September 8, 1997

Al Linero, PE
New Source Review Section
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400
FAX: (904) 922-6979

Re: Osceola Power Limited Partnership
Modification of AC50-269980 / PSD-FL-197A
Request to Revise Standards for CO, Hg, NOx, Pb, and SO_2, for Cogeneration Boilers

Dear Mr. Linero:

We have reviewed the above referenced request and have the following comments:

Carbon Monoxide

After a review of the standards set for similar industries, the Health Department has no objection to the request to revise the averaging time to a 24 hour block average. We request that the permit specifically state compliance will be demonstrated by continuous monitor for each day of operation.

Mercury

The test results for mercury indicate that these emissions may vary greatly depending on the mercury content in the wood waste feed. The applicant states that no correlation can be made between the controlled emission rate and the activated carbon feed rate based on these past tests. However, a review of the test results indicates that only the controlled emissions are being measured during the testing; the uncontrolled mercury emissions are being *calculated* based on sampling and analysis of the wood waste and feed rate. The Health Department believes this leads to inaccurate results. Before establishing a new, higher mercury emissions limit, we request the following:

- Conduct a series of simultaneous mercury emissions tests on the inlet and outlet at varying carbon feed rates to establish a relationship between the control device and mercury emissions.
- Based on the new test results, establish a minimum carbon feed rate. Continuously monitor this feed rate to determine compliance.
- Annually test inlet/outlet at minimum carbon feed rate to check relationship.

Lead

If lead emissions are being controlled with a 97% efficiency, but the emissions limit is still being exceeded, then the assumption is that the lead content of the wood waste is higher than originally estimated. Rather than increase the lead emissions limit, the Health Department asks for better control and screening of the wood waste materials being burned in the boilers.

Nitrogen Oxides (NOx)

The following summarizes my understanding of the NOx issue:

Osceola originally requested a lower NOx limit (0.12 lb/mmBTU, biomass) than Okeelanta Power (0.15 lb/mmBTU, biomass) in order to escape a BACT determination at that time. Increased NOx emissions of 39.3 TPY were kept just below the 40 TPY significance level. This lower emissions rate required a 40% higher urea injection rate to obtain only a 7.5% reduction in NOx emissions. The high urea injection rate lead to the following problems:

- Increased ammonia slip resulting in ammonia bisulfate formation which, in turn, lead to fowling of the air preheater, fowling of the electrostatic precipitator, and eventually excess opacity.
- Increased superheater tube failure resulting in additional boiler down time, increased emissions during startup and shutdown, and lost power generation and revenues
- Substantially increased expense of urea injection.

The applicant has stated that an inspection by a private consultant concluded that the increase in opacity is the result of a decrease in the resistivity of the flue gas particulate due to the high ammonia and moisture levels. Given the reduced number of these problems at the Okeelanta facility, this conclusion appears to be reasonable. The modeling results indicate that the increased NOx emissions would have an insignificant effect on the ambient air concentration. The only remaining question that the Health Department has is: *Would the PSD/BACT permitting process have been different if the application were processed with the newly proposed NOx limit back in 1993?*

Sulfur Dioxide

The request proposes the following SO_2 standards:

- 0.10 lb/mmBTU of heat input, on a 24-hour average for bagasse and wood waste *(no change)*
- 0.02 lb/mmBTU of heat input, on an annual basis for bagasse *(no change, at this time?)*
- 0.05 lb/mmBTU of heat input, on an annual basis for wood waste *(revision)*

This request is based on additional information not present during the initial application including specific fuel analyses and CEM data. The applicant has also requested a decrease in coal firing to 14,883 tons per year in order to maintain potential SO_2 emissions below 339 tons per year. The Health Department again reminds the applicant of the specific county zoning conditions regulating actual SO_2 emissions from the combined Osceola and Okeelanta cogeneration facilities.

Consideration of Tire Derived Fuels (TDF)

This request includes comments and calculations considering TDF. The application for modification states that the permit modification is being held in abeyance pending test results. It is the position of the Health Department that TDF is not yet an approved fuel and should not be considered in this request. The Department has only granted a temporary test burn period in which to gather data. Based on the test results, TDF *may or may not* be approved as a permanent fuel. It is our understanding that another request for permit modification must be submitted with the test results. Also, the current emissions standards are specific to the type of fuel being burned. Burning TDF may create yet another emissions standard for several of these pollutants. The Health Department requests that the application exclude TDF at this time.

Thank you for the opportunity to comment on this application. If you have any questions, please contact me at the numbers below.

Sincerely,

For the Division Director
Environmental Health and Engineering

Jeffery F. Koerner

Jeffery F. Koerner, PE
Air Pollution Control Section
Phone: (561) 355-4549 SunCom: 273-4549
FAX: (561) 355-2442

cc: L. Martin Hodgkins, Sr. Director
Zoning Division
Palm Beach County Planning, Zoning, & Building
100 Australian Avenue
West Palm Beach, FL 33406

Ed Walker, Plan Review Section
Palm Beach County Health Department

David Buff, PE
Golder Associates Inc.
Fax: (352) 336-6603

Filename: OSC_PSD.LTR

OSCEOLA POWER LIMITED PARTNERSHIP

P. O. BOX 679

PAHOKEE, FLORIDA 33476

TELEPHONE: (407) 924-7156 x4300

FAX: (407) 924-5628

January 18, 1996

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

Attn: C. H. Fancy

Subject: Osceola Power Limited Partnership
Palm Beach County
Pahokee, Florida
Permit Number: AC50-269980
PSD-FL-197A

Osceola Power L. P. previously provided notification of the Stack Emissions Test for the above referenced project to be performed on January 26-27. Due to mechanical difficulties, this test is postponed indefinitely. We will be providing you with notification of the rescheduled date as it becomes available.

If you have any questions, please contact me at (407) 924-7156.

Sincerely,

Harold L. Sturm
Project Engineer

cc: Michele Griffin, USOSC
James Meriwether, OKPLP
Ajaya Satyal, HRS/PBC
David M. Knowles, FDEP/ Ft. Meyers

OSCEOLA POWER LIMITED PARTNERSHIP

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TELEPHONE: (407) 924-7156 x4300

FAX: (407) 924-7428

1 Willard 1/17
2 ~~Hartley~~
3 Mike Harley
4 Kwani - PSD 197A file

January 10, 1996

RECEIVED
BUREAU OF
AIR REGULATION

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

Attn: C. H. Fancy

RECEIVED
JAN 16 1996
BUREAU OF
AIR REGULATION

Subject: Osceola Power Limited Partnership
Palm Beach County
Pahokee, Florida
Permit Number: AC50-269980
PSD-FL-197A

Osceola Power L. P. would like to provide notification of the Stack Emissions Test for the above referenced project. Tests are currently scheduled to be performed on January 26-27 during the Maximum Continious Rating Test.

If you have any questions, please contact me at (407) 924-7156.

Sincerely,

Harold L. Sturm
Project Engineer

cc: Michele Griffin, USOSC
James Merriwether, OKPLP
Ajaya Satyal, HRS/PBC
David M. Knowles, FDEP/ Ft. Meyers

RECEIVED
JAN 31 1996
Bureau of Air Monitoring
& Mobile Sources

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OSCEOLA POWER LIMITED PARTNERSHIP

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TELEPHONE: (407) 924-7156 x4300

FAX: (407) 924-7428

January 8, 1996

Air Pesticides and Toxic Substances Management Division
Environmental Protection Agency
Region IV
345 Courtland Street, NE
Atlanta, GA 30365

Attn: Mr. Winston A. Smith, Director

re: Osceola Power Limited Partnership
Palm Beach County
Pahokee, FL
Biomass firing
PSD-FL-197A

Dear Mr. Smith,

This letter is to provide you notice of initial firing of biomass fuel for boiler "A"on December 30, 1995, and for boiler "B" on November 22, 1995. These dates are submitted in compliance with 40 CFR 60.7 (a) (2).

If you have any questions, please contact me at (407) 924-7156.

Sincerely,

Harold L. Sturm
Project Engineer

cc: Clair Fancy, FDEP/TLH
Ajaya K. Satyal, HRS/PBCo
David M. Knowles, FDEP/ Ft. