I receptors.

Sulfuric acid mist and beryllium are noncriteria pollutants, which means that neither national AAQS nor PSD Significant Impacts have been defined for these pollutants. However, the Department does have a draft Air Toxics Permitting Strategy, which defines no threat levels for these pollutants. The Department and the applicant have used the same modeling procedure described above for the screening analysis to evaluate the maximum increase in ground level concentration of these pollutants for comparison with the no-threat levels. The results of this analysis are shown below:

<u>Avg. Time</u>	<u>H₂SO₄ Mist 24-hr</u>	<u>Be Annual</u>
No Threat-Level (ug/m ³)	2.38	0.00042
Max. Concentration Increase	1.35	0.000011

All of these values are less than their respective no-threat levels.

In addition, rectangular receptors were placed in 250 meter intervals along the property boundary where public access is restricted. The results of this modeling presented below show that the increases in ambient ground-level concentrations for all averaging times are less than the PSD significant impact levels for CO, NO_x, PM and PM₁₀.

Avg. Time	SO ₂			NO ₂	CO		PM and PM ₁₀	
	Annual	3-hr	24-hr	Annual	1-hr	8-hr	Ann.	24-hr
PSD Sign. Level (ug/m ³)	1.0	25.0	5.0	1.0	2000	500	1.0	5.0
Ambient Conc. Increase (ug/m ³)	1.4	187.1	73.6	0.7	1675.8	473.7	0.1	4.8

Therefore, further dispersion modeling for comparison with AAQS and PSD increment consumption were not required for CO, NO_x, PM and PM₁₀. However, the results also show that the increases in maximum ambient ground level concentrations for all averaging times for SO₂ were greater than the PSD significant impact levels, thus requiring the applicant to do a full impact analysis for SO₂. The significant impact area for the facility was determined to be 20 km; therefore, all sources within 70 km of the facility were evaluated by the applicant. The results of these analyses for SO₂ and their comparison with the appropriate standards and increments are summarized in the following tables. The tables show that the maximum predicted SO₂ concentrations are all less than the appropriate AAQS and PSD increments.

AAQS Analysis (all values in ug/m³)

<u>Avg. Time</u>	<u>Annual</u>	<u>3-hr</u>	<u>24-hr</u>
Maximum Predicted Concentration	19.9	355.7	97.6
Includes Background Value of:	5	63	19
AAQS	60	1300	260

Cumulative PSD Class II
 Increment Analysis (all values in ug/m³)

<u>Avg. Time</u>	<u>Annual</u>	<u>3-hr</u>	<u>24-hr</u>
Max. Predicted Consumption Conc.	3.6	130.1	48.6
Increment	20	512	91

e. Additional Impacts Analysis

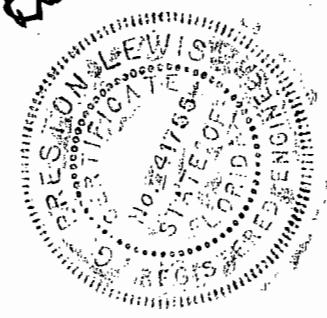
A Level-1 screening analysis using the EPA model, VISCREEN was used to determine any potential adverse visibility impacts on the Class I Chassahowitzka National Wilderness Area. Based on this analysis, the maximum predicted visual impacts due to the proposed project are less than the screening criteria both inside and outside the Class I area. A comprehensive air quality related values (AQRV) analysis for this Class I area was performed by the applicant.

In addition, the maximum predicted concentrations from NOx, CO, SO₂, PM and PM₁₀ are predicted to be less than the AAQS, including the national secondary standards designed to protect public welfare-related values. As such, no harmful effects on soil and vegetation are expected in the area of the project. Also, the proposed modification will not significantly change employment, population, housing or commercial/industrial development in the area to the extent that a significant air quality impact will result.

VII. CONCLUSION

Based on the information provided by Kissimmee Utility Authority, the Department has reasonable assurance that the proposed installation of the 120 MW CCCT and the 40 MW SCCT, as described in this evaluation, and subject to the conditions proposed herein, will not cause or contribute to a violation of any air quality standard, PSD increment, or any other technical provision of Chapter 17-2 of the Florida Administrative Code.

[Handwritten Signature]
#47752



A circular professional seal for Donald Lewis, a Professional Engineer in the State of Florida. The seal contains the text: "DONALD LEWIS", "PROFESSIONAL ENGINEER", "STATE OF FLORIDA", "LICENSE NO. 241766", and "REGISTERED PROFESSIONAL ENGINEER".



BLACK & VEATCH

8400 Ward Parkway, P.O. Box No. 8405, Kansas City, Missouri 64114, (913) 339-2000

Kissimmee Utility Authority
Cane Island Combustion Turbine Project

B&V Project 17645.130
B&V File 32.0000
October 7, 1992

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

RECEIVED

OCT 8 1992

Bureau of
Air Regulation

Subject: PSD Permit Application
Supplemental Emissions Data

Attention: Mr. C. H. Fancy, P.E.

Gentlemen:

Enclosed are the emissions data for the Cane Island Combustion Turbine project as requested by Theresa Heron of your office. Specifically, the emissions data for the simple and combined cycle turbines operating at ISO ambient conditions under various fuel use scenarios are included. Theresa also requested that the project site's latitude and longitude be provided. The site latitude and longitude are given below.

Site latitude: 28° 16' 40"
Site longitude: 81° 30' 32"

If you have additional questions regarding the emission and stack parameters for this project, please call me at (913) 339-2164 or Amy Carlson at (913) 339-7425.

Very truly yours,

BLACK & VEATCH

David M. Lefebvre

alc
Enclosure

cc: Mr. Ben Sharma, Kissimmee Utility Authority

J. Heron
C. Holladay
C. Collins, CD Jot
G. Harper, EPA
B. Mitchell, NPS

				GE 7EA CCCT (25 ppm NOx w/ Quiet Combustor and Water Injection)				
POLLUTANT	FUEL	GE LM6000 SCCT		-----				
				PEAK LOAD	100% LOAD	75% LOAD	50% LOAD	25% LOAD
SO2	GAS	lb/h	nil	nil	nil	nil	nil	nil
		hr/yr	8760	8760	8760	8760	8760	8760
		ton/yr	0.0	0.0	0.0	0.0	0.0	0.0
	FUEL OIL	lb/h	20	56	52	40	30	20
		hr/yr	8760	8760	8760	8760	8760	8760
		tons/yr	87.6	245.3	227.8	175.2	131.4	87.6
	COMBINED (prior to 1995)	GAS hr/yr	7760					
		OIL hr/yr	1000		N/A			
		tons/yr	10.0					
	(after 1995 w/ expansion)	GAS hr/yr	8260	8260	8260	8260	8260	8260
		OIL hr/yr	500	500	500	500	500	500
		tons/yr	5.0	14.0	13.0	10.0	7.5	5.0
(after 1995 w/o expansion)	GAS hr/yr	7760	7760	7760	7760	7760	7760	
	OIL hr/yr	1000	1000	1000	1000	1000	1000	
	tons/yr	10.0	28.0	26.0	20.0	15.0	10.0	
NOx	GAS	lb/h	36	106	98	76	56	95
		hr/yr	8760	8760	8760	8760	8760	
		ton/yr	157.7	464.3	429.2	332.9	245.3	416.1
	FUEL OIL	lb/h	63	183	168	131	97	141
		hr/yr	8760	8760	8760	8760	8760	8760
		tons/yr	275.9	801.5	735.8	573.8	424.9	617.6
	COMBINED (prior to 1995)	GAS hr/yr	7760					
		OIL hr/yr	1000		N/A			
		tons/yr	171.2					
	(after 1995 w/ expansion)	GAS hr/yr	8260	8260	8260	8260	8260	8260
		OIL hr/yr	500	500	500	500	500	500
		tons/yr	164.4	483.5	446.7	346.6	255.5	427.6
(after 1995 w/o expansion)	GAS hr/yr	7760	7760	7760	7760	7760	7760	
	OIL hr/yr	1000	1000	1000	1000	1000	1000	
	tons/yr	171.2	502.8	464.2	360.4	265.8	439.1	
PARTICULATES	GAS	lb/h	9	5	5	5	5	5
		hr/yr	8760	8760	8760	8760	8760	8760
		ton/yr	39.4	21.9	21.9	21.9	21.9	21.9
	FUEL OIL	lb/h	12	15	15	15	15	15
		hr/yr	8760	8760	8760	8760	8760	8760
		tons/yr	52.6	65.7	65.7	65.7	65.7	65.7
	COMBINED (prior to 1995)	GAS hr/yr	7760					
		OIL hr/yr	1000		N/A			
		tons/yr	40.9					
	(after 1995 w/ expansion)	GAS hr/yr	8260	8260	8260	8260	8260	8260
		OIL hr/yr	500	500	500	500	500	500
		tons/yr	40.2	24.4	24.4	24.4	24.4	24.4
(after 1995 w/o expansion)	GAS hr/yr	7760	7760	7760	7760	7760	7760	
	OIL hr/yr	1000	1000	1000	1000	1000	1000	
	tons/yr	40.9	26.9	26.9	26.9	26.9	26.9	

GE 7EA CCCT (25 ppm NOx w/ Quiet
Combustor and Water Injection)

POLLUTANT	FUEL	GE LM6000		GE 7EA CCCT (25 ppm NOx w/ Quiet Combustor and Water Injection)				
		SCCT		PEAK LOAD	100% LOAD	75% LOAD	50% LOAD	25% LOAD
VOC	GAS	1b/h	1.4	2	2	45	86	NA
		hr/yr	8760	8760	8760	8760	8760	
		ton/yr	6.1	8.8	8.8	197.1	376.7	NA
	FUEL OIL	1b/h	3	5	5	5	5	4
		hr/yr	8760	8760	8760	8760	8760	8760
		tons/yr	13.1	21.9	21.9	21.9	21.9	17.5
	COMBINED (prior to 1995)	GAS hr/yr	7760	N/A				
		OIL hr/yr	1000	N/A				
		tons/yr	6.9	N/A				
	COMBINED (after 1995 w/ expansion)	GAS hr/yr	8260	8260	8260	8260	8260	8260
		OIL hr/yr	500	500	500	500	500	500
		tons/yr	6.5	9.5	9.5	187.1	356.4	NA
COMBINED (after 1995 w/o expansion)	GAS hr/yr	7760	7760	7760	7760	7760	7760	
	OIL hr/yr	1000	1000	1000	1000	1000	1000	
	tons/yr	6.9	10.3	10.3	177.1	336.2	NA	
CO	GAS	1b/h	40	21	21	924	1602	64
		hr/yr	8760	8760	8760	8760	8760	
		ton/yr	175.2	92.0	92.0	4,047.1	7,016.8	280.3
	FUEL OIL	1b/h	76	21	22	120	309	27
		hr/yr	8760	8760	8760	8760	8760	8760
		tons/yr	332.9	92.0	96.4	525.6	1,353.4	118.3
	COMBINED (prior to 1995)	GAS hr/yr	7760	N/A				
		OIL hr/yr	1000	N/A				
		tons/yr	193.2	N/A				
	COMBINED (after 1995 w/ expansion)	GAS hr/yr	8260	8260	8260	8260	8260	8260
		OIL hr/yr	500	500	500	500	500	500
		tons/yr	184.2	92.0	92.2	3,846.1	6,693.5	271.1
COMBINED (after 1995 w/o expansion)	GAS hr/yr	7760	7760	7760	7760	7760	7760	
	OIL hr/yr	1000	1000	1000	1000	1000	1000	
	tons/yr	193.2	92.0	92.5	3,645.1	6,370.3	261.8	

KISSIMMEE - CANE ISLAND
ISO COMBUSTION TURBINE EMISSIONS

B&V PROJECT 17645.130
10/07/92

POLLUTANT	FUEL		GE 7EA CCCT (25 ppm NOx with Dry Low NOx I Combustor)					GE 7EA CCCT (15 ppm NOx with Dry Low NOx II Combustor)				
			PEAK LOAD	100% LOAD	75% LOAD	50% LOAD	25% LOAD	PEAK LOAD	100% LOAD	75% LOAD	50% LOAD	25% LOAD
SO2	GAS	1b/h	NA	nil	nil	nil	nil	NA	nil	nil	nil	nil
		hr/yr	0	8760	8760	8760	8760	0	8760	8760	8760	0
		tons/yr	NA	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0
	FUEL OIL	1b/h	NA	51	41	30	20	NA	52	42	34	NA
		hr/yr	0	8760	8760	8760	8760	0	8760	8760	8760	0
		tons/yr	NA	223.4	179.6	131.4	87.6	NA	227.8	184.0	148.9	NA
	COMBINED (prior to 1995)	GAS hr/yr		N/A				N/A				
		OIL hr/yr tons/yr		N/A				N/A				
	COMBINED (after 1995 w/ expansion)	GAS hr/yr	NA	8260	8260	8260	8260	NA	8260	8260	8260	NA
		OIL hr/yr	0	500	500	500	500	0	500	500	500	0
		tons/yr	NA	12.8	10.3	7.5	5.0	NA	13.0	10.5	8.5	NA
	COMBINED (after 1995 w/o expansion)	GAS hr/yr	NA	7760	7760	7760	7760	NA	7760	7760	7760	NA
OIL hr/yr		0	1000	1000	1000	1000	0	1000	1000	1000	0	
tons/yr		NA	25.5	20.5	15.0	10.0	NA	26.0	21.0	17.0	NA	
NOx	GAS	1b/h	NA	88	72	54	107	NA	53	44	35	NA
		hr/yr	0	8760	8760	8760	8760	0	8760	8760	8760	8760
		tons/yr	NA	385.4	315.4	236.5	468.7	NA	232.1	192.7	153.3	NA
	FUEL OIL	1b/h	NA	166	133	NA	NA	NA	170	138	111	NA
		hr/yr	0	8760	8760	8760	8760	0	8760	8760	8760	8760
		tons/yr	NA	727.1	582.5	NA	NA	NA	744.6	604.4	486.2	NA
	COMBINED (prior to 1995)	GAS hr/yr		N/A				N/A				
		OIL hr/yr tons/yr		N/A				N/A				
	COMBINED (after 1995 w/ expansion)	GAS hr/yr	NA	8260	8260	8260	8260	NA	8260	8260	8260	NA
		OIL hr/yr	0	500	500	500	500	0	500	500	500	0
		tons/yr	NA	404.9	330.6	NA	NA	NA	261.4	216.2	172.3	NA
	COMBINED (after 1995 w/o expansion)	GAS hr/yr	NA	7760	7760	7760	7760	NA	7760	7760	7760	NA
OIL hr/yr		0	1000	1000	1000	1000	0	1000	1000	1000	0	
tons/yr		NA	424.4	345.9	NA	NA	NA	290.6	239.7	191.3	NA	
PARTICULATES	GAS	1b/h	NA	7	7	7	7	NA	7	7	7	NA
		hr/yr	0	8760	8760	8760	8760	0	8760	8760	8760	8760
		tons/yr	NA	30.7	30.7	30.7	30.7	NA	30.7	30.7	30.7	NA
	FUEL OIL	1b/h	NA	15	15	15	15	NA	15	15	15	NA
		hr/yr	0	8760	8760	8760	8760	0	8760	8760	8760	8760
		tons/yr	NA	65.7	65.7	65.7	65.7	NA	65.7	65.7	65.7	NA
	COMBINED (prior to 1995)	GAS hr/yr		N/A				N/A				
		OIL hr/yr tons/yr		N/A				N/A				
	COMBINED (after 1995 w/ expansion)	GAS hr/yr	NA	8260	8260	8260	8260	NA	8260	8260	8260	NA
		OIL hr/yr	0	500	500	500	500	0	500	500	500	0
		tons/yr	NA	32.7	32.7	32.7	32.7	NA	32.7	32.7	32.7	NA
	COMBINED (after 1995 w/o expansion)	GAS hr/yr	NA	7760	7760	7760	7760	NA	7760	7760	7760	NA
OIL hr/yr		0	1000	1000	1000	1000	0	1000	1000	1000	0	
tons/yr		NA	34.7	34.7	34.7	34.7	NA	34.7	34.7	34.7	NA	

POLLUTANT	FUEL		GE 7EA CCCT (25 ppm NOx with Dry Low NOx I Combustor)					GE 7EA CCCT (15 ppm NOx with Dry Low NOx II Combustor)				
			PEAK LOAD	100% LOAD	75% LOAD	50% LOAD	25% LOAD	PEAK LOAD	100% LOAD	75% LOAD	50% LOAD	25% LOAD
VOC	GAS	1b/h	NA	2	1	1	6	NA	2	2	3	NA
		hr/yr	0	8760	8760	8760	8760	0	8760	8760	8760	8760
		ton/yr	NA	8.8	4.4	4.4	26.3	NA	8.8	8.8	13.1	NA
	FUEL OIL	1b/h	NA	5	NA	NA	NA	NA	5	6	9	NA
		hr/yr	0	8760	8760	8760	8760	0	8760	8760	8760	8760
		tons/yr	NA	21.9	NA	NA	NA	NA	21.9	26.3	39.4	NA
	COMBINED (prior to 1995)	GAS hr/yr OIL hr/yr tons/yr		N/A					N/A			
	COMBINED (after 1995 w/ expansion)	GAS hr/yr	NA	8260	8260	8260	8260	NA	8260	8260	8260	NA
		OIL hr/yr	0	500	500	500	500	0	500	500	500	0
		tons/yr	NA	9.5	NA	NA	NA	NA	9.5	9.8	14.6	NA
	COMBINED (after 1995 w/o expansion)	GAS hr/yr	NA	7760	7760	7760	7760	NA	7760	7760	7760	NA
		OIL hr/yr	0	1000	1000	1000	1000	0	1000	1000	1000	0
tons/yr		NA	10.3	NA	NA	NA	NA	10.3	10.8	16.1	NA	
CO	GAS	1b/h	NA	43	34	35	738	NA	54	85	104	NA
		hr/yr	0	8760	8760	8760	8760	0	8760	8760	8760	8760
		ton/yr	NA	188.3	148.9	153.3	3,232.4	NA	236.5	372.3	455.5	NA
	FUEL OIL	1b/h	NA	43	NA	NA	NA	NA	65	84	104	NA
		hr/yr	0	8760	8760	8760	8760	0	8760	8760	8760	8760
		tons/yr	NA	188.3	NA	NA	NA	NA	284.7	367.9	455.5	NA
	COMBINED (prior to 1995)	GAS hr/yr OIL hr/yr tons/yr		N/A					N/A			
	COMBINED (after 1995 w/ expansion)	GAS hr/yr	NA	8260	8260	8260	8260	NA	8260	8260	8260	NA
		OIL hr/yr	0	500	500	500	500	0	500	500	500	0
		tons/yr	NA	188.3	NA	NA	NA	NA	239.3	372.1	455.5	NA
	COMBINED (after 1995 w/o expansion)	GAS hr/yr	NA	7760	7760	7760	7760	NA	7760	7760	7760	NA
		OIL hr/yr	0	1000	1000	1000	1000	0	1000	1000	1000	0
tons/yr		NA	188.3	NA	NA	NA	NA	242.0	371.8	455.5	NA	



BLACK & VEATCH

8400 Ward Parkway, P.O. Box No. 8405, Kansas City, Missouri 64114, (913) 339-2000

Kissimmee Utility Authority
Cane Island Combustion Turbine Project

B&V Project 17645
B&V File 32.0402
August 14, 1992

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

RECEIVED
AUG 17 1992
Division of Air
Resources Management

Subject: Supplemental Information

Attention: Mr. C. H. Fancy, P.E.

Gentlemen:

Enclosed are the results of additional dispersion modeling performed for the bypass stack operation of the Cane Island Combustion Turbine Project proposed by the Kissimmee Utility Authority to further supplement its Authority To Construct/PSD permit application (PSD-FL-182/AC 49-205703). The modeling results demonstrate that ambient air quality impacts are lower for bypass stack operation than for normal combined cycle operation of the project.

We believe these results will allow you to add bypass stack operation to our project. If you have any questions concerning these results, please call me at (913) 339-2164 or Amy Carlson at (913) 339-7425. Thank you for your cooperation in this matter.

Very truly yours,

BLACK & VEATCH

David M Lefebvre

David M. Lefebvre

Enclosure

cc: Mr. Ben Sharma, Kissimmee Utility Authority

C. Halliday
C. Wilson

BEST AVAILABLE COPY



QUESTIONS? CALL 800-238-5355 TOLL FREE.

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**KISSIMMEE UTILITY AUTHORITY
CANE ISLAND
Bypass Stack Air Dispersion Modeling Evaluation**

1.0 Introduction

Kissimmee Utility Authority (KUA) submitted a Prevention of Significant Deterioration (PSD) permit application to the Florida Department of Environmental Regulation in June, 1992. The PSD permit application was for 160 megawatts (MW) of combustion turbine electric generating capacity at their Cane Island site near Intercession City, Florida. Specifically, the project consists of one 40 MW General Electric LM-6000 simple cycle combustion turbine and one 120 MW nominal combined cycle combustion turbine (CCCT) plus a heat recovery steam generator (HRSG) and steam turbine generator. The CTs will fire natural gas as the primary fuel with No. 2 fuel oil as the secondary fuel. The PSD permit application did not expressly indicate the presence of a bypass stack on the combined cycle unit. The CCCT will intermittently operate in a simple cycle (or bypass mode) when the HRSG is down for maintenance and/or repair. Because the CCCT exhaust could be routed through the bypass stack, screening-level modeling was conducted to demonstrate that the air quality pollutant impacts from the bypass stack (i.e., simple cycle mode) would be less than the impacts from the HRSG stack (i.e., combined cycle mode). The air dispersion modeling which predicted the entire facility air quality impacts, including impacts from the HRSG stack, was submitted in June with the PSD permit application. The results of that modeling demonstrated that the proposed project would comply with all applicable air quality standards and increments.

2.0 Modeling Input and Model Selection

A GEP analysis was conducted for the project. The analysis demonstrated that the GEP stack height for both the bypass and HRSG stack is 150 feet, based upon the HRSG building having a height of 60 feet and a maximum projected width of 65.8 feet. Therefore, building downwash parameters were input into the model. Because two types of combustors for the CCCT are being considered, emission and stack parameters for both types of combustors were modeled. The stack parameters for the CCCT were given in the PSD permit application and are given in Tables 1 and 2, along with the bypass stack parameters for the dry low NO_x and quiet combustors, respectively.

The emission and stack parameters given in the tables were input into the EPA approved SCREEN model. The SCREEN model is a PC-compatible companion to the revised screening procedures document entitled Screening Procedures for Estimating the Air Quality Impact of Stationery Sources, EPA-450/4-88-010. SCREEN conservatively predicts 1-hour pollutant impacts assuming worst-case meteorological conditions in the simple terrain. Building dimensions

and the rural modeling option were input into the model. The SCREEN model predicts impacts at receptors out to a maximum of 50 kilometers from the source. Thus, a computer generated receptor array out to 50 kilometers was used for the modeling.

A one gram per second nominal emission rate was used for the modeling. The stack pollutant emissions for both the bypass (simple cycle) and HRSG (combined cycle) modes of operation are equivalent. Thus, higher nominal impacts from a particular mode of operation would also result in higher actual pollutant impacts compared to the alternative mode of operation. Therefore, this comparative analysis was solely based upon nominal emission rates and impacts.

3.0 Air Dispersion Modeling Results

The results of the modeling are summarized in Table 3. The modeling output and associated FDER forms are attached to this document. As shown, the maximum 1-hour bypass stack impacts are less than the HRSG stack impacts for every load and both combustor types. The impacts at 50 kilometers were also given to demonstrate that at long range distances from the facility, the bypass impacts are less than the HRSG impacts.

The PSD application submitted to the FDER in June demonstrated that the entire facility, including the CCCT operating in combined cycle mode, would comply with all air quality standards and increments. This modeling analysis demonstrated that the CCCT operating in simple cycle mode (i.e., bypass mode) would have even lower ground level impacts. Therefore, the facility will comply with all applicable air quality standards independent of the mode of operation for the CCCT.

Table 1
Stack and Emission Parameters for
Bypass stack and HRSG stack with Quiet Combustor

Stack Parameters	25 Percent Load		50 Percent Load		75 Percent Load		100 Percent Load		Peak Load		
	Bypass	HRSG	Bypass	HRSG	Bypass	HRSG	Bypass	HRSG	Bypass	HRSG	
Stack Height, ft	75	100	75	100	75	100	75	100	75	100	
Stack Diameter, ft	14	16	14	16	14	16	14	16	14	16	
Stack Velocity, fpm	5,087	2,690	6,288	3,240	7,317	3,270	8,462	3,300	8,886	3,320	
Stack Temp, F	582	260	609	260	775	260	953	260	1015	260	
Downwash Parameters											
Building Height, ft	60	60	60	60	60	60	60	60	60	60	
Width, ft	65.8	65.8	65.8	65.8	65.8	65.8	65.8	65.8	65.8	65.8	
Emission Parameters											
SO ₂ , lb/h	(gas)	nil	nil	nil	nil	nil	nil	nil	nil	nil	nil
	(oil)	121	121	183	183	250	250	325	325	355	355
NO _x , lb/h	(gas)	96	96	59	59	82	82	108	108	117	117
	(oil)	150	150	102	102	142	142	187	187	204	204
PM, lb/h	(gas)	5	5	5	5	5	5	5	5	5	5
	(oil)	15	15	15	15	15	15	15	15	15	15
VOC, lb/h	(gas)	*	*	135	135	55	55	2	2	1.6	1.6
	(oil)	5	5	7.5	7.5	5	5	5	5	4	4
CO, lb/h	(gas)	75	75	2010	2010	1185	1185	23	23	23	23
	(oil)	30	30	384	384	170	170	24	24	24	24

*data not available

Table 2
Stack and Emission Parameters for
Bypass stack and HRSG stack with Dry Low NO_x Combustor

Stack Parameters	25 Percent Load		50 Percent Load		75 Percent Load		100 Percent Load		
	Bypass	HRSG	Bypass	HRSG	Bypass	HRSG	Bypass	HRSG	
Stack Height, ft	75	100	75	100	75	100	75	100	
Stack Diameter, ft	14	16	14	16	14	16	14	16	
Stack Velocity, fpm	5,074	2,641	5,960	2,663	7,030	2,689	8,439	3,290	
Stack Temp, F	599	260	774	260	981	260	954	260	
Downwash Parameters									
Building Height, ft	60	60	60	60	60	60	60	60	
Width, ft	65.8	65.8	65.8	65.8	65.8	65.8	65.8	65.8	
Emissions Parameters									
SO ₂ , lb/h	(gas)	nil	nil	nil	nil	nil	nil	nil	nil
	(oil)	122	122	184	184	255	255	322	322
NO _x , lb/h	(gas)	95	95	56	56	77	77	97	97
	(oil)	*	*	*	*	145	145	185	185
PM, lb/h	(gas)	7	7	7	7	7	7	7	7
	(oil)	15	15	15	15	15	15	15	15
VOC, lb/h	(gas)	6	6	1.6	1.6	1.6	1.6	2	2
	(oil)	*	*	*	*	*	*	5	5
CO, lb/h	(gas)	672	672	37	37	37	37	47	47
	(oil)	*	*	*	*	*	*	47	47

* data not available

Table 3

One-Hour Pollutant Impacts from HRSG Stack or Bypass Stack
for Nominal 1 u/s Emission Rate
(Mg/m³)

<u>Combustor Type</u>	<u>Load</u>	<u>HRSG STACK</u>			<u>BYPASS STACK</u>		
		<u>Maximum Impact</u>	<u>Distance to Maximum (m)</u>	<u>Impact at 50 km</u>	<u>Maximum Impact</u>	<u>Distance to Maximum (m)</u>	<u>Impact 50 km</u>
Quiet	25%	22.25	55.0	.405	14.86	114.0	.280
Dry Low NOx	25%	22.77	55.0	.408	14.91	113.0	.278
Quiet	50%	17.17	55.0	.376	10.34	121.0	.240
Dry Low NOx	50%	22.54	55.0	.407	11.67	111.0	.229
Quiet	75%	16.93	55.0	.375	7.06	117.0	.197
Dry Low NOx	75%	22.28	55.0	.405	8.29	107.0	.188
Quiet	100%	16.69	55.0	.374	4.27	112.0	.163
Dry Low NOx	100%	16.77	55.0	.374	4.32	112.0	.164
Quiet	Peak	16.52	55.0	.373	3.46	109.0	.153

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

Stack Height: 65 (100) (75 RYPASS) ft. Stack Diameter: 10 (16) (14 BYPASS) ft.
 Gas Flow Rate: 450,000 (660,000) ACFM DSCFM Gas Exit Temperature: 718 (260) (582 BYPASS)
 Water Vapor Content: (781,000 BYPASS) % Velocity: 95 (54) (84.6 RYPASS) FPS
 SCCT (CCCT)

SECTION IV: INCINERATOR INFORMATION

N/A

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

Description of Waste _____

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

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

Manufacturer _____

Date Constructed _____ Model No. _____

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

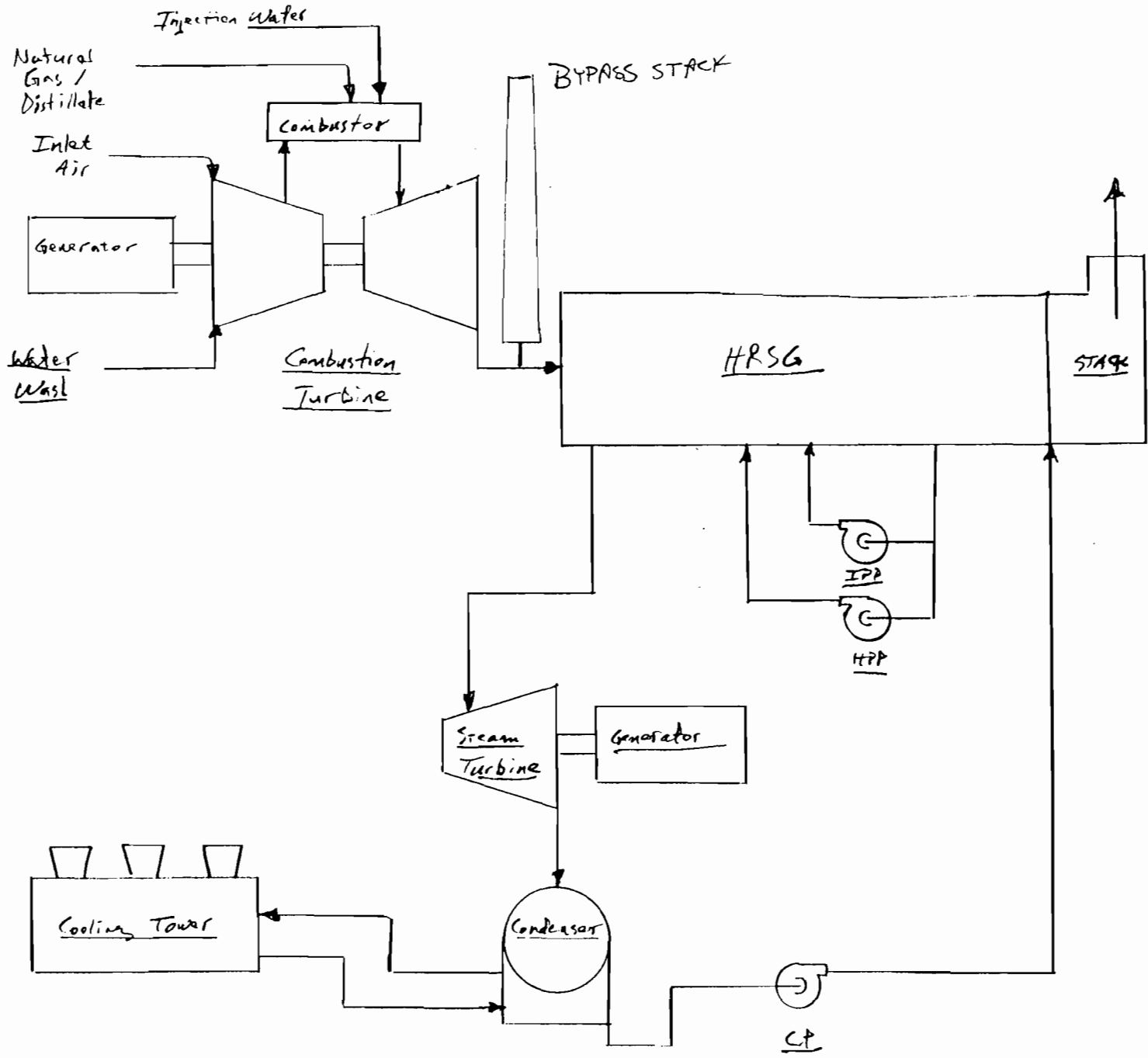
Stack Height: _____ ft. Stack Diameter: _____ Stack Temp. _____

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

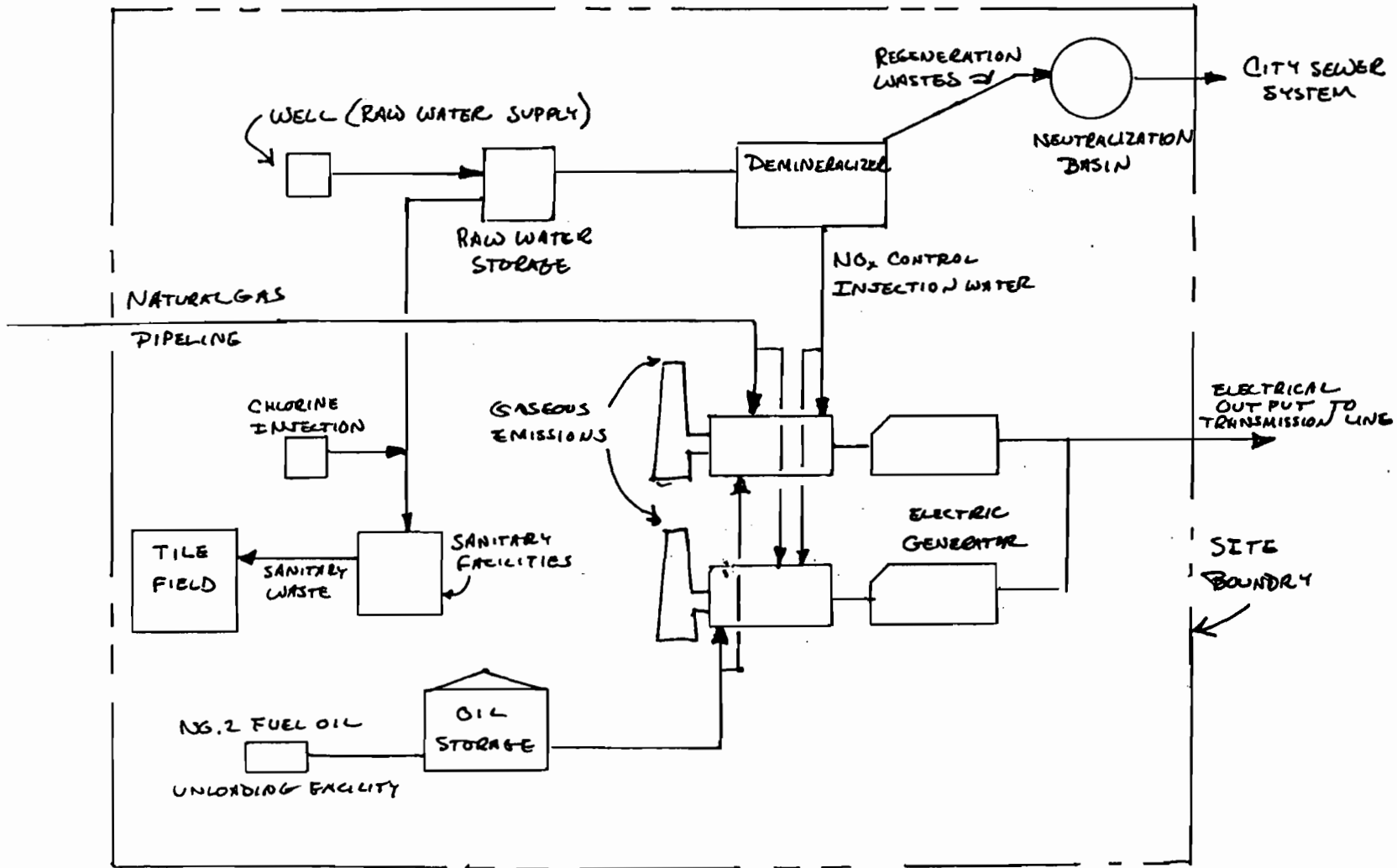
*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: Cyclone Wet Scrubber Afterburner
 Other (specify) _____

Process Flow Diagram
In Support of the Florida Department of Environmental Regulation
Permit to Construct



REVISED, SUPERSEDED, AND VOID CALCULATIONS MUST BE CLEARLY IDENTIFIED, INITIALED, AND DATED BY THE RESPONSIBLE INDIVIDUAL.



Process Flow Diagram
 In Support of the Florida Department of Environmental Regulation
 Permit to Construct



BLACK & VEATCH

8400 Ward Parkway, P.O. Box No. 8405, Kansas City, Missouri 64114, (913) 339-2000

Kissimmee Utility Authority
Cane Island Combustion Turbine Project

B&V Project 17645
B&V File 32.0402
July 30, 1992

RECEIVED

JUL 30 1992

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

Division of Air
Resources Management

Subject: Authority To Construct/PSD Permit
Application

Attention: Mr. C. H. Fancy, P.E.

Gentlemen:

Enclosed is the response of Kissimmee Utility Authority to the questions in your June 30, 1992 letter concerning the Authority To Construct/PSD permit application (PSD-FL-182/AC 49-205703) filed for its Cane Island Combustion Turbine Project.

Also enclosed are the three manufacturers brochures and a 3.5" disk containing the MESOPUFF II computer runs/files you requested.

We believe these responses fully address your questions. If you have any questions concerning these responses, please call me at (913) 339-2164 or Amy Carlson at (913) 339-7425. Thank you for your cooperation in this matter.

Very truly yours,

BLACK & VEATCH

David M Lefebvre

David M. Lefebvre

Enclosure

cc: Mr. Ben Sharma, Kissimmee Utility Authority

D. Nelson
C. Halladay
C. Collins, C. Dist
J. Harper, EPA
C. Shauer, NPS

**Additional Information Requested for
Revised Kissimmee Utility Authority
Prevention of Significant Deterioration
Permit Application**

DER Form 17-1.202 (1)

1. *Complete page 1 of 12.*

DER Form 17-1.202, page 1 has been completed and is attached to this document. However, please note KUA has moved into its new office building at 1701 West Carroll Street in Kissimmee, zip code 34741. Please use this new address in future correspondence with KUA.

2. *Page 3 of 12, Section E: What is the maximum requested operating time for this facility? How many hours on oil? How many hours on gas?*

As given in the form, the requested total operational hours for the equipment is 8,760 hours/year. The project will either fire natural gas or No. 2 fuel oil. The pollutant emissions resulting from No. 2 fuel oil firing are greater than the natural gas emissions. The supporting air quality impact analyses were all based on each turbine operating 8,760 hours/year firing No. 2 fuel oil (worst-case impacts). Therefore, the requested permitted equipment operating hours are 8,760 hours per year for each turbine firing either natural gas or No. 2 fuel oil.

3. *Page 4 of 12, Pollutant Information: Show basis of emission rate calculations (lb/hr, ton/yr, lb/MMBtu, ppmv) for each of the pollutants emitted by this project. Use the low heating value (LHV) of the fuels, different percentage loads and proposed operating hours (for oil and gas) in the calculations.*

Manufacturer's performance data were used to determine pollutant emission rates for the turbines. These data are attached to this document.

4. *Page 5 of 12: What is the maximum sulfur content of the No. 2 fuel oil that will be used, 0.05 percent or 0.3 percent sulfur by weight? Please clarify:*

As given in the "fuel analysis - percent sulfur information" on page 5, the maximum percent sulfur in the no. 2 fuel oil is 0.05 percent.

BACT Analysis

1. *It appears the cost effectiveness (\$/tons removed) presented on using SCR technology is high when compared to similar projects. To document this estimate, please expand the BACT analysis for NO_x. Include a table summarizing the emission reductions, economic, energy, and environmental impacts of the control technology chosen vs. the SCR technology rejected.*

The costs included with the SCR technology are comparable to similar estimates completed for other BACT proposals. The operating costs may be conservative when considering only natural gas firing. However, the use of No. 2 fuel oil as an alternative fuel requires additional operating costs as compared to the natural gas. A two year life expectancy for the catalyst has been used to account for the use of oil. Additional water treatment and injection costs have also been included to cool the exhaust gas prior to reaching the SCR. These costs were required for the PG7111(EA) combined cycle steam since it may operate in simple cycle mode for given periods.

NO_x Control Comparison

Turbine: PG7111(AE)

Fuel: Natural Gas

	Dry Low NO _x Burners	SCR (After Dry Low NO _x Burners)
Guaranteed NO _x Emission	25 ppm	5 ppm
Emission Reductions	N/A	25 to 5 ppm
Percent Removal	N/A	80
Ton Removed per year	N/A	298
Energy Penalty, (btu/kwh)	50	58
Economics	see item 3 below	see item 3 below

Environmental Impacts	1. None	1. Use of hazardous materials (ammonia) 2. Hazardous waste generation - spent catalyst 3. Ammonia discharge from stack 4. SO ₃ formation in SCR
-----------------------	---------	---

NO_x Control Comparison
Turbine: LM6000
Fuel: Natural Gas

	Water Injection	SCR (After Water Injection)
Guaranteed NO _x Emission	25 ppm	5
Emission Reductions	N/A	25 to 5 ppm
Percent Removal	N/A	80
Ton Removed per year	N/A	116
Energy Penalty, (btu/kwh)	410	58
Economics	see item 3 below	see item 3 below
Environmental Impacts	1. Water usage	1. Use of hazardous material (ammonia) 2. Hazardous waste generation - spent catalyst 3. Ammonia discharge from stack 4. SO ₃ formation in SCR

2. *Section 4.2.3.(2): What is the net energy penalty in millions cu. ft. of natural gas per year associated with the use of the water injection/low NO_x burners design and the use of a SCR system? Show the basis of these calculations.*

The net energy penalties for each system were calculated based on turbine manufacturer information, typical natural gas parameters, and a 100 percent unit capacity factor. Based on these conditions, the natural gas penalties for the LM6000 were 99 million and 115 million cubic feet per year, respectively, with water injection and with SCR and water injection. The natural gas

penalties for the PG7111(EA) type combustion turbine were 42 million and 91 million cubic feet of gas, respectively, for the dry low NO_x burner option.

The attached "Natural Gas Usage Penalty" sheets provide the details and basis of the manner in which these penalties were calculated.

3. *Section 4.2.5.(3): What is the cost effectiveness (\$/ton NO_x removed) of the proposed water injection/low NO_x burner technology?*

The cost effectiveness of the proposed technologies is not applicable since these technologies represent the least stringent BACT control technology for each respective combustion turbine as is discussed below.

PG7111(EA)

In order to meet the NSPS standards of 75 ppm NO_x some type of control technology must be applied to the combustion turbine exhaust. Low NO_x burners, which lower emission rates to 25 ppm, are available on this combustion turbine. This low cost option for controlling emissions is now the least stringent method of meeting NSPS limits.

As an alternative, water injection could be utilized to decrease emissions. Operation of combustion turbines with water injection has proven that NO_x emission rates can be reduced to 25 ppm at a nominal cost as compared to a reduction to only 75 ppm. The cost of the water injection due to heat rate penalty and water treatment costs, however, places the water injection technology as a higher cost alternative to meet the 25 ppm achievable by the dry low NO_x burners. Therefore, the dry low NO_x burners are the least stringent BACT.

LM6000

In order to meet the NSPS standards of 75 ppm NO_x, some type of control technology must be applied to the combustion turbine exhaust. Since low NO_x burners are not available on this combustion turbine, water injection represents the best manner to achieve emission levels complying with the NSPS standard of 75 ppm. Operational experience from other combustion

turbines can be applied to this turbine which indicates that water injection can reduce NO_x emissions to 25 ppm on a long-term basis. Since the additional water injection cost to reduce NO_x emissions to 25 ppm is nominal, water injection to control NO_x emissions to 25 ppm represents the least stringent BACT technology available.

Alternate Technologies				
Fuel: Natural Gas				
Technology	Emissions Primary Control Only (ton/yr)	Emissions SCR with Prim. Cont. (ton/yr)	Levelized Cost (\$/Yr)	Cost Effectiveness (\$/ton NO _x removed)
(PG7111 EA) SCR With Dry Low NO _x Burner	372 (@ 25 ppm)	74 (@ 5 ppm)	2,994,000	9879
(LM6000) SCR with Water Injection	145 (@ 25 ppm)	29 (@ 5 ppm)	1,592,000	13700

4. Section 4.2.5.(4): What is the efficiency of these turbines? Calculate Y (refer to the NSPS, Subpart GG).

Estimated PG7111(EA) heat rate performance (Y) is as follows:

PG7111(EA)			
COMBUSTION TURBINE PERFORMANCE			
(100% LOAD)			
AMBIENT TEMPERATURE	(F)	HEAT RATE	
		(Y)	
		GAS	OIL
	20	10.81	11.28
	72	11.17	11.60
	102	11.52	11.87

Note: Manufacturer's dry low NO_x burner performance data.

**LM6000
COMBUSTION TURBINE PERFORMANCE
(100% LOAD)**

AMBIENT TEMPERATURE (F)	HEAT RATE (Y)	
	GAS	OIL
59	9.67	9.78
95	10.11	10.25

Note: Manufacturer's water injection performance data.

5. *Submit an emissions test data for each type of turbine.*

The LM6000 type combustion turbines have not been commercially operated, therefore, emission tests are not available.

Attempts are currently being made to locate applicable emission test results for the PG7111(EA) CTG.

General

6. *Submit a flow diagram of the proposed cogeneration system (simple and combined cycle units). Include all stacks associated with this system.*

A simple cycle process flow diagram for the GE LM-6000 machine was provided with the original application. Because the simple cycle and combined cycle turbines function independently from one another, only the combined cycle process flow diagram for the GE 7EA machine was provided in the revised application. Both of these flow diagrams are included with this document.

7. *Submit a manufacturer's specifications manual for the proposed gas turbines.*

A manufacturer's specifications manual is included with this document.

8. *Heat Recovery Steam Generator: Submit manufacturer's name, model number, generator name, plate rating (gross MW), maximum steam production rate (lb/hr and/or horsepower).*

Manufacturer: Vogt or equivalent

Model No: MSG

Maximum Steam Rating: 275,000 lb/hr-HP

60,000 lb/hr-IP

HRGs typically not specified by generator name and plate rating.

9. *Steam Turbine Generator: What is the nominal power (MW) output of this steam turbine? What is the steam input to this turbine?*

Steam Turbine Generator nominal power (MW) output: 40 MW

Steam Turbine Generator steam input: 275,000 lb/hr HP steam plus

60,000 lb/hr IP steam

10. *Storage Tanks: What is the estimated annual throughput and type of air pollution control for the tanks?*

For the 7EA: 73,000,000 gal/yr - Fixed roof (vented)

For the LM6000: 25,900,000 gal/yr - Fixed roof (vented)

What are the estimated emissions?

The combined vented and working loss of VOCs from the small fuel oil tank associated with the LM6000 is 0.008 g/s. These values were conservatively calculated based on 8,760 hours per year of fuel oil firing and AP-4Z emission factors.

Modeling--Chassahowitzka Class I Area

11. *Please provide an NO₂ PSD Class I analysis for the project. If the project's predicted NO₂ impact at the Chassahowitzka National Wilderness Area is greater than the National Park Service (NPS) recommended significance level of 0.025 ug/m³, annual average, please provide a cumulative NO₂ Class I analysis.*

Air dispersion modeling, utilizing the long-range transport model MESOPUFF-II was performed to determine the project's NO_x impacts on Chassahowitzka National Wildlife Refuge (NWR). Chassahowitzka NWR is the nearest Prevention of Significant Deterioration (PSD) Class I area to the project site, located 115 kilometers west of the site. The National Park Service (NPS) has tentatively established air quality significant impact thresholds for PSD Class I areas. For NO_x impacts, the significant impact level is 0.025 ug/m³ on an annual basis. For projects with ambient air quality impacts above this significance level, NPS usually requests PSD permit applicants to perform cumulative source modeling to demonstrate compliance with the PSD Class I NO_x increment (i.e., 2.5 ug/m³ on an annual basis).

For the air dispersion modeling of project impacts on the PSD Class I area, the MESOPUFF-II model was used. MESOPUFF-II is a short-term, Gaussian, puff superposition model designed to account for temporal and spatial dispersion mechanisms along a variable trajectory. A continuous plume is simulated as a

series of discrete puffs. Each puff is directed independently from other puffs and is influenced by multipoint horizontal and two-level vertical gridded wind fields. MESOPUFF-II is capable of accounting for puff growth, chemical transformation, dry deposition, and precipitation scavenging.

The MESOPUFF-II model is comprised of four separate programs; READ56, a preprocessor for the upper air data; MESOPAEII, a preprocessor which combines the upper air and surface data; MESOPUFF-II, the main program which computes impacts at specified receptors from single or multiple sources; and MESOFILE, a postprocessor which yields output for various averaging periods. The latest version of MESOPUFF-II (Version 4) was obtained from EPA-Research Triangle Park (RTP).

For the MESOPUFF-II modeling, several regulatory default options were employed. These options were selected based on guidance from the EPA document, User's Guide to the MESOPUFF-II Model and Related Programs, 1984, and A Modeling Protocol for Applying MESOPUFF-II to Long Range Transport Problems, July 1988. In addition, guidance was also obtained from EPA-RTP, EPA Region IV, and the FDER. The modeling options are described in Table 1.

It should be noted that the MESOPAC-II program terminates under situations where the calculated mechanical mixing height is greater than the actual 700 millibar geopotential height. In this situation, a vertically averaged wind field cannot be calculated for the upper wind field. The 1988 MESOPUFF-II modeling protocol suggests that the mixing height should be limited to 4,000 meters to prevent model termination. However, when this is done the model terminates for some months due to low geopotential heights and the higher calculated mixing heights.

In some cases, the central Florida mixing heights are about 2,900 meters to 3,500 meters. In these cases, the program would terminate because a higher mixing height would be calculated. Therefore, per guidance from EPA-RTP, EPA Region IV, and FDER, the mixing heights were limited to values less than the

700 mb geopotential heights on a monthly basis. The mixing heights were limited 2,900 to 4,000 meters.

The MESOPUFF-II model utilizes three nested cartesian coordinate grid systems. The outergrid--the meteorological grid--must be of sufficient size to encompass the coordinates of all of the meteorological stations considered. The next grid, which must be equal to or smaller than the meteorological grid, is the computational grid. This grid defines the outer boundary of computational calculations. Once a puff is transported beyond these boundaries, it is no longer considered in the computations. This grid must include all sources, as well as gridded and discrete receptor locations. The third grid--the sampling grid--is a subset of the computational grid and defines the cartesian coordinate locations used to estimate impacts. The FDER provided a set of 13 discrete receptors defining the western and northern boundaries of Chassahowitzka Wildlife Refuge. Because only discrete receptors were used, the sampling grid was not needed to perform the modeling.

Coordinates for the various grids are given in Table 2. The coordinates are incorporated into the modeling as relative coordinates. The southwest corner of the grid (285 km E, 3000 km N) is designated as 1.0, 1.0; with the northeast corner (535 km E, 3,300 km N) designated as 25.0, 30.0.

One year of surface and upper air data (1986) were obtained for several stations in the region. Surface data were obtained for the Tampa, Orlando, and Gainesville, Florida stations. Upper air data was obtained from the Ruskin (Tampa) upper air station.

As part of the completeness determination for this application, the FDER concluded that a NO_x increment consumption analysis must be performed for the nearest PSD Class I area. Therefore, MESOPUFF-II was used with one year of meteorological data (1986) from regionally located stations to determine the project's NO_x impacts on the Chassahowitzka Wildlife Refuge. The maximum 3-hour and 24-hour impacts were compared to the National Park Service "significance" levels. These levels have not been promulgated by EPA or FDER,

but have been unofficially adopted by FDER. These levels were arbitrarily calculated as:

Table 1
MESOPUFF-II Modeling Options

MESOPUFF-II Program	Option Description	Modeled Input	Reference
READ56	Top Pressure Level	700 mb	a
	Missing Data	Pressure level eliminated if missing geopotential height	a
MESOPAC-II	Wind Speed	default	a
	Measurement Height		
	Von Karman constant	default	a
	Friction Velocity	default	a
	Mixing Height	defaults	a
	Constants		
	Wind Field Variables	defaults	a
	Surface Roughness	determined from land	a
	Length	use category	a
	Heat Flux Adjustments	not used	a
	Radiation Reduction	default	a
	Factors		
	Heat Flux Constants	default	a
	MESOPUFF-II	Puff Release Rate	4/hour
Minimum Sampling		2	a
Rate			
Variable Sampling		True--2 m/s	a
Option			
Minimum Age of Puffs		900 seconds	a
Vertical Concentration		initial Gaussian distrib.	a
Distribution		in vertical	a
Chemical		Set to True Default	b
Transformation		values used	
Dry Deposition		Set to True Default values used	b
Wet Removal	Not used	a	
Three Vertical Layer	Not used	a	

^aEPA, A Modeling Protocol for Applying MESOPUFF-II to Long Range Transport Problems, July 1988.

^bTelephone conversation with Cleve Holladay and Tom Rogers of Florida Department of Environmental Regulations.

PSD Class II Significant Level x PSD Class I Increment
AAQS

Thus, the annual NO_x significant value is 0.025 ug/m³.

The PC-based model was run for monthly periods. The average annual impact of each receptor was calculated by the following formula.

Time Weighted Annual Average (ug/m³) =

$$\frac{\Sigma (\text{Monthly Concentration ug/m}^3) \times \text{No. Days/Month}}{365}$$

The monthly and annual averages are given in Table 3. As shown in the table, the NO_x annual impacts at all PSD Class I receptors are below the NPS significant impact levels. Therefore, the project will not significantly impact ambient air quality within Chassahowitzka NWR and a cumulative source analysis is not necessary.

12. Based on verbal communication with the NPS, please expand the Air Quality Related Values (AQRVs) analysis to include aquatic impacts.

In north Florida, salt marshes and estuaries are well protected in a nearly unbroken crescent that extends along the Gulf coast from St. Marks National Wildlife Refuge southward to Chassahowitzka National Wildlife Refuge. This system is an example of an inshore marine habitat, where sea water is diluted by land runoff. The refuge, being part of this open estuarine system, is supplied by freshwater from the Chassahowitzka River. Chassahowitzka Springs, a first magnitude artesian spring with an average discharge of 3.94 cubic meters per second, gives rise to the river.

Sulfur Dioxide

A literature search was conducted to determine the effects of deposition of airborne pollutants on aquatic resources. No information was found regarding the effects of sulfur dioxide on coastal waters. The probable reason for limited

Table 2
MESOPUFF-II Grids and Receptor Locations

<u>Receptor</u>	<u>UTM Coordinates</u>	<u>Relative Coordinates</u>
Meteorological Grid	285 km E to 535 km E	1.0 to 25.0
	3,000 km N to 3,300 km N (10 km spacing)	1.0 to 30.0
Computational Grid	285 km E to 535 km E	1.0 to 25.0
	3,000 km N to 3,300 km N (10 km spacing)	1.0 to 30.0
Discrete Receptors	340.3 km E, 3165.7 km N	6.53, 17.57
	340.3 km E, 3167.7 km N	6.53, 17.77
	340.3 km E, 3169.8 km N	6.57, 18.19
	340.7 km E, 3171.9 km N	6.53, 17.98
	342.0 km E, 3174.0 km N	6.70, 18.40
	343.0 km E, 3176.2 km N	6.80, 18.62
	343.7 km E, 3178.3 km N	6.87, 18.83
	342.4 km E, 3180.6 km N	6.74, 19.06
	341.1 km E, 3183.4 km N	6.61, 19.34
	339.0 km E, 3183.4 km N	6.40, 19.34
	336.5 km E, 3183.4 km N	6.15, 19.34
334.0 km E, 3183.4 km N	5.90, 19.34	
331.5 km E, 3183.4 km N	5.65, 19.34	

Table 3
 NO_x Concentrations at Chassahowitzka National
 Wildlife Refuge Concentrations in ug/m³

Receptor	Jan	Feb	Mar	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Annual
1	0.0161	0.0076	0.0083	0.0074	0.0138	0.0092	0.0015	0.0022	0.0179	0.0158	0.0156	0.0052	0.00873
2	0.0110	0.0079	0.0070	0.0069	0.0125	0.0080	0.00042	0.0031	0.0115	0.0165	0.0195	0.0065	0.00806
3	0.0085	0.0063	0.0043	0.0059	0.0116	0.0071	0.00010	0.0048	0.0128	0.0144	0.0190	0.0069	0.00761
4	0.0146	0.0079	0.0080	0.0070	0.0136	0.0089	0.00106	0.0023	0.0149	0.0158	0.0156	0.0054	0.00833
5	0.0091	0.0079	0.0061	0.0069	0.0120	0.0077	0.00024	0.0039	0.0113	0.0169	0.0219	0.0070	0.00814
6	0.0096	0.0052	0.0042	0.0056	0.0113	0.0063	0.00008	0.0041	0.0130	0.0124	0.0166	0.0067	0.00710
7	0.0129	0.0080	0.0075	0.0068	0.0131	0.0084	0.00069	0.0026	0.0128	0.0161	0.0169	0.0059	0.00810
8	0.0083	0.0073	0.0051	0.0066	0.0117	0.0074	0.00014	0.0045	0.0118	0.0162	0.0216	0.0072	0.00799
9	0.0107	0.0041	0.0043	0.0053	0.0106	0.0052	0.00007	0.0036	0.0135	0.0102	0.0143	0.0064	0.00656
10	0.0117	0.0045	0.0045	0.0059	0.0103	0.0050	0.00006	0.0032	0.0125	0.0109	0.0155	0.0073	0.00675
11	0.0131	0.0049	0.0049	0.0065	0.0099	0.0048	0.00006	0.0029	0.0114	0.0117	0.0172	0.0091	0.00709
12	0.0145	0.0052	0.0054	0.0072	0.0094	0.0044	0.00006	0.0026	0.0102	0.0124	0.0193	0.0113	0.00745
13	0.0155	0.0054	0.0057	0.0079	0.0090	0.0041	0.00006	0.0024	0.0092	0.0130	0.0217	0.0137	0.00785

data is that SO_4 is a major dissolved constituent of seawater (2.712 g/kg, 28.9 mM, 39% free ion). Since sulfate is a major component of seawater, the additional amount of sulfate that enters the ecosystem from anthropogenic sources most likely has no effect.

In coastal areas where sediments contain appreciable concentrations of organic matter, the dominant process in the decomposition of this matter is bacterial sulfate reduction. The reduction process is anaerobic and releases hydrogen sulfide. The sulfide is reoxidized back to sulfate as it moves out of the sediments into an oxygenated environment.

Estuaries and coastal waters receive substantial amounts of weathered material (and anthropogenic inputs) from terrestrial ecosystems and from the exchange with sea water. As a result, they tend to be well buffered. Acidification seems not to be a concern in any of these areas. In addition, the KUA project will have insignificant air quality impacts on the area. Therefore, the effects on the aquatic system will be negligible.

Nitrogen Oxides

Estuarine and coastal water ecosystems exist at the transition between freshwater systems and open oceans. These transition zones share some characteristics with freshwater and marine systems, but they also have some unique properties that cause them to respond differently to nitrogen dioxide deposition. These transition zones are subject to natural processes, such as tidal flows and salinity changes, which are not observed in other aquatic systems.

Estuaries and coastal waters receive substantial amounts of weathered material (and anthropogenic inputs) from terrestrial ecosystems and from exchange from sea water. As a result, they tend to be well buffered. Acidification is not considered a concern in any of these areas. However, these same inputs make them very prone to the effects of eutrophication. Eutrophication of these areas creates anoxic bottom waters, blooms of nuisance algae, and replacement of economically-important species with less-important species (Jaworski 1981; Mearns et al. 1982). Eutrophication has been suggested as the

causal factor in the disappearance of the striped bass (Morone saxatilis) fishery in Chesapeake Bay (Price et al. 1985). The increasing spatial extent of anoxic bottom waters during the summer is the proposed reason for this disappearance (Officer et al. 1984). Blooms of algae in the Gulf of Mexico were responsible for the deaths of approximately 100 tons of fish daily in 1971. The blooms have been linked to eutrophic conditions caused by high nutrient conditions (Paerl 1988).

The link between nitrogen deposition and the eutrophication of estuaries and coastal waters depends on two factors. The first factor is whether the productivity of these systems is limited by nitrogen availability. Ryther and Dustan (1971) concluded that nitrogen is the critical limiting factor to algal growth and eutrophication in coastal marine waters (Hecky and Kilham 1988). The second factor is whether nitrogen deposition is a major source of nitrogen to the system. In many cases, the supply of nitrogen from deposition is minor when compared to other anthropogenic sources.

The most complete studies to estimate the relative importance of atmospheric deposition to the overall nitrogen budget of an estuary or coast ecosystem were completed for the Chesapeake Bay (Fisher et al. 1988; Tyler 1988). Both reports concluded that atmospheric deposition (25-40 percent of total inputs) contributed significantly to the nitrogen budget in those aquatic systems.

Seawater typically has the following concentrations inorganic nitrogen: (NO_3^- : 60-2,400 ug/kg, NH_4^+ : <2-40 ug/kg, and NO_2^- : <4-170 ug/kg) (Berner and Berner 1987). This is equivalent to 60-2,400 g/m³ NO_3^- , <2-40 g/m³ NH_4^+ , and <4-170 g/m³ NO_2^- . The KUA project will contribute insignificant amounts of NO_x to the Class I airshed (i.e., <0.025 ug/m³ on an annual basis). Therefore, the project will not significantly affect aquatic systems in the Chassahowitzka NWR.

Sources:

Berner, E. K., and R. A. Berner 1987. *The Global Water Cycle*. Englewood Cliffs, NJ: Prentice-Hall.

Fisher, D., J. Ceraso, T. Mathew, and M. Oppenheimer. 1988. *Polluted coastal waters: the role of acid rain*. New York, NY: Environmental Defense Fund.

Hecky, R. E., and P. Kilham. 1988. Nutrient limitation of phytoplankton in freshwater and marine environments: a review of recent evidence on the effects of enrichment. *Limnol. Oceanogr.* 33: 796-822.

Jaworski, N. A. 1981. Sources of nutrients and the scale of eutrophication problems in estuaries. In: B. J. Neilson and L. E. Cronin, eds. *Estuaries and nutrients*. Clifton, NJ: Humana Press, pp. 83-110.

Mearns, A. J., E. Haines, G. S. Kleppel, R. A. McGrath, J. J. A. McLaughlin, D. A. Segar, J. H. Sharp, J. J. Walsh, J. Q. Word, D. K. Young, and M. W. Young. 1982. Effects of nutrients and carbon loadings on communities and ecosystems. In: G. F. Mayer, ed. *Ecological stress and the New York Bight: science and management: proceedings of a symposium on the ecological effects of environmental stress; June 1979*. New York, NY. Columbia, S.C.: Estuarine Research Federation; pp. 53-65.

Officer, C. B., R. B. Biggs, J. L. Taft, L. E. Cronin, M. A. Tyler, and W. R. Boynton. 1984. Chesapeake Bay anoxia; origin, development, and significance. *Science* 223: 22-27.

Paerl, H. W. 1988. Nuisance phytoplankton blooms in coastal, estuarine, and inland waters. *Limnol. Oceanogr.* 33: 823-847.

Price, K. S.; D. A. Flemer, J. L. Taft, G. B. Mackiernan, W. Nehlsen, R. B. Biggs, N. H. Burger, and D. A. Blaylock. 1985. Nutrient enrichment of Chesapeake Bay and its impact on the habitat of striped bass: a speculative hypothesis. *Trans. Am. Fish. Soc.* 114: 97-106.

Ryther, J. H., and W. M. Dunstan. 1971. Nitrogen, phosphorus, and eutrophication in the coastal marine environment. *Science* 171: 1008-1013.



Owner Kissimmee Utilities Power
 Plant CANE ISLAND Unit _____
 Project No. 17645 File No. _____
 Title Natural Gas Usage Penalty

Computed By R. Lausman
 Date 7/27 19 92
 Checked By _____
 Date _____ 19 _____
 Page 1 of 4

Purpose: Calculate Net Energy Penalty in millions cu. ft. of natural gas per year for control technologies.

- Reference:
- 1) GE Turbine Information FAX, 7/21/92, John Sanders (GE) to Rick Lausman (B&V)
 - 2) GE Turbine Information FAX, 8/28/91, Dick Schubert (GE) to Nick Althausen (B&V)
 - 3) Perry's Chemical Engineers Handbook 6th Edition
 - 4) GE Turbine Information Letter, 1-3-90, M. Morris (GE) to C.H. Fritz (B&V) B&V Project 16582.40.0000

Basis: Operating Hours - 8760 hr/yr
 Spec. Vol. Natural Gas = $24.8 \frac{\text{cu ft}}{\text{lb}}$ (Ref. 3.)
 LHV of Natural Gas = $21515 \frac{\text{BTU}}{\text{lb}}$ Ref. 1

16,600,000 NATURAL GAS PENALTY - WATER INJECTION

From Ref. 1's 2 for 95°F ambient inlet temperature

	HEAT RATE BTU/Kwh	OUTPUT Kw
With Water Injection @ 25 ppm NO _x	9590	29,760
Uncontrolled Emissions	9260	29,930
Difference	330	

Use Lower Output Rating as conservative basis

$$330 \frac{\text{btu}}{\text{Kwh}} * 8760 \frac{\text{hr}}{\text{yr}} * 29760 \text{ Kw} = 8.60 \times 10^{10} \frac{\text{btu}}{\text{yr}}$$

$$8.60 \frac{\text{BTU}}{\text{yr}} * \frac{1 \text{ lb}}{21515 \text{ BTU}} * 24.8 \frac{\text{cu ft}}{\text{lb}} = 9.92 \times 10^7 \frac{\text{cu ft}}{\text{yr}}$$

DO NOT WRITE IN THIS SPACE

RGN-175A



Owner Kissimmee Utilities Power Auth
 Plant WANE Island Unit _____
 Project No. 17645 File No. _____
 Title Natural Gas Usage Penalty

Computed By R. Lawson
 Date 7/27 1992
 Checked By _____
 Date _____ 19____
 Page 2 of 4

LM 6000 NATURAL GAS PENALTY - SCR W/ WATER INJECTION

Assumption: Estimated Net Power Reduction
 Due to SCR is 0.55%

USE 95°F Performance Information
 Net Power Decrease $0.0055 * 29760 = 164 \text{ Kw}$

$$\begin{array}{r} 29760 \\ 164 \\ \hline \text{Revised Total Net Output} = 29,596 \text{ Kw} \end{array}$$

Resize Heat Rate for lower Power Output as compared
 to base performance for water injection at 25 ppm

$$9590 \text{ BTU/Kwh} * \left(\frac{29760}{29596} \right) = 9643 \text{ BTU/Kwh}$$

$$\begin{array}{r} \text{HEAT RATE PENALTY: } 9643 \\ 9260 \\ \hline = 383 \text{ BTU/Kwh} \end{array}$$

$$383 \text{ BTU/Kwh} * 8760 \frac{\text{hr}}{\text{yr}} * 29760 \text{ Kw} = 9.99 \times 10^{10} \text{ BTU/yr}$$

$$9.99 \times 10^{10} \frac{\text{BTU}}{\text{yr}} * \frac{1 \text{ lb}}{21515 \text{ BTU}} * \frac{24.8 \text{ cuft}}{16} = 1.15 \times 10^8 \frac{\text{BTU}}{\text{yr}}$$

P6 7111(EA) Natural Gas Penalty - Dry Low NOx Burners

Performance data for combustion turbine with uncontrolled emission
 is unavailable for Kissimmee project. Use data for P6 7111(EA)
 from Ref. 4. Heat Rate Penalty should be equivalent between
 two cases.

DO NOT WRITE IN THIS SPACE

PGN-175A



Owner KISSEMAEE Utilities Power Author
 Plant CANE Island Unit _____
 Project No. 17645 File No. _____
 Title Natural Gas Usage Penalty

Computed By R Lawson
 Date 7/27 1992
 Checked By _____
 Date _____ 19____
 Page 3 of 4

DO NOT WRITE IN THIS SPACE

Use data for: 59 °F Ambient temperature
Lower exhaust gas temperature
(978-986 °F)

	HEAT RATE BTU/kwh	Output Kw
Dry Low NOx Burners (25 ppm NOx)	10,530	83,080
Uncontrolled Emissions	10,480	83,500
	50 BTU/kwh	

$$50 \frac{\text{btu}}{\text{kwh}} * 8760 \frac{\text{hr}}{\text{yr}} * 83,080 \text{ Kw} = 3.64 \times 10^{10} \frac{\text{BTU}}{\text{yr}}$$

$$3.64 \times 10^{10} \frac{\text{BTU}}{\text{yr}} * \frac{1 \text{ lb}}{21,515 \text{ BTU}} * \frac{24.8 \text{ cu ft}}{16} = 4.195 \times 10^7 \frac{\text{cu ft}}{\text{yr}}$$

PL 711(EA) Natural Gas Penalty - SCR w/ Dry Low NOx Burners

Assumption: Estimated Net Power Reduction
 Due to SCR is 0.55%

Using 59 °F Ambient Temperature Data

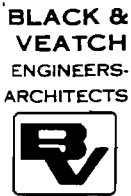
Net Power Decrease: $83,080 * 0.0055 = 457 \text{ Kw}$

	83,080
	457
Revised Total Net Output	<u>82,623 Kw</u>

Revised Heat Rate $10,530 * \left(\frac{83,080}{82,623} \right) = 10,588 \frac{\text{BTU}}{\text{Kw}}$

Total HEAT RATE PENALTY	10588
	<u>10480</u>
	108 $\frac{\text{BTU}}{\text{Kwh}}$

PGN-175A



Owner Kissimmee Utilities Power
 Plant PAINE Island Unit _____
 Project No. 17645 File No. _____
 Title Natural Gas Usage Penalty

Computed By R LAUSMAN
 Date 7/27 19 92
 Checked By _____
 Date _____ 19 _____
 Page 4 of 4

PG 7111(EA) Natural Gas Penalty - SCR w/ Dry Low NO_x Burners (Cont)

HEAT Rate Penalty = 108 BTU/kwh

$108 \frac{\text{BTU}}{\text{kwh}} * 83,080 \text{ kW} * 8760 \frac{\text{hr}}{\text{yr}} = 7.86 \times 10^{10} \frac{\text{BTU}}{\text{yr}}$

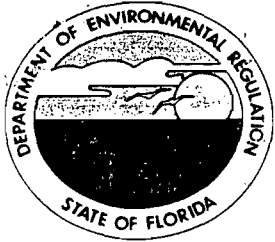
$7.86 \times 10^{10} \frac{\text{BTU}}{\text{yr}} * \frac{1 \text{ lb}}{21515 \text{ BTU}} * 24.8 \frac{\text{cu ft}}{\text{lb}} = 9.06 \times 10^7 \frac{\text{cu ft}}{\text{yr}}$

Results:

<u>CASE</u>	<u>Natural Gas Penalty (cu ft/yr)</u>	<u>Differential Penalty</u>
<u>LM 6000 w/ WATER INJECTION</u>	<u>9.92 x 10⁷</u>	<u>1.58 x 10⁷</u>
<u>LM 6000 w/ SCR & WATER INJECT.</u>	<u>1.15 x 10⁸</u>	
<u>PG 7111(EA) w/ Dry Low NO_x Burner</u>	<u>4.20 x 10⁷</u>	<u>4.84 x 10⁷</u>
<u>PG 7111(EA) w/ SCR & Dry Low NO_x Burner</u>	<u>9.06 x 10⁷</u>	

DO NOT WRITE IN THIS SPACE

RGN-175A



File Copy

Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

June 30, 1992

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. A. K. Sharma
Director of Power Supply
Kissimmee Utility Authority
P. O. Box 423219
Kissimmee, Florida 34742-3219

Dear Mr. Sharma:

Re: Kissimmee Utilities Authority
PSD-FL-182; AC 49-205703

The Department has received the application for a permit to construct a 180 MW cogeneration system at the Kissimmee Utilities Power Authority (KUPA) facility in Intercession City, Osceola County, Florida. Based on our initial review of your proposal, we have determined that additional information is needed in order to process this application. Please complete the application by supplying the information requested below:

DER Form 17-1.202(1)

1. Complete page 1 of 12.
2. Page 3 of 12, Section E: What is the maximum requested operating time for this facility? How many hours on oil? How many hours on gas?
3. Page 4 of 12, Pollutant Information: Show basis of emission rate calculations (lb/hr, ton/yr, lb/MMBtu, ppmv) for each of the pollutants emitted by this project. Use the low heating value (LHV) of the fuels, different percentage loads and proposed operating hours (for oil and gas) in the calculations.
4. Page 5 of 12: What is the maximum sulfur content of the No. 2 fuel oil that will be used, 0.05% or 0.3% sulfur by weight? Please clarify.

BACT ANALYSIS

1. It appears the cost effectiveness (\$/tons removed) presented on using SCR technology is high when compared to similar projects. To document this estimate, please expand the BACT analysis for

NO_x. Include a table summarizing the emission reductions, economic, energy, and environmental impacts of the control technology chosen vs. the SCR technology rejected.

2. Section 4.2.3.(2): What is the net energy penalty in millions cu. ft. of natural gas per year associated with the use of the water injection/low NO_x burners design and the use of a SCR system? Show the basis of these calculations.
3. Section 4.2.5.(3): What is the cost effectiveness (\$/ton NO_x removed) of the proposed water injection/low NO_x burner technology?
4. Section 4.2.5.(4): What is the efficiency of these turbines? Calculate Y (refer to the NSPS, Subpart GG).
5. Submit an emissions test data for each type of turbine.

GENERAL

6. Submit a flow diagram of the proposed cogeneration system (simple and combined cycle units). Include all stacks associated with this system.
7. Submit a manufacturer's specifications manual for the proposed gas turbines.
8. Heat Recovery Steam Generator: Submit manufacturer's name, model number, generator name, plate rating (gross MW), maximum steam production rate (lb/hr and/or horsepower).
9. Steam Turbine Generator: What is the nominal power (MW) output of this steam turbine? What is the steam input to this turbine?
10. Storage Tanks: What is the estimated annual throughput and type of air pollution control for the tanks? What are the estimated emissions?

MODELING - CHASSAHOWITZKA CLASS I AREA

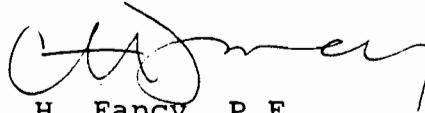
11. Please provide an NO₂ PSD Class I analysis for the project. If the project's predicted NO₂ impact at the Chassahowitzka National Wilderness Area is greater than the National Park Service (NPS) recommended significance level of 0.025 ug/m³, annual average, please provide a cumulative NO₂ Class I analysis.

Mr. A.K. Sharma
Page 3 of 3

12. Based on verbal communication with the NPS, please expand the Air Quality Related Values (AQRVs) analysis to include aquatic impacts.

Should you have any questions on this matter, please contact Teresa (review engineer) or Cleve Holladay (meteorologist) at (904) 488-1344 or write to me at the above address. The processing of your application will continue once this information is received.

Sincerely,



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

CHF/TH/plm

cc: T. A. Kaczmariski, B & V FAX
Charles Collins, CD

Ready File
Cleve Holladay }
Teresa Heron } 6-30-92 RAM

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- 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 next to the article number.

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:
Mr. A.K. Sharma
Director of Power Supply
Kissimmee Utility Auth.
P.O. Box 423219
Kissimmee, FL 34742-3219

4a. Article Number
P 710 058 498

4b. Service Type

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

7. Date of Delivery
JUL - 6 1992 *Ch*

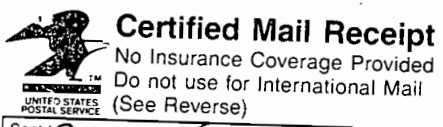
5. Signature (Addressee)

6. Signature (Agent)
J. Boyd

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

PS Form 3811, October 1990 *U.S. GPO: 1990-273-881 **DOMESTIC RETURN RECEIPT**

P 710 058 498



Sent to <i>AK Sharma</i>	
Street & No. <i>Kissimmee UA</i>	
P.O., State & ZIP Code <i>KISS, FL</i>	
Postage	- \$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	\$
Postmark or Date	<i>6-30-92</i> <i>AC 49-205703</i> <i>PSD-FL-182</i>

PS Form 3800, June 1990



Best Available Copy
Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2

Lewton Chiles, Governor

Carol M. Browner, Sec

FAX TRANSMITTAL COVER

DATE: 30 June 92

TO: Amy CARLSON
Black + Veatch
Kansas City, Mo

PHONE: 913-339-7425

FAX: 913-339-2934

NUMBER OF PAGES TRANSMITTED (INCLUDING COVER SHEET) 4

* * * * *

FROM: Cleve Holladay
Bureau of Air Regulation

PHONE: SUNCOM 278-1344 OR (904) 488-1344

FAX: (904) 922-6979

PLEASE CONTACT AT ABOVE NUMBER IF TRANSMISSION IS INCOMPLETE OR UNREADABLE.

COMMENTS:

KVA letter



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

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

JUN 16 1992

RECEIVED

JUN 22 1992

Division of Air
Resources Management

4APT-AEB

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: Kissimmee Utility Authority, Cane Island Project
(PSD-FL-182)

Dear Mr. Fancy:

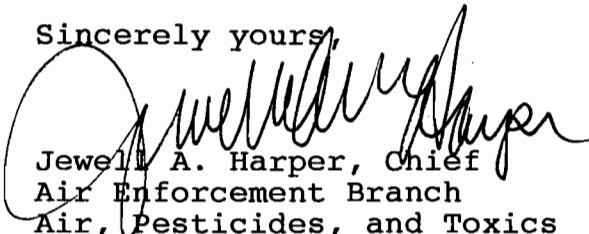
This is to acknowledge receipt of the application for a Prevention of Significant Deterioration (PSD) permit for the above referenced facility's proposed construction, and your letter to the applicant, dated January 3, 1992, requesting additional modeling information. The facility will consist of two identical simple cycle combustion turbines, each nominally rated at 40 megawatts of electrical generating capacity, designed to fire either natural gas or No. 2 distillate fuel oil.

The applicant proposes to limit NO_x emissions through the use of maximum water injection, to limit SO₂ and H₂SO₄ emissions through limiting the sulfur content of the No. 2 distillate fuel oil, to limit CO and VOC emissions through the use of efficient combustion, to limit PM/PM₁₀ and Be emissions through efficient combustion and the use of clean fuels.

We have reviewed the package as submitted and have the following comment concerning air modeling. You have requested an air quality related analysis and cumulative Class I increment analysis, to be based on a calculation distance of 115 kilometers (km), rather than the 150 km distance used in the application. In addition, the applicant will need to complete a visibility analysis using the corrected distance of 115 km.

We have no adverse comments on the remainder of the package. Thank you for the opportunity to review and comment on this package. If you have any questions or comments, please contact either Mr. Lew Nagler for modeling/monitoring or 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

cc: S. Dixon
C. Holladay
C. Collins, E Dist.
C. Shaller, OPS
A. Sharma, KUA
CHF/PL



BLACK & VEATCH

8400 Ward Parkway, P.O. Box No. 8405, Kansas City, Missouri 64114, (913) 339-2000

Kissimmee Utility Authority
Cane Island Combustion Turbine Project

B&V Project 17645
B&V File 32.0600
June 22, 1992

Florida Department of Environmental Regulations
Bureau of Air Regulation
Twin Towers Office Building
2600 Blairstone Road
Tallahassee, Florida 32399-2400

Subject: Additional Copies of PSD Permit
Permit Application for KUA Cane
Run Facility

Attention: Mr. C. H. Fancy


Gentlemen:

Enclosed are four additional copies of the Revised Prevention of Significant Deterioration permit application for the Cane Island Combustion Turbine Project. These additional copies were requested by Cleve Holladay on June 22, 1992. One copy of the application has also been provided to the National Park Service.

If you have any questions, please call Amy L. Carlson at Black & Veatch (913) 339-7425 or me at (913) 339-2164.

Very truly yours,

BLACK & VEATCH


David M. Lefebvre *for*

alc
Enclosures

cc: A. K. Sharma, (KUA) w/o enclosures



BLACK & VEATCH

8400 Ward Parkway, P.O. Box No. 8405, Kansas City, Missouri 64114, (913) 339-2000

Kissimmee Utility Authority
Cane Island Combustion Turbine Project

B&V Project 17645
B&V File 32.0600
June 12, 1992

RECEIVED

JUN 15 1992

Florida Department of Environmental Regulations
Bureau of Air Regulation
Twin Towers Office Building
2600 Blainstone Road
Tallahassee, Florida 32399-2400

Bureau of
Air Regulation

Subject: Revised PSD Permit Application

Attention: Mr. C. H. Fancy

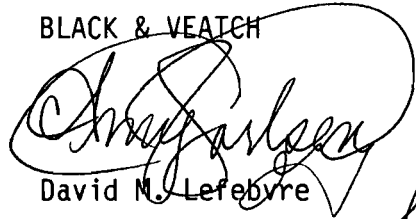
Gentlemen:

On behalf of Kissimmee Utility Authority, Black & Veatch is submitting the Revised Prevention of Significant Deterioration (PSD) permit application for the Cane Island Combustion Turbine Project. The previous application was submitted in November 1991 to the FDER. That application was based on approximately 80 MW of simple cycle combustion turbine capacity. This application includes the ambient air quality impact analysis for 160 MW of combustion turbine power generation.

Enclosed are two (2) copies of the application and the associated diskette and paper copies of the air dispersion modeling output. If you have any questions regarding the application, please call Amy L. Carlson at Black & Veatch (913) 339-7425 or me at (913) 339-2164.

Very truly yours,

BLACK & VEATCH


David M. Lefebvre *for*

alc
Enclosures

cc: A. K. Sharma, Director of Power Supply (KUA)

J. Reyer
C. Hoffaday
C. Collins, EPA Dist
G. Harper, EPA
C. Shaver, NPS



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 1600 Blair Stone Road • Tallahassee, Florida 32399-2400

DER Form # _____
Date _____
Effective Date _____
DER Application No. _____

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES
Combustion Turbines

SOURCE TYPE: Simple and Combined Cycle _____ [X] New [] Existing

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

COMPANY NAME: Kissimmee Utility Authority COUNTY: Osceola

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

SOURCE LOCATION: Street N/A City Intercession

UTM: East 447.722 km North 3127.685 km

Latitude 28° 16' 35" N Longitude 81° 32' 00"

APPLICANT NAME AND TITLE: Kissimmee Utility Authority

APPLICANT ADDRESS: Post Office Box 423219 102 Lakeshore Boulevard Kissimmee Fl 34

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Kissimmee Utility Authority

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. I agree to maintain and operate the pollution control source and pollution facilities in such a manner as to comply with the provision of Chapter 403, Statutes, and all the rules and regulations of the department and revisions thereto. 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 permit establishment.

*Attach letter of authorization

Signed: A. K. Sharma

A. K. Sharma Director of Power Supply
Name and Title (Please Type)

Kissimmee Utility Authority

Date: 6/10/92 Telephone No. 407-847-6000

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,

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

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1.1 ESTIMATED PERFORMANCE - PG7111(EA)

LOAD CONDITION		BASE	BASE	BASE
AMBIENT TEMP.	- Deg F.	102	72	20
OUTPUT	- kW	72530.	82490.	98040.
HEAT RATE (LHV)	- Btu/kWh	11300.	11050.	10750.
HEAT CONS. (LHV) X10-6	- Btu/h	819.6	911.5	1053.9
EXHAUST FLOW X10-3	- lb/h	2134.0	2324.0	2623.0
EXHAUST TEMP	- Deg F.	1012.	989.	953.
EXHAUST HEAT X10-6	- Btu/h	509.5	551.2	625.3
WATER FLOW	- lb/h	29560.	42590.	53570.
NOX	- ppmvd @ 15% O2	42.	42.	42.
NOX AS NO2	- lb/h	145.	162.	187.
CO	- ppmvd	10.	10.	10.
CO	- lb/h	19.	21.	24.
UHC	- ppmvw	7.	7.	7.
UHC	- lb/h	8.	9.	10.
VOC	- ppmvw	3.5	3.5	3.5
VOC	- lb/h	4.	4.5	5.
SO2	- ppmvw	54.	55.	56.
SO2	- lb/h	253.	281.	325.
SO3	- ppmvw	2.	3.	3.
SO3	- lb/h	17.	19.	22.
SULFUR MIST	- lb/h	27.	30.	34.
PART	- lb/h	15.0	15.0	15.0
EXHAUST ANALYSIS % VOL.				
ARGON		0.87	0.87	0.88
NITROGEN		71.53	72.84	73.55
OXYGEN		12.81	12.98	12.99
CARBON DIOXIDE		4.17	4.29	4.40
WATER		10.63	9.02	8.18
SITE CONDITIONS				
ELEVATION	- ft.	70		
SITE PRESSURE	- psia	14.66		
INLET LOSS	- in. Water	2.5		
EXHAUST LOSS	- in. Water	5.5		
RELATIVE HUMIDITY	- %	60		
FUEL TYPE	-			DISTILLATE
FUEL LHV	- Btu/lb	18407		
APPLICATION	-			746 AIR COOLED GENERATOR
COMBUSTION SYSTEM	-			QUIET COMBUSTOR

EMISSION INFORMATION BASED ON GE RECOMMENDED MEASUREMENT METHODS.
 NO_x EMISSIONS ARE CORRECTED TO 15% O₂ WITHOUT HEAT RATE CORRECTION AND ARE
 NOT CORRECTED TO ISO REFERENCE CONDITIONS PER 40CFR 60.335(a)(1)(i).
 NO_x LEVELS SHOWN WILL BE CONTROLLED BY ALGORITHMS WITHIN THE
 SPEEDTRONIC CONTROL SYSTEM.

DISTILLATE FUEL IS ASSUMED TO HAVE 0.015% FUEL BOUND NITROGEN, OR LESS.
 FUEL BOUND NITROGEN AMOUNTS GREATER THAN 0.015% WILL ADD TO THE REPORTED
 NO_x VALUE.

SULFUR EMISSIONS ARE BASED ON 0.3% TOTAL SULFUR CONTENT.

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1.2 ESTIMATED PERFORMANCE – PG7111(EA)

LOAD CONDITION		BASE	BASE	BASE
AMBIENT TEMP.	- Deg F.	102	72	20
OUTPUT	- kW	72010.	81880.	97360.
HEAT RATE (LHV)	- Btu/kWh	11260.	11000.	10700.
HEAT CONS. (LHV) X10-6	- Btu/h	810.8	900.7	1041.8
EXHAUST FLOW X10-3	- lb/h	2129.0	2318.0	2616.0
EXHAUST TEMP	- Deg F.	1013.	990.	954.
EXHAUST HEAT X10-6	- Btu/h	508.0	549.1	623.2
WATER FLOW	- lb/h	24660.	36500.	46370.
NOX	- ppmvd @ 15% O2	42.	42.	42.
NOX AS NO2	- lb/h	144.	160.	185.
CO	- ppmvd	20.	20.	20.
CO	- lb/h	38.	42.	47.
UHC	- ppmvw	7.	7.	7.
UHC	- lb/h	8.	9.	10.
VOC	- ppmvw	3.5	3.5	3.5
VOC	- lb/h	4.	4.5	5.
SO2	- ppmvw	53.	54.	56.
SO2	- lb/h	250.	278.	322.
SO3	- ppmvw	3.	3.	2.
SO3	- lb/h	17.	18.	21.
SULFUR MIST	- lb/h	26.	29.	34.
PART	- lb/h	15.0	15.0	15.0
EXHAUST ANALYSIS % VOL.				
ARGON		0.86	0.88	0.88
NITROGEN		71.81	73.16	73.89
OXYGEN		12.93	13.12	13.13
CARBON DIOXIDE		4.14	4.25	4.37
WATER		10.26	8.59	7.73
SITE CONDITIONS				
ELEVATION	- ft.	70		
SITE PRESSURE	- psia	14.66		
INLET LOSS	- in. Water	2.5		
EXHAUST LOSS	- in. Water	5.5		
RELATIVE HUMIDITY	- %	60		
FUEL TYPE	-			DISTILLATE
FUEL LHV	- Btu/lb	18467		
APPLICATION	-			COOLED GENERATOR
COMBUSTION SYSTEM	-			DRY LOW NOX I

EMISSION INFORMATION BASED ON GE RECOMMENDED MEASUREMENT METHODS.
NOx EMISSIONS ARE CORRECTED TO 15% O2 WITHOUT HEAT RATE CORRECTION AND ARE NOT CORRECTED TO ISO REFERENCE CONDITIONS PER 40CFR 60.335(a)(1)(i).
NOx LEVELS SHOWN WILL BE CONTROLLED BY ALGORITHMS WITHIN THE SPEEDTRONIC CONTROL SYSTEM.
DISTILLATE FUEL IS ASSUMED TO HAVE 0.015% FUEL BOUND NITROGEN, OR LESS. FUEL BOUND NITROGEN AMOUNTS GREATER THAN 0.015% WILL ADD TO THE REPORTED NOx VALUE.
SULFUR EMISSIONS ARE BASED ON 0.3% TOTAL SULFUR CONTENT.
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1.3 ESTIMATED PERFORMANCE - PG7111(EA)

LOAD CONDITION		BASE	75%	50%	25%
AMBIENT TEMP.	- Deg F.	102	102	102	102
OUTPUT	- kW	72010.	53990.	36020.	18010.
HEAT RATE (LHV)	- Btu/kWh	11260.	12240.	13760.	19280.
HEAT CONS. (LHV) X10-6	- Btu/h	810.8	660.8	495.6	347.2
EXHAUST FLOW X10-3	- lb/h	2129.0	1742.0	1731.0	1722.0
EXHAUST TEMP	- Deg F.	1013.	1037.	855.	698.
EXHAUST HEAT X10-6	- Btu/h	508.0	432.5	344.2	269.1
WATER FLOW	- lb/h	24660.	16960.	7160.	0.
NOX	- ppmvd @ 15% O2	42.	42.	*	*
NOX AS NO2	- lb/h	144.	116.	*	*
CO	- ppmvd	20.	*	*	*
CO	- lb/h	38.	*	*	*
UHC	- ppmvw	7.	*	*	*
UHC	- lb/h	8.	*	*	*
VOC	- ppmvw	3.5	*	*	*
VOC	- lb/h	4.	*	*	*
SO2	- ppmvw	53.	53.	40.	28.
SO2	- lb/h	250.	204.	153.	107.
SO3	- ppmvw	3.	3.	2.	2.
SO3	- lb/h	17.	13.	10.	7.
SULFUR MIST	- lb/h	26.	21.	16.	11.
PART	- lb/h	15.0	15.0	15.0	15.0
EXHAUST ANALYSIS % VOL.					
ARGON		0.86	0.87	0.88	0.89
NITROGEN		71.81	72.01	73.08	73.94
OXYGEN		12.93	13.06	14.91	16.55
CARBON DIOXIDE		4.14	4.09	3.07	2.16
WATER		10.26	9.97	8.06	6.46
SITE CONDITIONS					
ELEVATION	- ft.	70			
SITE PRESSURE	- psia	14.66			
INLET LOSS	- in. Water	2.5			
EXHAUST LOSS	- in. Water	5.5			
RELATIVE HUMIDITY	- %	60			
FUEL TYPE	-	DISTILLATE		DISTILLATE	
FUEL LHV	- Btu/lb	18467			
APPLICATION	-	7A6 AIR COOLED GENERATOR			
COMBUSTION SYSTEM	-	DRY LOW NOX I		DRY LOW NOX I	

EMISSION INFORMATION BASED ON GE RECOMMENDED MEASUREMENT METHODS.
 NO_x EMISSIONS ARE CORRECTED TO 15% O₂ WITHOUT HEAT RATE CORRECTION AND ARE NOT CORRECTED TO ISO REFERENCE CONDITIONS PER 40CFR 60.335(a)(1)(i).
 NO_x LEVELS SHOWN WILL BE CONTROLLED BY ALGORITHMS WITHIN THE SPEEDTRONIC CONTROL SYSTEM.

DISTILLATE FUEL IS ASSUMED TO HAVE 0.015% FUEL BOUND NITROGEN, OR LESS. FUEL BOUND NITROGEN AMOUNTS GREATER THAN 0.015% WILL ADD TO THE REPORTED NO_x VALUE.

* DATA NOT AVAILABLE

SULFUR EMISSIONS ARE BASED ON 0.3% TOTAL SULFUR CONTENT.

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1.4 ESTIMATED PERFORMANCE – PG7111(EA)

LOAD CONDITION		BASE	75%	50%	25%
AMBIENT TEMP.	- Deg F.	72	72	72	72
OUTPUT	- kW	81880.	61450.	40940.	20470.
HEAT RATE (LHV)	- Btu/kWh	11000.	11820.	13080.	17820.
HEAT CONS. (LHV) X10-6	- Btu/h	900.7	726.3	535.5	364.8
EXHAUST FLOW X10-3	- lb/h	2318.0	1868.0	1851.0	1835.0
EXHAUST TEMP	- Deg F.	990.	1014.	822.	660.
EXHAUST HEAT X10-6	- Btu/h	549.1	461.3	360.9	277.6
WATER FLOW	- lb/h	36500.	25810.	12130.	0.
NOX	- ppmvd @ 15% O2	42.	42.	*	*
NOX AS NO2	- lb/h	160.	127.	*	*
CO	- ppmvd	20.	*	*	*
CO	- lb/h	42.	*	*	*
UHC	- ppmvw	7.	*	*	*
UHC	- lb/h	9.	*	*	*
VOC	- ppmvw	3.5	*	*	*
VOC	- lb/h	4.	*	*	*
SO2	- ppmvw	54.	54.	40.	28.
SO2	- lb/h	278.	224.	165.	113.
SO3	- ppmvw	3.	3.	2.	1.
SO3	- lb/h	18.	15.	11.	7.
SULFUR MIST	- lb/h	29.	24.	17.	12.
PART	- lb/h	15.0	15.0	15.0	15.0
EXHAUST ANALYSIS % VOL.					
ARGON		0.88	0.87	0.89	0.91
NITROGEN		73.16	73.40	74.73	75.94
OXYGEN		13.12	13.24	15.27	17.10
CARBON DIOXIDE		4.25	4.22	3.13	2.15
WATER		8.59	8.27	5.98	3.90
SITE CONDITIONS					
ELEVATION	- ft.	70			
SITE PRESSURE	- psia	14.66			
INLET LOSS	- in. Water	2.5			
EXHAUST LOSS	- in. Water	5.5			
RELATIVE HUMIDITY	- %	60			
FUEL TYPE	-			DISTILLATE	
FUEL LHV	- Btu/lb	18467			
APPLICATION	-			7A6 AIR COOLED GENERATOR	
COMBUSTION SYSTEM	-			DRY LOW NOX I	

EMISSION INFORMATION BASED ON GE RECOMMENDED MEASUREMENT METHODS.
 NO_x EMISSIONS ARE CORRECTED TO 15% O₂ WITHOUT HEAT RATE CORRECTION AND ARE NOT CORRECTED TO ISO REFERENCE CONDITIONS PER 40CFR 60.335(a)(1)(i).
 NO_x LEVELS SHOWN WILL BE CONTROLLED BY ALGORITHMS WITHIN THE SPEEDTRONIC CONTROL SYSTEM.

DISTILLATE FUEL IS ASSUMED TO HAVE 0.015% FUEL BOUND NITROGEN, OR LESS.
 FUEL BOUND NITROGEN AMOUNTS GREATER THAN 0.015% WILL ADD TO THE REPORTED NO_x VALUE.

* DATA NOT AVAILABLE

SULFUR EMISSIONS ARE BASED ON 0.3% TOTAL SULFUR CONTENT.

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1.5 ESTIMATED PERFORMANCE - PG7111(EA)

LOAD CONDITION		BASE	75%	50%	25%
AMBIENT TEMP.	- Deg F.	102	102	102	102
OUTPUT	- kW	70640.	53000.	35340.	17660.
HEAT RATE (LHV)	- Btu/kWh	10930.	11960.	13600.	19410.
HEAT CONS. (LHV) X10-6	- Btu/h	772.1	633.9	480.6	342.8
EXHAUST FLOW X10-3	- lb/h	2099.0	1720.0	1720.0	1720.0
EXHAUST TEMP	- Deg F.	1016.	1038.	849.	690.
EXHAUST HEAT X10-6	- Btu/h	501.1	427.6	339.5	266.0
NOX	- ppmvd @ 15% O2	25.	25.	25.	72.
NOX AS NO2	- lb/h	78.	63.	47.	95.
CO	- ppmvd	20.	20.	20.	420.
CO	- lb/h	38.	31.	31.	672.
UHC	- ppmvw	7.	7.	7.	30.
UHC	- lb/h	8.	7.	7.	30.
VOC	- ppmvw	1.4	1.4	1.4	6.
VOC	- lb/h	1.6	1.4	1.4	6.
PART	- lb/h	7.0	7.0	7.0	7.0
EXHAUST ANALYSIS % VOL.					
ARGON		0.88	0.87	0.88	0.89
NITROGEN		72.58	72.57	73.12	73.61
OXYGEN		13.47	13.52	15.13	16.57
CARBON DIOXIDE		3.05	3.03	2.29	1.63
WATER		10.02	10.01	8.58	7.30
SITE CONDITIONS					
ELEVATION	- ft.	70			
SITE PRESSURE	- psia	14.66			
INLET LOSS	- in. Water	2.5			
EXHAUST LOSS	- in. Water	5.5			
RELATIVE HUMIDITY	- %	60			
FUEL TYPE	-	CUST GAS			
FUEL LHV	- Btu/lb	21060			
APPLICATION	-	7A6 AIR COOLED GENERATOR			
COMBUSTION SYSTEM	-	DRY LOW NOX I			

EMISSION INFORMATION BASED ON GE RECOMMENDED MEASUREMENT METHODS.
 NO_x EMISSIONS ARE CORRECTED TO 15% O₂ WITHOUT HEAT RATE CORRECTION AND ARE NOT CORRECTED TO ISO REFERENCE CONDITIONS PER 40CFR 60.335(a)(1)(i).
 NO_x LEVELS SHOWN WILL BE CONTROLLED BY ALGORITHMS WITHIN THE SPEEDTRONIC CONTROL SYSTEM.

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1.6 ESTIMATED PERFORMANCE - PG7111(EA)

LOAD CONDITION		BASE	75%	50%	25%	PEAK
AMBIENT TEMP.	- Deg F	20	20	20	20	20
OUTPUT	- kW	100060.	75080.	50050.	25020.	108130.
HEAT RATE (LHV)	- Btu/kWh	10700.	10980.	12030.	15780.	10770.
HEAT CONS. (LHV) X10-6	- Btu/h	1070.6	824.4	602.1	394.8	1164.6
EXHAUST FLOW X10-3	- lb/h	2621.0	2594.0	2574.0	2040.0	2632.0
EXHAUST TEMP	- Deg F.	951.	772.	605.	581.	1014.
EXHAUST ENERGY X10-6	- Btu/h	630.3	499.5	384.3	291.1	682.5
WATER FLOW	- lb/h	57740.	36290.	22070.	0.	67250.
NOX	- ppmvd @ 15% O2	25.	25.	25.	63.	25.
NOX AS NO2	- lb/h	108	82.	59.	96.	117.
CO	- ppmvd	10.	495.	840.	40.	10.
CO	- lb/h	23.	1185.	2010.	75.	23.
UHC	- ppmvw	7.	190.	480.	*	7.
UHC	- lb/h	10.	270.	685.	*	8.
VOC	- ppmvw	1.4	40.	95.	*	1.4
VOC	- lb/h	2.0	55.	135.	*	1.6
PART	- lb/h	5.0	5.0	5.0	5.0	5.0
EXHAUST ANALYSIS % VOL.						
ARGON		0.87	0.89	0.91	0.92	0.87
NITROGEN		72.63	74.17	75.37	76.69	72.00
OXYGEN		12.82	14.73	16.42	17.44	12.13
CARBON DIOXIDE		3.39	2.64	1.94	1.61	3.65
WATER		10.29	7.57	5.36	3.34	11.35
SITE CONDITIONS						
ELEVATION	- ft.	70				
SITE PRESSURE	- psia	14.66				
INLET LOSS	- in. Water	2.5				
EXHAUST LOSS	- in. Water	5.5				
RELATIVE HUMIDITY	- %	60				
FUEL TYPE	-	CUST GAS				
FUEL LHV	- Btu/lb	21060				
APPLICATION	-	7A6 AIR COOLED GENERATOR				
COMBUSTION SYSTEM	-	QUIET COMBUSTOR				

EMISSION INFORMATION BASED ON GE RECOMMENDED MEASUREMENT METHODS.
 NO_x EMISSIONS ARE CORRECTED TO 15% O₂ WITHOUT HEAT RATE CORRECTION AND ARE NOT CORRECTED TO ISO REFERENCE CONDITIONS PER 40CFR 60.335(a)(1)(i).
 NO_x LEVELS SHOWN WILL BE CONTROLLED BY ALGORITHMS WITHIN THE SPEEDTRONIC CONTROL SYSTEM.

* DATA NOT AVAILABLE.

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1.7 ESTIMATED PERFORMANCE – PG7111(EA)

LOAD CONDITION		BASE	75%	50%	25%	PEAK
AMBIENT TEMP.	- Deg F	102	102	102	102	102
OUTPUT	- kW	74760.	56050.	37350.	18690.	81850.
HEAT RATE (LHV)	- Btu/kWh	11260.	11820.	13300.	18490.	11210.
HEAT CONS. (LHV) X10-6	- Btu/h	841.8	662.5	496.8	345.6	917.5
EXHAUST FLOW X10-3	- lb/h	2137.0	2122.0	2111.0	1753.0	2144.0
EXHAUST TEMP	- Deg F	1010.	851.	702.	677.	1072.
EXHAUST ENERGY X10-6	- Btu/h	515.5	420.4	333.5	265.2	557.2
WATER FLOW	- lb/h	37150.	23400.	14220.	0.	43990.
NOX	- ppmvd @ 15% O2	25.	25.	25.	49.	25.
NOX AS NO2	- lb/h	85	66.	49.	66.	92.
CO	- ppmvd	10.	230.	375.	35.	10.
CO	- lb/h	19.	440.	710.	55.	19.
UHC	- ppmvw	7.	75.	115.	7.	7.
UHC	- lb/h	9.	85.	130.	7.	7.
VOC	- ppmvw	1.4	15.	25.	1.4	1.4
VOC	- lb/h	1.8	20.	30.	1.4	1.4
PART	- lb/h	5.0	5.0	5.0	5.0	5.0
EXHAUST ANALYSIS % VOL.						
ARGON		0.85	0.87	0.86	0.88	0.84
NITROGEN		70.44	71.67	72.64	73.66	69.89
OXYGEN		12.54	14.20	15.72	16.62	11.86
CARBON DIOXIDE		3.23	2.56	1.93	1.61	3.50
WATER		12.94	10.71	8.85	7.23	13.92
SITE CONDITIONS						
ELEVATION	- ft.	70				
SITE PRESSURE	- psia	14.66				
INLET LOSS	- in. Water	2.5				
EXHAUST LOSS	- in. Water	5.5				
RELATIVE HUMIDITY	- %	60				
FUEL TYPE	-	CUST GAS				
FUEL LHV	- Btu/lb	21060				
APPLICATION	-	7A6 AIR COOLED GENERATOR				
COMBUSTION SYSTEM	-	QUIET COMBUSTOR				

EMISSION INFORMATION BASED ON GE RECOMMENDED MEASUREMENT METHODS.
 NO_x EMISSIONS ARE CORRECTED TO 15% O₂ WITHOUT HEAT RATE CORRECTION AND ARE
 NOT CORRECTED TO ISO REFERENCE CONDITIONS PER 40CFR 60.335(a)(1)(i).
 NO_x LEVELS SHOWN WILL BE CONTROLLED BY ALGORITHMS WITHIN THE
 SPEEDTRONIC CONTROL SYSTEM.

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1.8 ESTIMATED PERFORMANCE - PG7111(EA)

LOAD CONDITION		BASE	75%	50%	25%	PEAK
AMBIENT TEMP.	- Deg F .	72	72	72	72	72
OUTPUT	- kW	82490.	61900.	41250.	20620.	89940.
HEAT RATE (LHV)	- Btu/kWh	11050.	11480.	12760.	17500.	11060.
HEAT CONS. (LHV) X10-6	- Btu/h	911.5	710.6	526.4	360.9	994.7
EXHAUST FLOW X10-3	- lb/h	2324.0	2301.0	2286.0	1869.0	2335.0
EXHAUST TEMP	- Deg F.	989.	824.	667.	641.	1051.
EXHAUST ENERGY X10-6	- Btu/h	551.2	446.1	349.5	273.3	596.5
WATER FLOW	- lb/h	42590.	24440.	13680.	0.	51800.
NOX	- ppmvd @ 15% O2	42.	42.	42.	88.	42.
NOX AS NO2	- lb/h	162	125.	91.	129.	177.
CO	- ppmvd	10.	50.	135.	15.	10.
CO	- lb/h	21.	105.	280.	30.	21.
UHC	- ppmvw	7.	7.	7.	7.	7.
UHC	- lb/h	9.	9.	9.	7.	7.
VOC	- ppmvw	3.5	3.5	3.5	3.5	3.5
VOC	- lb/h	4.5	4.5	4.5	3.5	3.5
SO2	- ppmvw	55.	43.	32.	27.	59.
SO2	- lb/h	281.	219.	162.	111.	307.
SO3	- ppmvw	3.	2.	2.	1.	4.
SO3	- lb/h	19.	15.	11.	8.	20.
SULFUR MIST	- lb/h	30.	23.	17.	12.	32.
PART	- lb/h	15.0	15.0	15.0	15.0	15.0
EXHAUST ANALYSIS % VOL.						
ARGON		0.87	0.89	0.91	0.90	0.8
NITROGEN		72.84	74.15	75.07	75.98	72.2
OXYGEN		12.98	14.75	16.33	17.21	12.2
CARBON DIOXIDE		4.29	3.36	2.50	2.09	4.6
WATER		9.02	6.85	5.19	3.82	9.9
SITE CONDITIONS						
ELEVATION	- ft.	70				
SITE PRESSURE	- psia	14.66				
INLET LOSS	- in. Water	2.5				
EXHAUST LOSS	- in. Water	5.5				
RELATIVE HUMIDITY	- %	60				
FUEL TYPE	-					
FUEL LHV	- Btu/lb	18467				
APPLICATION	-					
COMBUSTION SYSTEM	-					

EMISSION INFORMATION BASED ON GE RECOMMENDED MEASUREMENT METHODS.
NO_x EMISSIONS ARE CORRECTED TO 15% O₂ WITHOUT HEAT RATE CORRECTION AND ARE NOT CORRECTED TO ISO REFERENCE CONDITIONS PER 40CFR 60.335(a)(1)(i).
NO_x LEVELS SHOWN WILL BE CONTROLLED BY ALGORITHMS WITHIN THE SPEEDTRONIC CONTROL SYSTEM.
DISTILLATE FUEL IS ASSUMED TO HAVE 0.015% FUEL BOUND NITROGEN, OR LESS. FUEL BOUND NITROGEN AMOUNTS GREATER THAN 0.015% WILL ADD TO THE REPORTED NO_x VALUE.
SULFUR EMISSIONS ARE BASED ON 0.3% TOTAL SULFUR CONTENT.

1.10 ESTIMATED PERFORMANCE – PG7111(EA)

LOAD CONDITION		BASE	75%	50%	25%	PEAK
AMBIENT TEMP.	- Deg F	20	20	20	20	20
OUTPUT	- kW	98040.	73510.	49000.	24530.	106270.
HEAT RATE (LHV)	- Btu/kWh	10750.	11010.	12080.	16020.	10820.
HEAT CONS. (LHV) X10-6	- Btu/h	1053.9	809.3	591.9	393.0	1149.8
EXHAUST FLOW X10-3	- lb/h	2623.0	2593.0	2572.0	2042.0	2637.0
EXHAUST TEMP	- Deg F.	953.	775.	609.	582.	1015.
EXHAUST ENERGY X10-6	- Btu/h	625.3	496.6	383.6	290.9	677.3
WATER FLOW	- lb/h	53570.	30020.	16600.	0.	65050.
NOX	- ppmvd @ 15% O2	42.	42.	42.	94.	42.
NOX AS NO2	- lb/h	187	142.	102.	150.	204.
CO	- ppmvd	10.	70.	160.	15.	10.
CO	- lb/h	24.	170.	384.	30.	24.
UHC	- ppmvw	7.	7.	10.	7.	7.
UHC	- lb/h	10.	10.	15.	10.	8.
VOC	- ppmvw	3.5	3.5	5.	3.5	3.5
VOC	- lb/h	5.	5.	7.5	5.	4.
SO2	- ppmvw	56.	44.	32.	27.	61.
SO2	- lb/h	325.	250.	183.	121.	355.
SO3	- ppmvw	3.	2.	2.	1.	3.
SO3	- lb/h	22.	16.	12.	8.	23.
SULFUR MIST	- lb/h	34.	26.	19.	13.	37.
PART	- lb/h	15.0	15.0	15.0	15.0	15.0
EXHAUST ANALYSIS % VOL.						
ARGON		0.88	0.90	0.92	0.94	0.88
NITROGEN		73.55	75.04	76.06	77.04	72.88
OXYGEN		12.99	14.91	16.58	17.49	12.25
CARBON DIOXIDE		4.40	3.42	2.51	2.09	4.76
WATER		8.18	5.73	3.93	2.45	9.23
SITE CONDITIONS						
ELEVATION	- ft.	70				
SITE PRESSURE	- psia	14.66				
INLET LOSS	- in. Water	2.5				
EXHAUST LOSS	- in. Water	5.5				
RELATIVE HUMIDITY	- %	60				
FUEL TYPE	-					DISTILLATE
FUEL LHV	- Btu/lb	18467				
APPLICATION	-					7A6 AIR COOLED GENERATOR
COMBUSTION SYSTEM	-					QUIET COMBUSTOR

EMISSION INFORMATION BASED ON GE RECOMMENDED MEASUREMENT METHODS.
 NO_x EMISSIONS ARE CORRECTED TO 15% O₂ WITHOUT HEAT RATE CORRECTION AND ARE NOT CORRECTED TO ISO REFERENCE CONDITIONS PER 40CFR 60.335(a)(1)(i).
 NO_x LEVELS SHOWN WILL BE CONTROLLED BY ALGORITHMS WITHIN THE SPEEDTRONIC CONTROL SYSTEM.
 DISTILLATE FUEL IS ASSUMED TO HAVE 0.015% FUEL BOUND NITROGEN, OR LESS. FUEL BOUND NITROGEN AMOUNTS GREATER THAN 0.015% WILL ADD TO THE REPORTED NO_x VALUE.
 SULFUR EMISSIONS ARE BASED ON 0.3% TOTAL SULFUR CONTENT.

1.11 ESTIMATED PERFORMANCE – PG7111(EA)

LOAD CONDITION		BASE	75%	50%	25%	PEAK
AMBIENT TEMP.	- Deg F	102	102	102	102	102
OUTPUT	- kW	72530.	54370.	36300.	18130.	79540.
HEAT RATE (LHV)	- Btu/kWh	11300.	11880.	13390.	18920.	11250.
HEAT CONS. (LHV) X10-6	- Btu/h	819.6	645.9	486.1	343.0	894.8
EXHAUST FLOW X10-3	- lb/h	2134.0	2119.0	2109.0	1755.0	2142.0
EXHAUST TEMP	- Deg F.	1012.	854.	705.	678.	1074.
EXHAUST ENERGY X10-6	- Btu/h	509.5	417.5	332.5	264.6	550.8
WATER FLOW	- lb/h	29560.	16310.	8640.	0.	36680.
NOX	- ppmvd @ 15% O2	42.	42.	42.	67.	42.
NOX AS NO2	- lb/h	145	113.	84.	94.	159.
CO	- ppmvd	10.	50.	120.	15.	10.
CO	- lb/h	19.	95.	220.	25.	19.
UHC	- ppmvw	7.	7.	7.	7.	7.
UHC	- lb/h	8.	8.	8.	7.	7.
VOC	- ppmvw	3.5	3.5	3.5	3.5	3.5
VOC	- lb/h	4.0	4.	4.	3.5	3.5
SO2	- ppmvw	54.	42.	32.	27.	58.
SO2	- lb/h	253.	199.	150.	106.	276.
SO3	- ppmvw	2.	3.	2.	2.	3.
SO3	- lb/h	17.	14.	10.	7.	18.
SULFUR MIST	- lb/h	27.	21.	16.	11.	29.
PART	- lb/h	15.0	15.0	15.0	15.0	15.0
EXHAUST ANALYSIS % VOL.						
ARGON		0.87	0.86	0.88	0.90	0.86
NITROGEN		71.53	72.61	73.36	74.00	71.01
OXYGEN		12.81	14.45	15.90	16.67	12.12
CARBON DIOXIDE		4.17	3.29	2.48	2.09	4.52
WATER		10.63	8.79	7.38	6.35	11.49
SITE CONDITIONS						
ELEVATION	- ft.	70				
SITE PRESSURE	- psia	14.66				
INLET LOSS	- in. Water	2.5				
EXHAUST LOSS	- in. Water	5.5				
RELATIVE HUMIDITY	- %	60				
FUEL TYPE	-					DISTILLATE
FUEL LHV	- Btu/lb	18467				
APPLICATION	-					7A6 AIR COOLED GENERATOR
COMBUSTION SYSTEM	-					QUIET COMBUSTOR

EMISSION INFORMATION BASED ON GE RECOMMENDED MEASUREMENT METHODS.
 NO_x EMISSIONS ARE CORRECTED TO 15% O₂ WITHOUT HEAT RATE CORRECTION AND ARE NOT CORRECTED TO ISO REFERENCE CONDITIONS PER 40CFR 60.335(a)(1)(i).
 NO_x LEVELS SHOWN WILL BE CONTROLLED BY ALGORITHMS WITHIN THE SPEEDTRONIC CONTROL SYSTEM.
 DISTILLATE FUEL IS ASSUMED TO HAVE 0.015% FUEL BOUND NITROGEN, OR LESS. FUEL BOUND NITROGEN AMOUNTS GREATER THAN 0.015% WILL ADD TO THE REPORTED NO_x VALUE.
 SULFUR EMISSIONS ARE BASED ON 0.3% TOTAL SULFUR CONTENT.

1.12 ESTIMATED PERFORMANCE – PG7111(EA)

LOAD CONDITION		BASE	75%	50%	25%
AMBIENT TEMP.	- Deg F.	20	20	20	20
OUTPUT	- kW	97360.	73020.	48710.	24350.
HEAT RATE (LHV)	- Btu/kWh	10700.	11310.	12260.	16270.
HEAT CONS. (LHV) X10-6	- Btu/h	1041.8 ✓	825.9	597.2	396.2
EXHAUST FLOW X10-3	- lb/h	2616.0	2053.0	2029.0	2007.0
EXHAUST TEMP	- Deg F.	954.	981.	774.	599.
EXHAUST HEAT X10-6	- Btu/h	623.2	511.3	391.2	294.7
WATER FLOW	- lb/h	46370.	32900.	15050.	0.
NOX	- ppmvd @ 15% O2	42.	42.	*	*
NOX AS NO2	- lb/h	185.	145.	*	*
CO	- ppmvd	20.	*	*	*
CO	- lb/h	47.	*	*	*
UHC	- ppmvw	7.	*	*	*
UHC	- lb/h	10.	*	*	*
VOC	- ppmvw	3.5	*	*	*
VOC	- lb/h	5.	*	*	*
SO2	- ppmvw	56.	56.	41.	28.
SO2	- lb/h	322.	255.	184.	122.
SO3	- ppmvw	2.	3.	2.	1.
SO3	- lb/h	21.	17.	13.	8.
SULFUR MIST	- lb/h	34.	27.	19.	13.
PART	- lb/h	15.0	15.0	15.0	15.0
EXHAUST ANALYSIS % VOL.					
ARGON		0.88	0.89	0.90	0.92
NITROGEN		73.89	74.09	75.65	77.02
OXYGEN		13.13	13.18	15.41	17.40
CARBON DIOXIDE		4.37	4.38	3.20	2.15
WATER		7.73	7.47	4.84	2.51
SITE CONDITIONS					
ELEVATION	- ft.	70			
SITE PRESSURE	- psia	14.66			
INLET LOSS	- in. Water	2.5			
EXHAUST LOSS	- in. Water	5.5			
RELATIVE HUMIDITY	- %	60			
FUEL TYPE	-			DISTILLATE ✓	
FUEL LHV	- Btu/lb	18467			
APPLICATION	-			7A6 AIR COOLED GENERATOR	
COMBUSTION SYSTEM	-			DRY LOW NOXI	

EMISSION INFORMATION BASED ON GE RECOMMENDED MEASUREMENT METHODS.
 NO_x EMISSIONS ARE CORRECTED TO 15% O₂ WITHOUT HEAT RATE CORRECTION AND ARE NOT CORRECTED TO ISO REFERENCE CONDITIONS PER 40CFR 60.335(a)(1)(i).
 NO_x LEVELS SHOWN WILL BE CONTROLLED BY ALGORITHMS WITHIN THE SPEEDTRONIC CONTROL SYSTEM.

DISTILLATE FUEL IS ASSUMED TO HAVE 0.015% FUEL BOUND NITROGEN, OR LESS.
 FUEL BOUND NITROGEN AMOUNTS GREATER THAN 0.015% WILL ADD TO THE REPORTED NO_x VALUE.

* DATA NOT AVAILABLE

SULFUR EMISSIONS ARE BASED ON 0.3% TOTAL SULFUR CONTENT.

BEST AVAILABLE COPY

1.13 ESTIMATED PERFORMANCE - PG7111(EA)

LOAD CONDITION		BASE	75%	50%	25%
AMBIENT TEMP.	- Deg F.	20	20	20	20
OUTPUT	- kW	94420.	70810.	47210.	23580.
HEAT RATE (LHV)	- Btu/kWh	10250.	10910.	12040.	16480.
HEAT CONS. (LHV) X10-6	- Btu/h	967.8 ✓	772.5	568.4	388.6
EXHAUST FLOW X10-3	- lb/h	2561.0	2013.0	2009.0	2005.0
EXHAUST TEMP	- Deg F.	959.	987.	768.	589.
EXHAUST HEAT X10-6	- Btu/h	608.8	500.7	383.8	290.0
NOX	- ppmvd @ 15% O2	25.	25.	25.	72.
NOX AS NO2	- lb/h	97.	77.	56.	95.
CO	- ppmvd	20.	20.	20.	420.
CO	- lb/h	47.	37.	37.	672.
UHC	- ppmvw	7.	7.	7.	30.
UHC	- lb/h	10.	8.	8.	30.
VOC	- ppmvw	1.4	1.4	1.4	6.
VOC	- lb/h	2.	1.6	1.6	6.
PART	- lb/h	7.0	7.0	7.0	7.0
EXHAUST ANALYSIS % VOL.					
ARGON		0.90	0.91	0.92	0.92
NITROGEN		75.47	75.45	76.11	76.68
OXYGEN		14.00	13.96	15.81	17.44
CARBON DIOXIDE		3.18	3.20	2.35	1.61
WATER		6.45	6.49	4.81	3.35
SITE CONDITIONS					
ELEVATION	- ft.	70			
SITE PRESSURE	- psia	14.66			
INLET LOSS	- in. Water	2.5			
EXHAUST LOSS	- in. Water	5.5			
RELATIVE HUMIDITY	- %	60			
FUEL TYPE	-	CUST GAS ✓			
FUEL LHV	- Btu/lb	21060			
APPLICATION	-	7A6 AIR COOLED GENERATOR			
COMBUSTION SYSTEM	-	DRY LOW NOX I			

EMISSION INFORMATION BASED ON GE RECOMMENDED MEASUREMENT METHODS.
 NO_x EMISSIONS ARE CORRECTED TO 15% O₂ WITHOUT HEAT RATE CORRECTION AND ARE
 NOT CORRECTED TO ISO REFERENCE CONDITIONS PER 40CFR 60.335(a)(1)(i).
 NO_x LEVELS SHOWN WILL BE CONTROLLED BY ALGORITHMS WITHIN THE
 SPEEDTRONIC CONTROL SYSTEM.

IPS-8749
 IPT 4-9-92

1.14 ESTIMATED PERFORMANCE – PG7111(EA)

LOAD CONDITION		BASE	75%	50%	25%
AMBIENT TEMP.	- Deg F.	72	72	72	72
OUTPUT	- kW	79550.	59650.	39800.	19910.
HEAT RATE (LHV)	- Btu/kWh	10590.	11460.	12870.	18030.
HEAT CONS. (LHV) X10-6	- Btu/h	842.4	683.6	512.2	359.0
EXHAUST FLOW X10-3	- lb/h	2274.0	1837.0	1835.0	1833.0
EXHAUST TEMP	- Deg F.	994.	1018.	817.	651.
EXHAUST HEAT X10-6	- Btu/h	538.6	452.9	354.9	273.9
NOX	- ppmvd @ 15% O2	25.	25.	25.	72.
NOX AS NO2	- lb/h	85.	68.	50.	95.
CO	- ppmvd	20.	20.	20.	420.
CO	- lb/h	41.	33.	34.	672.
UHC	- ppmvw	7.	7.	7.	30.
UHC	- lb/h	9.	7.	7.	30.
VOC	- ppmvw	1.4	1.4	1.4	6.
VOC	- lb/h	1.8	1.4	1.4	6.
PART	- lb/h	7.0	7.0	7.0	7.0
EXHAUST ANALYSIS % VOL.					
ARGON		0.89	0.90	0.90	0.90
NITROGEN		74.48	74.48	75.08	75.61
OXYGEN		13.89	13.91	15.62	17.13
CARBON DIOXIDE		3.10	3.09	2.31	1.62
WATER		7.64	7.62	6.09	4.74
SITE CONDITIONS					
ELEVATION	- ft.	70			
SITE PRESSURE	- psia	14.66			
INLET LOSS	- in. Water	2.5			
EXHAUST LOSS	- in. Water	5.5			
RELATIVE HUMIDITY	- %	60			
FUEL TYPE	-	CUST GAS			
FUEL LHV	- Btu/lb	21060			
APPLICATION	-	7A6 AIR COOLED GENERATOR			
COMBUSTION SYSTEM	-	DRY LOW NOX I			

EMISSION INFORMATION BASED ON GE RECOMMENDED MEASUREMENT METHODS.
 NOx EMISSIONS ARE CORRECTED TO 15% O2 WITHOUT HEAT RATE CORRECTION AND ARE
 NOT CORRECTED TO ISO REFERENCE CONDITIONS PER 40CFR 60.335(a)(1)(2).
 NOx LEVELS SHOWN WILL BE CONTROLLED BY ALGORITHMS WITHIN THE
 SPEEDTRONIC CONTROL SYSTEM.

IPS-8749

JPT 4-9-92



BLACK & VEATCH

8400 Ward Parkway, P.O. Box No. 8405, Kansas City, Missouri 64114, (913)339-2000

RECEIVED

JAN 28 1992

Kissimmee Utility Authority
Cane Island Combustion Turbine Project

B&V Project 17645
Division of Air
B&V File 32-0200
Records Management
January 20, 1992

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

Subject: PSD Class I Air Modeling

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

Gentlemen:

Black & Veatch received your January 3, 1992, letter to Mr. A. K. Sharma (KUA) requesting additional information for the Cane Island project PSD permit application to be considered complete. The additional information requested includes PSD Class I increment consumption and air quality related value (AQRV) analyses at Chassahowitzha National Wilderness Area. In a January 9, 1992, telephone conversation with Black & Veatch, Cleve Holladay (FDER) detailed the following steps for performing the PSD Class I increment analysis.

- 1) Air dispersion modeling using ISCST will be performed for the proposed project sources to determine project impacts at nine FDER-provided receptors for Chassahowitzha National Wilderness Area. Modeling will be based on five years of hourly surface meteorological data and upper data (1982-1986). The highest impacts will be compared with the National Park Service (NPS) "significant" impact levels. These levels are derived by dividing the EPA significant impact levels by the AAQS, and then multiplying by the PSD Class I increments. The analysis must be conducted for every pollutant which has significant emission rates above EPA significant annual emission thresholds for which PSD Class I increments exist. If the project's impacts are less than the NPS significant impact levels, then the analysis is concluded for that pollutant. If the impacts are greater, then Step 2 must be performed.



BLACK & VEATCH

P.O. Box No. 8405
Kansas City, Missouri 64114

MR C H FANCY, CHIEF
BUREAU OF AIR REGULATION
FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FL 32399-2400



Florida Department of Environmental Regulation
Mr. C. H. Fancy, P.E.

B&V Project 17645
January 20, 1992

- 2) Air dispersion modeling will be performed for the FDER-provided emissions inventory using ISCST and the nine FDER-provided receptors. If exceedances of the PSD Class I increment are modeled, then the project impacts alone will be modeled with ISCST at the exceedance receptors during the periods which the exceedances occurred. If the project's impacts on the exceedance receptors are less than the NPS significant levels, then the analysis is concluded. If not, then Step 3 must be performed.
- 3) Air dispersion modeling will be performed for the FDER-provided emissions inventory using MESOPUFF II and a FDER-provided receptor grid. The impacts will be compared with the PSD Class I increments. For all periods and receptors with modeled exceedances, the project sources will be modeled with MESOPUFF II. If the project's impacts on the exceedance receptors are less than the NPS significant levels, then the analysis is concluded.

Cleve has already provided a listing of the nine Chassahowitzha receptors. However, a listing of the emissions inventory for the sources to be included in the PSD Class I analysis is needed. Please provide this listing to Amy Carlson of Black & Veatch as soon as it is available.

Cleve stated that the NPS may not require a detailed AQRV from the Cane Island project due to its size, distance from the Class I area, and the forthcoming AQRV submittals for the Chassahowitzha National Wilderness Area from larger sources. Cleve indicated that he will verify this with the NPS and contact Black & Veatch with additional information.

Very truly yours,

BLACK & VEATCH

David M Lefebvre

David M. Lefebvre

alc

cc: Mr. A. K. Sharma, KUA

J. Reynolds
C. Holladay
C. Collins, Dist.
J. Harper, EPA
C. Shauer, NPS
CHF/BA/PL

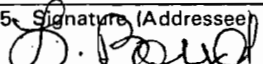
SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- 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 next to the article number.

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: Mr. A. K. Sharma Director of Power Supply Kissimmee Utility Authority P.O. Box 423219 Kissimmee, FL 34742-3219	4a. Article Number P 832 538-759
5. Signature (Addressee) 	4b. Service Type <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise
6. Signature (Agent)	7. Date of Delivery
	8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, October 1990 ☆ U.S. GPO: 1990-273-861 **DOMESTIC RETURN RECEIPT**

P 832 538 759



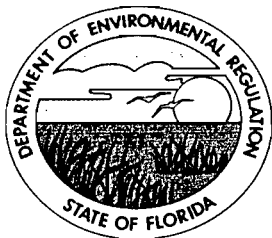
Certified Mail Receipt

No Insurance Coverage Provided
 Do not use for International Mail
 (See Reverse)

Sent to Mr. A. K. Sharma	
Special Agent Director of Power Supply Kissimmee Utility Authority	
P.O. State & ZIP Code P.O. Box 423219 Kissimmee, FL 34742-3219	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	\$
Postmark or Date mailed: 1/3/92 AC 49-205703 PSD-FL-182	

PS Form 3800, June 1990

File Copy



Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

January 3, 1992

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. A. K. Sharma
Director of Power Supply
Kissimmee Utility Authority
P. O. Box 423219
Kissimmee, Florida 34742-3219

Dear Mr. Sharma:

Re: Permit Application AC 49-205703, PSD-FL-182

This is to provide notice that additional information is required for processing the subject application. Please evaluate the impact of this project on the Class I Chassahowitzka National Wilderness Area located approximately 115 km west of the project. This evaluation should include cumulative PM/PM₁₀, SO₂ and NO_x Class I increment analyses, as required by the National Park Service. An expanded air quality related analysis (AQRV) should be done since there are no significant impact levels for this analysis. The AQRV analysis includes impacts to soils, vegetation and wildlife.

If you have questions or need further information, please contact John Reynolds or Cleve Holladay at (904) 488-1344 or write to me at the above address.

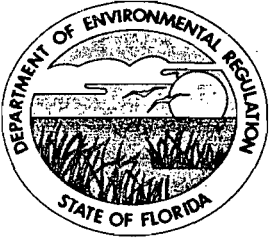
Sincerely,

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

CHF/JR/plm

- c: C. Collins, CD
- J. Harper, EPA
- C. Shaver, NPS
- M. Moussa, P.E.

Ready File
John Reynolds } 1/3/92 RRZ
Cleve Holladay }



Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

December 9, 1991

Ms. Jewell Harper, Chief
Air Enforcement Branch
U.S. EPA - Region IV
345 Courtland Street, NE
Atlanta, Georgia 30308

Dear Ms. Harper:

Re: Kissimmee Utility Authority
Osceola County
PSD-FL-182

Enclosed for your review and comment is the above referenced PSD permit application. If you have any comments or questions, please contact John Reynolds or Cleve Holladay at the above address or at (904) 488-1344.

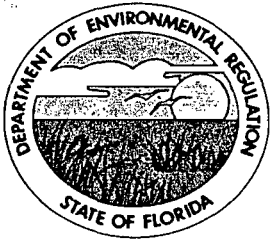
Sincerely,

Patricia G. Adams

Patricia G. Adams
Planner
Bureau of Air Regulation

PA/kt

enclosure



Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

December 9, 1991

Mrs. Christine Shaver, Chief
Permit Review & Technical Support Branch
National Park Service-Air Quality Division
Post Office Box 25287
Denver, Colorado 80225

Dear Mrs. Shaver:

Re: Kissimmee Utility Authority
Osceola County
PSD-FL-182

Enclosed for your review and comment is the above referenced PSD permit application. If you have any comments or questions, please contact John Reynolds or Cleve Holladay at the above address or at (904)488-1344.

Sincerely,

Patricia G. Adams

Patricia G. Adams
Planner
Bureau of Air Regulation

PA/kt

enclosure

A.K. (Ben) Sharma, P.E.
Director of Power Supply



RECEIVED
DER - MAIL ROOM
1991 DEC -5 PM 12:00
P.O. BOX 423219
KISSIMMEE, FLORIDA 34742-3219
(407) 847-6011

December 2, 1991

Florida Department of Environmental Regulation
Bureau of Air Regulation
Twin Towers Office Building
2600 Blainstone Road
Tallahassee, FL 32399-2400

Attn: Mr. C. H. Fancy

Subject: Authority to Construct/PSD Permit Application

Gentlemen:

On November 14, 1991 an original and five copies of the Authority to Construct/PSD Permit Application was submitted by Black & Veatch of Kansas City on behalf of the Kissimmee Utility Authority (KUA) for the construction of KUA's proposed Cane Island Combustion Turbine project. Inadvertently the filing fee of \$7,500 was not included in the package.

I am writing this letter today to forward the required \$7,500 filing fee for the application.

Acknowledgement of the same will be very much appreciated.

Sincerely,

A handwritten signature in cursive script that reads "A.K. Sharma".

A. K. (Ben) Sharma, P.E.
Director of Power Supply

AKS/rk

Enclosure - Check for \$7,500

cc: Preston Lewis, DER
David M. Lefebvre, Black & Veatch
James C. Welsh

Q. Reynolds
Q. Whittling
Q. Zahn, C Dist
Q. Harper, EPA
Q. Shaver, NPS

Serving the Kissimmee Area Since 1901

001031

*John*November 19, 1981
ESE NO. 81 613 101

Mr. C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

RE: Preliminary Determination for Kissimmee Utilities
(AC 49-46521, PSD-FL-087)

Dear Mr. Fancy:

The proposed specific condition Number 9 requires daily monitoring of fuel sulfur and nitrogen content and lower heating value.

We request that this condition be modified to more nearly reflect the requirements of 40 CFR, Part 60, Subpart GG, Section 60.334 on which it is based. Specifically, we request that 1) the requirement for determining the fuel heating value be deleted, 2) the option for developing a custom sampling schedule based on substantiating data be included, and 3) the provision for sampling only on each occasion that fuel is transferred to bulk storage be included.

I appreciate the efficiency with which this permit has been processed. Do not hesitate to call with any questions or if we can help during Environmental Protection Agency review.

Sincerely,



Michael H. Dybevic
Associate Engineer
Air Modeling and Permitting

MHD/ctw





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30365

NOV 16 1981

REF: 4AH-AF

Mr. C. H. Fancy, Deputy Chief
Bureau of Air Quality Management
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

Re: PSD-FL-087 Kissimmee Utilities, Kissimmee, Florida Prevention
of Significant Deterioration - Preliminary Determination

Dear Mr. Fancy:

We have reviewed the subject report and concur with your determination.
Please note on page 3 of 5 on the state permit that continuous operation
is 8760 hours per year, as in the BACT determination, and 'VE' in
condition 7 should be 'VOC'. *← should be VE*

Any questions, comments or developments regarding this project should be
directed to Michael Brandon of my staff at (404) 881-4552.

Sincerely yours,

Tommie A. Gibbs

Tommie A. Gibbs, Chief
Air Facilities Branch

*not significant
Cob* →



SENTINEL STAR

Published Daily
Kissimmee, Osceola County, Florida

State of Florida } ss.
COUNTY OF ORANGE

Before the undersigned authority personally appeared _____
Betty M. Kinney, who on oath says that
she is the Legal Advertising Representative of the Sentinel Star, a Daily newspaper
published at Kissimmee, in Osceola County, Florida; that the attached copy of ad-
vertisement, being a Public Notice in the matter of
A Modification to an existing air pollution source, etc.
_____ in the _____ Court,
was published in said newspaper in the issues of _____
October 28, 1981

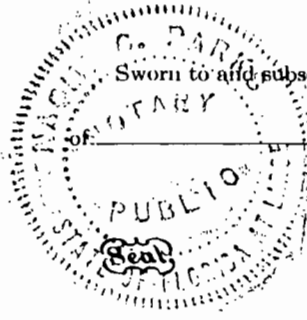
Affiant further says that the said Sentinel Star is a newspaper published at Kis-
simmee, in said Osceola County, Florida, and that the said newspaper has heretofore
been continuously published in said Osceola County, Florida, each Week Day and
has been entered as second-class mail matter at the post office in Kissimmee in said
Osceola 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, com-
mission or refund for the purpose of securing this advertisement for publication in
the said newspaper.

Betty M. Kinney

Sworn to and subscribed before me this 30th day

December A.D., 1981

Maomi C. Parks
Notary Public
Notary Public, State of Florida at Large
My Commission Expires Jan. 21, 1984



ADVERTISING CHARGE \$22.13

PUBLIC NOTICE

A modification to an existing air pollution source is
being proposed by Kissimmee Utilities located in the City of
Kissimmee, Osceola County, Florida. The proposed modification
is the construction of a 49.9 MW combined cycle gas turbine.
The modification will increase emissions of air pollutants,
in tons per year, by the following amounts:

PM	SO ₂	NO _x	CO	VOC
69	1700	1095	227	82

The proposed modification has been reviewed by the
Florida Department of Environmental Regulation (FDER) under
Chapter 403, Florida Statutes, and Federal regulation 40
CFR 52.21, Prevention of Significant Deterioration (PSD).
The Department has made a preliminary determination that
the construction can be approved provided certain conditions
are met. A summary of the basis for the determination and
the application for State and Federal permits submitted by
Kissimmee Utilities are available for public review at the
following offices:

- Bureau of Air Quality Management, Department of Environmental Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32301
- South Florida Subdistrict Dept. of Environmental Regulation, 2745 S. E. Morningside Blvd., Port St. Lucie, Florida 33452

Kissimmee Public Library
305 E. Broadway
Kissimmee, Florida 32741

The maximum percentages of allowable PSD increments con-
sumed by the proposed modification will be as follows:

	Annual	24-Hour	3-Hour
PM	Negligible	Negligible	NA
SO ₂	5	11	9

Any person may submit written comments to FDER regarding
the proposed modification. All comments, postmarked not later
than 30 days from the date of notice, will be considered by
FDER in making a final determination regarding approval for
construction of this source. Those comments will be made avail-
able for public review on request. Furthermore, a public hearing
can be requested by any person. Such request should be sub-
mitted within 14 days of the date of this notice. Letters should
be addressed to:

Mr. C. H. Fancy
Bureau of Air Quality Management
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

EXPRESS MAIL
NEXT DAY SERVICE[®]

POST OFFICE TO ADDRESSEE



FROM: Tim Powell, BAQM/DER
Twin Towers Bldg
Tallahassee, Florida
32301

Value Declared, if any: Customer Number, if any:

TO: ORLANDO SENTINEL-STAR
633 N. Orange Ave.
Orlando, FL 32801

ORIGIN:

Initials of Receiving Clerk: AF

F.O. ZIP Code:

32302

Date in:

Time in:

10/21/81 2:40pm

Return Receipt Service

To Whom & Date Del.

To Whom, Date & Address of Del.

Weight

Postage & Fees

1.02 lb \$9.05

B 10379939

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Domestic mailings under this service made at designated USPS facilities on or before a specified deposit time, will be accepted for express shipment to a designated USPS delivery area having Express Mail Service for next day delivery to an addressee or agent on or before the time specified by the USPS at mailing. USPS will refund upon application to originating office, the postage for any shipments mailed under this service and not meeting the service standard except for those delayed by strike or work stoppage. See USPS Notice 43 for details.

INSURANCE COVERAGE:

See USPS Notice 7 or 63 for exclusions of coverage.
(1) *Document Reconstruction Insurance.* Non-negotiable documents are insured against loss, damage, or rifling up to \$50,000 per piece, subject to a limit of \$500,000 per occurrence.
(2) *Merchandise Insurance.* Parcels are insured against loss, damage, or rifling up to a maximum of \$500. The mailer must declare the value of the article at the time of mailing.

- Signature is required upon delivery.
- Claims for delay, loss, damage or rifling must be made within 60 days. Claim forms may be obtained at the post office of mailing.

LABEL 11B ☆ DEC/80 U.S.G.P.O. 1981-336-234

EXPRESS MAIL SERVICE
Customer Receipt

PRESS HARD YOU ARE MAKING 4 COPIES

Kissimmee Utills

STATE OF FLORIDA -

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301



BOB GRAHAM
GOVERNOR
VICTORIA J. TSCHINKEL
SECRETARY

October 21, 1981

Orlando Sentinel-Star
Legal Advertising
633 N. Orange Avenue
Orlando, Florida 32801

Dear Sir, Madam, or Ms:

Please publish the enclosed Public Notice in your newspaper on Sunday, October 25, 1981.

The cost of publication of the notice will be paid by Kissimmee Utilities. The affidavit and voucher should be addressed to:

Kissimmee Utilities
Electric Utilities Department
P. O. Box 1608
Kissimmee, Florida 32741

We also need a copy of the affidavit for our files. Please address this to myself, Bureau of Air Quality Management, at the letterhead address. I can be reached at (904) 488-1344 if you have any questions or problems with this matter.

Sincerely,

Tim Powell
Bureau of Air Quality
Management

Enclosure

cc: Jack T. Danforth, Kissimmee Utilities

TP/bjm

KISSIMMEE - BASE LOAD, NAT GAS

Best Available Copy

Table # 1

ESTIMATED AVERAGE ENGINE PERFORMANCE - LM6000-PA

AMBIENT TEMP.	- Deg F.	59	95
OUTPUT	- kW	*40010.	*29760.
HEAT RATE	- Btu/kWh	*9170.	*9590.
HEAT CONSUMPTION X10-6	- Btu/h	366.9	285.4
EXHAUST FLOW X10-3	- lb/h	991.4	812.4
EXHAUST TEMP	- Deg F	805.0	833.0
WATER FLOW	- lb/h	18890.	11170.

NOX	- ppmvd @ 15% O2	25.	25.
NOX	- lb/h	36.	28.
CO	- ppmvd	45.	15.
CO	- lb/h	40.	11.
UHC	- ppmv	10.	10.
UHC	- lb/h	7.	5.
**PART	- lb/h	9.	7.

EXHAUST ANALYSIS % VOL. WET

ARGON	0.87	0.83
NITROGEN	72.05	69.58
OXYGEN	13.47	13.24
CARBON DIOXIDE	3.00	2.78
WATER	10.61	13.57
SULFUR DIOXIDE	0.00	0.00

SITE CONDITIONS

ELEVATION	- ft.	0
POWER TURBINE SPEED	- RPM	3600
INLET LOSS	- in. water	7
EXHAUST LOSS	- in. water	2.5
GENERATOR FREQUENCY	- Hz.	60
RELATIVE HUMIDITY	- %	60
FUEL TYPE	-	CUSTOMER NATURAL GAS
APPLICATION	-	GENERATOR DRIVE

* GUARANTEED VALUES FOR OUTPUT AND HEAT RATE

** AS REPORTED USING GE MEASUREMENT TECHNIQUES

TBO-8181
 KHC 8-27-91

KISSIMMEE - BASE LOAD, NAT GAS

Table #2

ESTIMATED AVERAGE ENGINE PERFORMANCE - LM6000-PA

AMBIENT TEMP.	- Deg F.	20	72	102
OUTPUT	- kW	39890.	37510.	29050.
HEAT RATE	- Btu/Kwh	3690.	8840.	9240.
HEAT CONSUMPTION X10-6	- Btu/h	346.6	331.6	268.4
EXHAUST FLOW X10-3	- lb/h	1053.7	926.9	779.2
EXHAUST TEMP	- Deg F	708.	812.	842.
WATER FLOW	- lb/h	16350.	16060.	9750.

NOX	- ppmvd @ 15% O2	25.	25.	25.
NOX	- lb/h	35.	33.	27.
CO	- ppmvd	114.	30.	15.
CO	- lb/h	108.	26.	9.
UHC	- ppmv	15.	10.	10.
UHC	- lb/h	9.	6.	5.
**PART	- lb/h	8.	8.	6.

EXHAUST ANALYSIS % VOL. WET

ARGON	0.89	0.86	0.82
NITROGEN	73.79	71.49	68.67
OXYGEN	14.44	13.46	13.08
CARBON DIOXIDE	2.74	2.93	2.74
WATER	2.14	11.26	14.69
SULFUR DIOXIDE	0.00	0.00	0.00

SITE CONDITIONS

ELEVATION	- ft.	0
POWER TURBINE SPEED	- RPM	3600
INLET LOSS	- in. water	7
EXHAUST LOSS	- in. water	2.5
GENERATOR FREQUENCY	- hz.	60
RELATIVE HUMIDITY	- %	60
FUEL TYPE	-	CUSTOMER NATURAL GAS
APPLICATION	-	GENERATOR DRIVE

** AS REPORTED USING GE MEASUREMENT TECHNIQUES

TBO-8181

KHC 8-27-91

KISSIMMEE - BASE LOAD, DIST

Best Available Copy

Table #

ESTIMATED AVERAGE ENGINE PERFORMANCE - LM6000-PA

AMBIENT TEMP.	- Deg F.	20	72	102
OUTPUT	- kW	39860.	37450.	28890.
HEAT RATE	- Btu/Kwh	8810.	8960.	9400.
HEAT CONSUMPTION X10-6	- Btu/h	351.2	335.6	271.6
EXHAUST FLOW X10-3	- lb/h	1054.9	928.5	778.3
EXHAUST TEMP	- Deg F	-	822.	852.
WATER FLOW	- lb/h	18600.	18410.	12230.

NOX	- ppmvd @ 15% O2	42.	42.	42.
NOX	- lb/h	61.	57.	47.
CO	- ppmvd	210.	63.	27.
CO	- lb/h	205.	55.	18.
UHC	- ppmvv	27.	12.	12.
UHC	- lb/h	16.	6.	5.
**PART	- lb/h	12.	12.	12.

EXHAUST ANALYSIS % VOL. WET

ARGON	0.90	0.87	0.84
NITROGEN	74.23	71.97	69.02
OXYGEN	14.52	13.56	13.13
CARBON DIOXIDE	3.74	3.99	3.74
WATER	6.61	9.61	13.28
SULFUR DIOXIDE	0.00	0.00	0.00

SITE CONDITIONS

ELEVATION	- ft.	0
POWER TURBINE SPEED	- RPM	3600
INLET LOSS	- in. water	7
EXHAUST LOSS	- in. water	2.5
GENERATOR FREQUENCY	- hz.	60
RELATIVE HUMIDITY	- %	10
FUEL TYPE	-	DESTILLATE
APPLICATION	-	GENERATOR DRIVE

** AS REPORTED USING GE MEASUREMENT TECHNIQUES

T50-8181
KRC 8-28-91

Best Available Copy Table *

ESTIMATED AVERAGE ENGINE PERFORMANCE - LM6000-PA

AMBIENT TEMP.	- Deg F.	20	72	102
OUTPUT	- kW	9970.	9360.	7220.
HEAT RATE	- Btu/Kwh	13740.	14160.	16390.
HEAT CONSUMPTION X10-6	- Btu/h	137.0	132.5	118.3
EXHAUST FLOW X10-3	- lb/h	588.7	536.9	480.9
EXHAUST TEMP	- Deg F	648.	737.	776.

NOX	- ppmvd @ 15% O2	189.	191.	141.
NOX	- lb/h	106.	105.	69.
CO	- ppmvd	171.	36.	24.
CO	- lb/h	96.	17.	11.
UHC	- ppmv	24.	10.	10.
UHC	- lb/h	7.	2.	2.
**PART	- lb/h	12.	12.	12.

EXHAUST ANALYSIS % VOL. WET

ARGON	0.94	0.90	0.86
NITROGEN	76.82	74.71	71.06
OXYGEN	16.79	16.07	15.23
CARBON DIOXIDE	2.65	2.77	2.67
WATER	2.80	5.55	10.18
SULFUR DIOXIDE	0.00	0.00	0.00

SITE CONDITIONS

ELEVATION	- ft.	0
POWER TURBINE SPEED	- RPM	3600
INLET LOSS	- in. water	7
EXHAUST LOSS	- in. water	2.5
GENERATOR FREQUENCY	- hz.	60
RELATIVE HUMIDITY	- %	60
FUEL TYPE	-	DISTILLATE
APPLICATION	-	GENERATOR DRIVE

** AS REPORTED USING GE MEASUREMENT TECHNIQUES

TBO-8181
 KHC 8-28-91

KISSIMMEE - BASE LOAD , DIST

Best Available Copy

Table #4.

ESTIMATED AVERAGE ENGINE PERFORMANCE - LM600C-PA

AMBIENT TEMP.	- Deg F.	59	95
OUTPUT	- kW	*39980.	*29660.
HEAT RATE	- Btu/kWh	*9280.	*9730.
HEAT CONSUMPTION X10-6	- Btu/h	370.7	288.6
EXHAUST FLOW X10-3	- lb/h	993.6	812.5
EXHAUST TEMP	- Deg F	815.0	842.0
WATER FLOW	- lb/h	21260.	13660.

NOX	- ppmvd @ 15% O2	42.	42.
NOX	- lb/h	63.	49.
CO	- ppmvd	81.	33.
CO	- lb/h	76.	24.
UHC	- ppmvw	15.	12.
UHC	- lb/h	6.	5.
**PART	- lb/h	12.	12.

EXHAUST ANALYSIS % VOL. WET

ARGON	0.81	0.84
NITROGEN	72.57	69.95
OXYGEN	13.58	13.30
CARBON DIOXIDE	4.06	3.80
WATER	8.89	12.11
SULFUR DIOXIDE	0.06	0.00

SITE CONDITIONS

ELEVATION	- ft.	0
POWER TURBINE SPEED	- RPM	3600
INLET LOSS	- in. water	7
EXHAUST LOSS	- in. water	2.5
GENERATOR FREQUENCY	- hz.	60
RELATIVE HUMIDITY	- %	60
FUEL TYPE	-	DISTILLATE
APPLICATION	-	GENERATOR DRIVE

* GUARANTEED VALUES FOR OUTPUT AND HEAT RATE

** AS REPORTED USING GE MEASUREMENT TECHNIQUES

TBO-8181
KHC 8-28-91

KISSIMMEE - PART LOAD , NAT GAS (NOX CONTROL OFF)

Table #3

Best Available Copy

ESTIMATED AVERAGE ENGINE PERFORMANCE - LM6000-PA

AMBIENT TEMP.	- Deg F.	20	72	102
OUTPUT	- kW	9980.	9380.	7260.
HEAT RATE	- Btu/Kwh	13660.	14050.	16230.
HEAT CONSUMPTION	X10-6 - Btu/h	136.3	131.8	117.8
EXHAUST FLOW	X10-3 - lb/h	588.5	536.8	481.1
EXHAUST TEMP	- Deg F	639.	727.	766.

NOX	- ppmvd @ 15% O2	91.	92.	63.
NOX	- lb/h	49.	49.	30.
CO	- ppmvd	153.	30.	21.
CO	- lb/h	85.	15.	10.
UHC	- ppmvw	18.	10.	10.
UHC	- lb/h	5.	3.	2.
**PART	- lb/h	5.	5.	5.

EXHAUST ANALYSIS % VOL. WET

ARGON	0.93	0.90	0.85
NITROGEN	76.26	74.15	70.55
OXYGEN	16.64	13.92	15.09
CARBON DIOXIDE	1.96	2.04	1.97
WATER	4.21	6.99	11.54
SULFUR DIOXIDE	0.00	0.00	0.00

SITE CONDITIONS

ELEVATION	- ft.	0
POWER TURBINE SPEED	- RPM	3600
INLET LOSS	- in. water	7
EXHAUST LOSS	- in. water	2.5
GENERATOR FREQUENCY	- hz.	60
RELATIVE HUMIDITY	- %	60
FUEL TYPE	-	CUSTOMER NATURAL GAS
APPLICATION	-	GENERATOR DRIVE

** AS REPORTED USING GE MEASUREMENT TECHNIQUES

TBO-8181
 KHC 8-28-91

DEPARTMENT OF ENVIRONMENTAL REGULATION

ROUTING AND TRANSMITTAL SLIP

ACTION NO.

ACTION DUE DATE

1. TO: (NAME, OFFICE, LOCATION)	INITIAL
CLAIR FANCY, P.E.	DATE
2.	INITIAL
BUREAU A.O.M.	DATE
3.	INITIAL
DER, TALLY	DATE
4.	INITIAL
	DATE

REMARKS:

ENCLOSED PLEASE FIND

YOUR COPY OF:

APPLICATION FOR KISSIMMEE
UTILITIES CONSTRUCT PERMIT AND
PSD REPORT, PREPARED BY
ESE OF GAINESVILLE

AC 49-46521

Fee Pd. 8/31/81



8/17/81

INFORMATION

REVIEW & RETURN
REVIEW & FILE
INITIAL & FORWARD
DISPOSITION
REVIEW & RESPOND
PREPARE RESPONSE
FOR MY SIGNATURE
FOR YOUR SIGNATURE
LET'S DISCUSS
SET UP MEETING
INVESTIGATE & REPT
INITIAL & FORWARD
DISTRIBUTE
CONCURRENCE
FOR PROCESSING
INITIAL & RETURN

FROM:

GEO. Humbert
PORT ST. LUCIE

DATE

8/17/81

PHONE

Note :

In telecon with George Humbert, FDER, Port St. Lucie, he said he wrote letter request fee on 8/17/81. This supposedly only covered fee request. 20⁰⁰ Fee was rec'd by him on 31 AUG - this is the new complete date unless there are further ~~the~~ points need to be addressed.

Tim Powell, Sept. 1 '81

Check Sheet

Company Name: Kissimmee UTILITY AUTHORITY
Permit Number: AC 49-205703
PSD Number: 182
Permit Engineer: _____

Application:

- Initial Application
- Incompleteness Letters
- Responses
- Waiver of Department Action
- Department Response
- Other

Cross References:

-
-
-

Intent:

- Intent to Issue
 - Notice of Intent to Issue
 - Technical Evaluation
 - BACT Determination
 - Unsigned Permit
- Correspondence with:
- EPA
 - Park Services
 - Other
- Proof of Publication
 - Petitions - (Related to extensions, hearings, etc.)
 - Waiver of Department Action
 - Other

NO APP



Final Determination:

- Final Determination
- Signed Permit
- BACT Determination
- Other

Post Permit Correspondence:

- Extensions/Amendments/Modifications
- Other

P 230 524 402



**Receipt for
Certified Mail**

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to <i>David Lefebvre</i>	
Street and No. <i>Black & Venetian</i>	
City, State and ZIP Code <i>Kansas City, MO</i>	
Postage	<i>\$</i>
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	<i>\$</i>
Postmark or Date <i>AC 49-205703 PSD-FI-182 8-30-93</i>	

PS Form 3800, June 1991

P 230 524 362



Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to	David Lefebvre
Street and No.	Black & Veatch
P.O. Box and Zip Code	Kansas City, MO
Postage	\$
Certified Fee	
Special Delivery Fee	<i>Greenland</i>
Restricted Delivery Fee	<i>not used 7/3/93</i>
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	6-4-93
AC 49-205703	
P50-FI-182	

PS Form 3800, June 1991

P 710 058 555



Certified Mail Receipt

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to <i>A K Sharnel</i>	
Street & No. <i>Kissimmee U A</i>	
P.O., State & ZIP Code <i>Kissimmee, FL</i>	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	\$
Postmark or Date	<i>4-9-93</i>
<i>AC 49-205703</i>	
<i>PSD-FL-182</i>	

PS Form 3800, June 1990

PS Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. Show to whom, date and address of delivery.

2. Restricted Delivery.

3. Article Addressed to:
A K Sharnel
Kissimmee Utility Authority
1701 W Carroll St
Kissimmee FL 34741

4. Type of Service: <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Certified <input type="checkbox"/> Express Mail	Article Number <i>P 710 058 555</i>
--	--

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee
X Michelle Rabin

6. Signature - Agent
X

7. Date of Delivery
4-17

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

DOMESTIC RETURN RECEIPT

line over top of envelope to the

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- 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:
 Mr. A. K. Sharrow
 Director of Power Supply
 Kissimmee Utility Auth.
 1701 W. Carroll St.
 Kissimmee, FL 34741

4a. Article Number
 Z 127 632 553

4b. Service Type
 Registered Insured
 Certified COD
 Express Mail Return Receipt for Merchandise

7. Date of Delivery
 10/27

5. Signature (Addressee)

6. Signature (Agent)

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

Thank you for using Return Receipt Service.

PS Form 3811, December 1991 *U.S. GPO: 1993-352-714 DOMESTIC RETURN RECEIPT

Z 127 632 553



Receipt for Certified Mail

No Insurance Coverage Provided
 Do not use for International Mail
 (See Reverse)

Sent to	A. K. Sharrow
Street and No.	Kissimmee Utility A.
P.O., State and ZIP code	Kiss, FL
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	10-24-95
	AC49-205703
	PSO-FI-182

PS Form 3800, March 1993

The Orlando Sentinel

Published Daily
\$185.31

State of Florida } S.S.
COUNTY OF ORANGE

RECEIVED

1992 DEC 28 AM 10:30

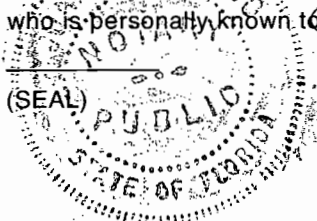
Before the undersigned authority personally appeared Mary Lynn McKenzie, who on oath says that he/she is the Legal Advertising Representative of The Orlando Sentinel, a daily newspaper published at ORLANDO in ORANGE County, Florida; that the attached copy of advertisement, being a INTENT TO ISSUE PERMIT in the matter of PSD PERMIT in the ORANGE Court, was published in said newspaper in the issue; of 12/20/92

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

The foregoing instrument was acknowledged before me this 22 day of December, 1992, by Mary Lynn McKenzie who is personally known to me and who did take an oath.

Mary Lynn McKenzie
Juanita Rosado
JUANITA ROSADO

Juanita Rosado
Notary Public, State of Florida
My commission expires June 18, 1994
Commission # CC022902



**INTENT TO ISSUE PERMIT
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 Kissimmee Utility Authority (KUA), 1702 West Carroll Street, Kissimmee, Osceola County, Florida, to construct a 40 NW simple cycle and a 120 NW combined cycle combustion gas turbine at their facility. A determination of Best Available Control Technology (BACT) was required. 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 fourteen (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) pursuant to 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 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 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 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 F.A.C.

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 Maquire Blvd., Suite 232, Orlando, Florida 32803-3757.

Any person may send written comments on the proposed action to Mr. Preston Lewis 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(s). Such requests must be submitted within 30 days of this notice. CORC163006 Dec.20,1992

Department of Environmental Regulation
Routing and Transmittal Slip

To: (Name, Office, Location)

1. *Preston Lewis*
2. *ARM - BAR Prints*
- 3.
- 4.

