



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.

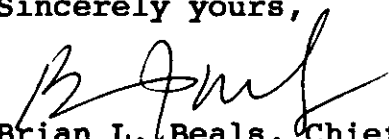
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DEC 28 1992

Division of Air
Resources Management
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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. Keon
C. Halladay
C. Collins, CDist.
G. Bunnick, NPS
D. Lefebvre, B&V

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



P.O. BOX 423219 KISSIMMEE, FLORIDA 34742-3219
(407) 833-7777 • FAX: (407) 847-0787

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

J. Wilson
C. Holladay

RECEIVED

DEC 23 1992

Division of Air
Resources Management

The Orlando Sentinel

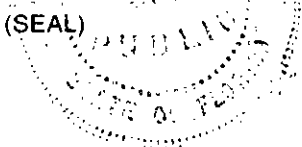
Published Daily
\$185.31

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.



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 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. CORCI63006 Dec. 20, 1992

Department of Environmental Regulation
Routing and Transmittal Slip

To: (Name, Office, Location)

- 1. *Hester Lewis*
- 2. *ARM - BAR Permits*
- 3.
- 4.

Remarks:

*For your files -
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JAN 04 1993

Division of Air
Resources Management

From:

Joann - Purchase

Date

1-4-92

Phone

922-5907



United States Department of the Interior

NATIONAL PARK SERVICE
AIR QUALITY DIVISION
P.O. BOX 25287
DENVER, CO 80225

FACSIMILE

DATE: 12/18/92

TIME: 2:10

FAX PHONE NO. (303) 969-2822

NUMBER OF PAGES TO FOLLOW 3

TO: FDE

PHONE: _____

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: A. Calladay
S. Brown

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 Lewis
Shuck
Dexter
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

ccs

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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DEC 16 1992

Division of Air
Resources Management



QUESTIONS? CALL 800-238-5355 TOLL FREE.

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Date
12/15/92

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YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.) 041-9810-951-06-10 G14001			IF HOLD FOR PICK-UP, Print FEDEX Address Here Street Address City State ZIP Required		
PAYMENT 1 <input type="checkbox"/> Bill Sender 2 <input type="checkbox"/> Bill Recipient's FedEx Acct. No. 3 <input type="checkbox"/> Bill 3rd Party FedEx Acct. No. 4 <input type="checkbox"/> Bill Credit Card			5 <input type="checkbox"/> Cash Check		

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Freight Service (for packages over \$50.00) 70 <input type="checkbox"/> OVERNIGHT FREIGHT** 80 <input type="checkbox"/> TWO-DAY FREIGHT** <small>(Confirmed reservation required)</small> <small>* Delivery commitment may be later in some areas</small>		**Declared Value Limit \$500 <small>**Call for delivery schedule</small>		Release Signature: _____			

PHONE (404) 347-2904

FAX (404) 347-3059



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

PSD 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

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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

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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.

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- 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**.

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- 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."

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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:"

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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

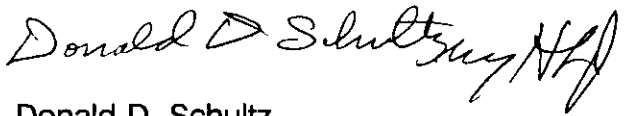
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If you have any questions concerning these comments, please call Amy Carlson (913) 339-7425 or David Lefebvre (913) 339-2164.

Very truly yours,

BLACK & VEATCH

A handwritten signature in cursive script that reads "Donald D. Schultz". The signature is written in black ink and is positioned above the printed name.

Donald D. Schultz

cjs