Remarks:

*For your files -
I'm assuming Kessemee
Utility is paying for
this ad -*

RECEIVED

JAN 04 1993

Division of Air
Resources Management

From:

John - Purchasing

Date

1-4-92

Phone

922-5907

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

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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

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Further, a public hearing can be requested by any person(s). Such requests must be submitted within 30 days of this notice.
CORC163006 Dec. 20, 1992

**LEGAL ADVERTISEMENT
RFP NO. 21-93
TRANSPORTATION
PLANNING CONSULTING
SERVICES**

The City of Atamonte Springs, in compliance with the Consultants Competitive Negotiation Act, FL SS 287.055, is seeking



December 15, 1992

*Patly
key in and
give to James
Shank
Section
12/17*

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

RE: DER File No. AC 49-205703
PSD-FL-182
Osceola County

Dear Mr. Lewis:

This is in reference to the proposed DER permit in favor of KUA to construct a 40 MW simple cycle combustion turbine and a 120 MW combined cycle combustion turbine. Copy of the proposed permit was transmitted to us from the offices of Mr. C. H. Fancy, P.E. on November 18, 1992.

Black & Veatch, KUA's retained consultants for the project, have reviewed the draft permit and have compiled the comments on behalf of KUA in the form of a letter report which is addressed to myself. A copy of the review comments is attached herewith.

We hope our comments will receive favorable consideration by DER at the time of issuing the final permit.

If you have any questions, please contact me at (407) 933-7777 Ext. 1232 or David Lefebvre of Black & Veatch at (913) 339-2164.

Sincerely,

A. K. Sharma

A. K. (Ben) Sharma, P.E.
Director of Power Supply

/css

Enclosure

cc: Mr. C. H. Fancy, P.E., w/encl.
James C. Welsh, w/encl.
Mr. David Lefebvre, w/o encl.

*J. Wilson
C. Halladay*

RECEIVED

DEC 16 1992

Division of Air
Resources Management



QUESTIONS? CALL 800-238-5355 TOLL FREE

AIRBILL
PACKAGE
TRACKING NUMBER

6243835511

2329P

6243835511

RECIPIENT'S COPY

Date **12/15/92**

From (Your Name) Please Print MR. A. K. (SEN) SHARMA		Your Phone Number (Very Important) 607-933-7777	To (Recipient's Name) Please Print MR. PRESTON LEWIS		Recipient's Phone Number (Very Important) 904 488-1344
Company KISSIMMEE UTILITY AUTHORITY		Department/Floor No.	Company BUREAU OF AIR REGULATION		Department/Floor No. 904
Street Address 1701 WEST CARROLL STREET			Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.) DEPARTMENT OF ENVIRONMENTAL REGULATION		
City KISSIMMEE			City TALLAHASSEE		
State FL		ZIP Required 3 4 7 4 1	State FL		ZIP Required 32399-2400

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.)
041-9310-951-06-10 G14001

IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address
City State ZIP Required

PAYMENT 1 Bill Sender 2 Bill Recipient's FedEx Acct. No. 3 Bill 3rd Party FedEx Acct. No. 4 Bill Credit Card
5 Cash Check

4 SERVICES (Check only one box)		5 DELIVERY AND SPECIAL HANDLING (Check services required)		6 PACKAGES		WEIGHT In Pounds Only		YOUR DECLARED VALUE (See right)		Emp. No. _____ Date _____ Federal Express Use _____			
Priority Overnight (Delivery by next business morning) 11 <input type="checkbox"/> OTHER 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. No Saturday delivery) 15 <input type="checkbox"/> OTHER PACKAGING 16 <input type="checkbox"/> FEDEX LETTER* 17 <input type="checkbox"/> FEDEX PAK* 18 <input type="checkbox"/> FEDEX BOX 19 <input type="checkbox"/> FEDEX TUBE		HOLD FOR PICK-UP (Fill in Box H) 1 <input type="checkbox"/> WEEKDAY 2 <input checked="" type="checkbox"/> SATURDAY DELIVER 3 <input type="checkbox"/> WEEKDAY 4 <input type="checkbox"/> SATURDAY (Extra charge) (Not available to all locations)		4 <input type="checkbox"/> DANGEROUS GOODS (Extra charge) 5 <input type="checkbox"/> 6 <input type="checkbox"/> DRY ICE Dangerous Goods Shipper's Declaration not required Dry Ice 9 UN 1845 _____ X _____ kg. III		7 <input type="checkbox"/> OTHER SPECIAL SERVICE _____ 8 <input type="checkbox"/> SATURDAY PICK-UP (Extra charge) 9 <input type="checkbox"/> HOLIDAY DELIVERY (if offered) (Extra charge)		DIM SHIPMENT (Chargeable Weight) <input type="checkbox"/> _____ lbs. L x W x H Received At: 1 <input type="checkbox"/> Regular Stop 3 <input checked="" type="checkbox"/> Drop Box 2 <input type="checkbox"/> On-Call Stop 4 <input type="checkbox"/> B.S.C. 5 <input type="checkbox"/> Station		Street Address _____ City _____ State _____ Zip _____ Received By: X Date/Time Received _____ FedEx Employee Number _____ REVISION DATE 6/92 PART #137204 FXEM 11/92 FORMAT #136 136 © 1991-92 FEDEX PRINTED IN U.S.A.	

Freight Service (for packages over 150 lbs.)
70 OVERNIGHT FREIGHT** 80 TWO-DAY FREIGHT**
(Confirmed reservation required) *Declared Value Limit \$500. **Call for delivery schedule.

P 062 921 922



Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to <i>AK Sharma</i>	
Street and No. <i>Kissimmee Util. Auth.</i>	
P.O., State and ZIP Code <i>Kissimmee, FL</i>	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date <i>11-18-92</i> <i>AC 49-205703</i> <i>050-F1-182</i>	

PS Form 3811, July 1983 447-945

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. Show to whom, date and address of delivery.

2. Restricted Delivery.

3. Article Addressed to:
Mr. A-K. Sharma
Director of Power Supply
Kissimmee Utility Authority
1701 W Carroll St.
Kissimmee, FL 34741

4. Type of Service: Article Number

Registered Insured
 Certified COD *0062 921 922*
 Express Mail

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature of Addressee
*X *Victoria Argueta**

6. Signature - Agent
X

7. Date of Delivery
11/20/92

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

DOMESTIC RETURN RECEIPT

PS Form 3800, June 1991



BLACK & VEATCH

8400 Ward Parkway, P.O. Box No. 8405, Kansas City, Missouri 64114, (913)339-2000

Kissimmee Utility Authority
Cane Island Combustion Turbine Project

B&V Project 17645
B&V File 32.0402
August 14, 1992

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

RECEIVED
AUG 17 1992
Division of Air
Resources Management

Subject: Supplemental Information

Attention: Mr. C. H. Fancy, P.E.

Gentlemen:

Enclosed are the results of additional dispersion modeling performed for the bypass stack operation of the Cane Island Combustion Turbine Project proposed by the Kissimmee Utility Authority to further supplement its Authority To Construct/PSD permit application (PSD-FL-182/AC 49-205703). The modeling results demonstrate that ambient air quality impacts are lower for bypass stack operation than for normal combined cycle operation of the project.

We believe these results will allow you to add bypass stack operation to our project. If you have any questions concerning these results, please call me at (913) 339-2164 or Amy Carlson at (913) 339-7425. Thank you for your cooperation in this matter.

Very truly yours,

BLACK & VEATCH

David M Lefebvre

David M. Lefebvre

Enclosure

cc: Mr. Ben Sharma, Kissimmee Utility Authority

C. Halladay
D. Nelson



QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL
PACKAGE
TRACKING NUMBER

2681272904

21754

2681272904

RECIPIENT'S COPY

From (Your Name) Please Print W. L. Carlson		Your Phone Number (Very Important) (913) 339 7425		To (Recipient's Name) Please Print Mr. Ch. H. Fancy		Recipient's Phone Number (Very Important) (904) 339 1341			
Company ACK & VEATCH		Department/Floor No. p5e5		Company Florida Department of Environmental		Department/Floor No. 904			
Street Address 401 LAMAR				Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes) Twin Towers Office Bldg. 2600 Rialto					
City IRLAND PARK		State KS		City Bureau of Air Regulation		State FL			
ZIP Required 66211		ZIP Required 32399-24		Street Address 2611ah...		Street Address 32399-24			
YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.) 17645.130									
PAYMENT: <input checked="" type="checkbox"/> Bill Sender <input type="checkbox"/> Bill Recipient's FedEx Acct. No. <input type="checkbox"/> Bill 3rd Party FedEx Acct. No. <input type="checkbox"/> Bill Credit Card									
5 <input type="checkbox"/> Cash/Check									
4 SERVICES (Check only one box)		5 DELIVERY AND SPECIAL HANDLING (Check services required)		6 PACKAGES		WEIGHT In Pounds Only			
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 Economy Two-Day (Delivery by second business day) 30 <input type="checkbox"/> ECONOMY Freight Service (for packages over 150 lbs.) 70 <input type="checkbox"/> OVERNIGHT FREIGHT** 80 <input type="checkbox"/> TWO-DAY FREIGHT** (Confirmed reservation required)		Standard Overnight (Delivery by next business afternoon. No Saturday delivery) *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 Government Overnight (Restricted for authorized users only) 46 <input type="checkbox"/> GOVT LETTER 41 <input type="checkbox"/> GOVT PACKAGE 7 <input type="checkbox"/> HOLD FOR PICK-UP (Fill in Box H) 2 <input checked="" type="checkbox"/> DELIVER WEEKDAY 3 <input type="checkbox"/> DELIVER SATURDAY (Extra charge) (Not available to all locations) 4 <input type="checkbox"/> DANGEROUS GOODS (Extra charge) 5 <input type="checkbox"/> 6 <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"/> 12 <input type="checkbox"/> HOLIDAY DELIVERY (if offered) (Extra charge)		Total Total Total DIM SHIPMENT (Chargeable Weight) _____ lbs. L x W x H _____ x _____ x _____		Emp. No. Date <input type="checkbox"/> Cash Received <input type="checkbox"/> Return Shipment <input type="checkbox"/> Third Party <input type="checkbox"/> Chg. To Del. <input type="checkbox"/> Chg. To Hold Street Address City State Zip Received By: <input checked="" type="checkbox"/> X Date/Time Received FedEx Employee Number		Federal Express Use Base Charges Declared Value Charge Other 1 Other 2 Total Charges REVISION DATE 2/92 PART #137204 FXEM 6/92 FORMAT #126 126 © 1991-92 FEDEX PRINTED IN U.S.A.	
7 Release Signature:		3 <input type="checkbox"/> Drop Box		4 <input type="checkbox"/> B.S.C.		5 <input type="checkbox"/> Station			
		1 <input type="checkbox"/> Regular Stop		2 <input type="checkbox"/> On-Call Stop					

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- 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 next to the article number.

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:

*Mr. A.K. Sharma
Director of Power Supply
Kissimmee Utility Auth.
PO BOX 423219
Kissimmee, FL 34742-3219*

4a. Article Number

P 710 058 498

4b. Service Type

- Registered Insured
 Certified COD
 Express Mail Return Receipt for Merchandise

7. Date of Delivery

JUL - 6 1992 *Ch*

5. Signature (Addressee)

6. Signature (Agent)

L. Boyd

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

PS Form 3811, October 1990

★U.S. GPO: 1990-273-861

DOMESTIC RETURN RECEIPT

P 710 058 498



Certified Mail Receipt

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

PS Form 3800, June 1990

Sent to		<i>AK Sharma</i>
Street & No.		<i>Kissimmee UA</i>
P.O., State & ZIP Code		<i>KISS, FL</i>
Postage		\$
Certified Fee		
Special Delivery Fee		
Restricted Delivery Fee		
Return Receipt Showing to Whom & Date Delivered		
Return Receipt Showing to Whom, Date, & Address of Delivery		
TOTAL Postage & Fees		\$
Postmark or Date		<i>6-30-92</i> <i>AC 49-205703</i> <i>PSD-FL-182</i>



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2
Lawton Chiles, Governor Carol M. Browner, Secy

Best Available Copy

FAX TRANSMITTAL COVER

DATE: 30 June 92

TO: Amy CARLSON
Black + Veatch
Kansas City, Mo

PHONE: 913-339-7425

FAX: 913-339-2934

NUMBER OF PAGES TRANSMITTED (INCLUDING COVER SHEET) 4

* * * * *

FROM: Cleve Holladay
Bureau of Air Regulation

PHONE: SUNCOM 278-1344 OR (904) 488-1344

FAX: (904) 922-6979

PLEASE CONTACT AT ABOVE NUMBER IF TRANSMISSION IS INCOMPLETE OR UNREADABLE.

COMMENTS:

KVA letter



BLACK & VEATCH

8400 Ward Parkway, P.O. Box No. 8405, Kansas City, Missouri 64114, (913) 339-2000

RECEIVED

JAN 28 1992

Kissimmee Utility Authority
Cane Island Combustion Turbine Project

B&V Project, 17645
Division of Air
Resources Management
B&V File # 32-0200
January 20, 1992

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

Subject: PSD Class I Air Modeling

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

Gentlemen:

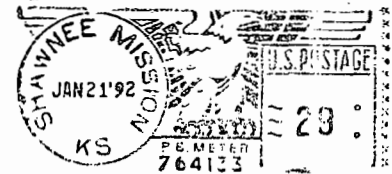
Black & Veatch received your January 3, 1992, letter to Mr. A. K. Sharma (KUA) requesting additional information for the Cane Island project PSD permit application to be considered complete. The additional information requested includes PSD Class I increment consumption and air quality related value (AQRV) analyses at Chassahowitzha National Wilderness Area. In a January 9, 1992, telephone conversation with Black & Veatch, Cleve Holladay (FDER) detailed the following steps for performing the PSD Class I increment analysis.

- 1) Air dispersion modeling using ISCST will be performed for the proposed project sources to determine project impacts at nine FDER-provided receptors for Chassahowitzha National Wilderness Area. Modeling will be based on five years of hourly surface meteorological data and upper data (1982-1986). The highest impacts will be compared with the National Park Service (NPS) "significant" impact levels. These levels are derived by dividing the EPA significant impact levels by the AAQS, and then multiplying by the PSD Class I increments. The analysis must be conducted for every pollutant which has significant emission rates above EPA significant annual emission thresholds for which PSD Class I increments exist. If the project's impacts are less than the NPS significant impact levels, then the analysis is concluded for that pollutant. If the impacts are greater, then Step 2 must be performed.

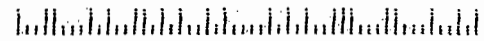


BLACK & VEATCH

P.O. Box No. 8405
Kansas City, Missouri 64114



MR C H FANCY, CHIEF
BUREAU OF AIR REGULATION
FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FL 32399-2400



SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- 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 next to the article number.

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:

Mr. A. K. Sharma
 Director of Power Supply
 Kissimmee Utility Authority
 P.O. Box 423219
 Kissimmee, FL 34742-3219

4a. Article Number

P 832 538 759

4b. Service Type

- Registered Insured
 Certified COD
 Express Mail Return Receipt for Merchandise

7. Date of Delivery**5. Signature (Addressee)**

A. K. Sharma

6. Signature (Agent)**8. Addressee's Address (Only if requested and fee is paid)**

PS Form 3811, October 1990

☆ U.S. GPO: 1990-273-881

DOMESTIC RETURN RECEIPT

P 832 538 759

**Certified Mail Receipt**

No Insurance Coverage Provided
 Do not use for International Mail
 (See Reverse)

Sent to	
Mr. A. K. Sharma	
Street & No.	
Director of Power Supply	
Kissimmee Utility Authority	
P.O. State & ZIP Code	
P.O. Box 423219	
Kissimmee, FL 34742-3219	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	\$
Postmark or Date	
mailed: 1/3/92	
AC 49-205703	
PSD-FL-182	

PS Form 3800, June 1990

SENTINEL STAR

Published Daily
Kissimmee, Osceola County, Florida

State of Florida } ss.
COUNTY OF ORANGE

Before the undersigned authority personally appeared _____

Betty M. Kinney, who on oath says that

she is the Legal Advertising Representative of the Sentinel Star, a Daily newspaper published at Kissimmee, in Osceola County, Florida; that the attached copy of advertisement, being a Public Notice in the matter of A Modification to an existing air pollution source, etc.

_____ in the _____ Court, was published in said newspaper in the issues of October 28, 1981

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

Betty M. Kinney

Sworn to and subscribed before me this 30th day

December A.D., 19 81

Maeoni C. Parks
Notary Public

Notary Public, State of Florida at Large
My Commission Expires Jan. 21, 1984

ADVERTISING CHARGE \$22.13

PUBLIC NOTICE

A modification to an existing air pollution source is being proposed by Kissimmee Utilities located in the City of Kissimmee, Osceola County, Florida. The proposed modification is the construction of a 49.9 MW combined cycle gas turbine. The modification will increase emissions of air pollutants, in tons per year, by the following amounts:

PM	SO ₂	NO _x	CO	VOC
69	1700	1095	227	82

The proposed modification has been reviewed by the Florida Department of Environmental Regulation (FDER) under Chapter 403, Florida Statutes, and Federal regulation 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The Department has made a preliminary determination that the construction can be approved provided certain conditions are met. A summary of the basis for the determination and the application for State and Federal permits submitted by Kissimmee Utilities are available for public review at the following offices:

Bureau of Air Quality Management
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

South Florida Subdistrict
Dept. of Environmental Regulation
2745 S. E. Morningside Blvd.
Port St. Lucie, Florida 33452

Kissimmee Public Library
305 E. Broadway
Kissimmee, Florida 32741

The maximum percentages of allowable PSD increments consumed by the proposed modification will be as follows:

	Annual	24-Hour	3-Hour
PM	Negligible	Negligible	NA
SO ₂	5	11	9

Any person may submit written comments to FDER regarding the proposed modification. All comments, postmarked not later than 30 days from the date of notice, will be considered by FDER in making a final determination regarding approval for construction of this source. Those comments will be made available for public review on request. Furthermore, a public hearing can be requested by any person. Such request should be submitted within 14 days of the date of this notice. Letters should be addressed to:

Mr. C. H. Fancy
Bureau of Air Quality Management
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

OS-37 Oct. 28, 1981



POST OFFICE TO ADDRESSEE



B 10379939

FROM: Tim Powell, BAQM/DER
 Twin Towers Bldg
 Tallahassee, Florida
 32301

ORIGIN:

Initials of Receiving Clerk: **AF.**

P.O. ZIP Code: **32302**

Date in: **10/21/81** Time in: **2:40pm**

Return Receipt Service
 To Whom & Date Del.
 To Whom, Date & Address of Del.

Weight: **1.02** Lbs. Postage & Fees: **\$ 9.05**

Value Declared, if any: Customer Number, if any:

TO: ORLANDO SENTINEL-STAR
 633 N. Orange Ave.
 Orlando, FL 32801

SERVICE GUARANTEE:
 Domestic mailings under this service made at designated USPS facilities on or before a specified deposit time will be accepted for express shipment to a designated USPS delivery area having Express Mail Service for next day delivery to an addressee or agent on or before the time specified by the USPS at mailing. USPS will refund upon application to originating office the postage for any shipments mailed under this service and not meeting the service standard except for those delayed by strike or work stoppage. See USPS Notice 43 for details.

INSURANCE COVERAGE:
 See USPS Notice 7 or 63 for exclusions of coverage.
 (1) *Document Reconstruction Insurance.* Non-negotiable documents are insured against loss, damage, or rifling up to \$50,000 per piece, subject to a limit of \$500,000 per occurrence.
 (2) *Merchandise Insurance.* Parcels are insured against loss, damage, or rifling up to a maximum of \$500. The mailer must declare the value of the article at the time of mailing.

- Signature is required upon delivery.
- Claims for delay, loss, damage or rifling must be made within 60 days. Claim forms may be obtained at the post office of mailing.

LABEL 11B ☆ DEC/80 U.S.G.P.O. 1981-336-234

EXPRESS MAIL SERVICE Customer Receipt

PRESS HARD YOU ARE MAKING 4 COPIES

Note :

In telecon with George Humbert, FDER, Port St. Lucie, he said he wrote letter request fee on 8/17/81. This supposedly only covered fee request. 20⁰⁰ Fee was rec'd by him on 31 AUG - this is the new complete date unless there are further ~~pts~~ points need to be addressed.

Tim Powell, Sept. 1 '81

DEPARTMENT OF ENVIRONMENTAL REGULATION

ROUTING AND TRANSMITTAL SLIP		ACTION NO.
		ACTION DUE DATE
1. TO: (NAME, OFFICE, LOCATION)	CLAIR FANCY, P.E.	INITIAL
		DATE
2.	BUREAU A.Q.M.	INITIAL
		DATE
3.	DER, TALLY	INITIAL
		DATE
4.		INITIAL
		DATE

REMARKS:

ENCLOSED PLEASE FIND

YOUR COPY OF:
 APPLICATION FOR KISSIMMEE
 UTILITIES CONSTRUCT PERMIT AND
 PSD REPORT, PREPARED BY
 ESE OF GAINESVILLE

AC 49-46521

Free Pk. 8/31/81

8/17/81



INFORMATION	
<input type="checkbox"/>	REVIEW & RETURN
<input type="checkbox"/>	REVIEW & FILE
<input type="checkbox"/>	INITIAL & FORWARD
DISPOSITION	
<input type="checkbox"/>	REVIEW & RESPOND
<input type="checkbox"/>	PREPARE RESPONSE
<input type="checkbox"/>	FOR MY SIGNATURE
<input type="checkbox"/>	FOR YOUR SIGNATURE
<input type="checkbox"/>	LET'S DISCUSS
<input type="checkbox"/>	SET UP MEETING
<input type="checkbox"/>	INVESTIGATE & REPT
<input type="checkbox"/>	INITIAL & FORWARD
<input type="checkbox"/>	DISTRIBUTE
<input type="checkbox"/>	CONCURRENCE
<input type="checkbox"/>	FOR PROCESSING
<input type="checkbox"/>	INITIAL & RETURN

FROM: Geo. Humbert PORT ST. LUCIE	DATE: 8/17/81
	PHONE:

P167682502

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL
(See Reverse)

SENT TO		Jack T. Danforth	
STREET AND NO.		P.O. Box 1608	
P.O., STATE AND ZIP CODE		Kissimmee, FL 32741	
POSTAGE		\$	
CONSULT POSTMASTER FOR FEES	OPTIONAL SERVICES	CERTIFIED FEE	c
		SPECIAL DELIVERY	c
		RESTRICTED DELIVERY	c
	RETURN RECEIPT SERVICE	SHOW TO WHOM AND DATE DELIVERED	c
		SHOW TO WHOM, DATE, AND ADDRESS OF DELIVERY	c
		SHOW TO WHOM AND DATE DELIVERED WITH RESTRICTED DELIVERY	c
		SHOW TO WHOM, DATE AND ADDRESS OF DELIVERY WITH RESTRICTED DELIVERY	c
TOTAL POSTAGE AND FEES		\$	
POSTMARK OR DATE		10-27-81	

PS Form 3800, Apr. 1976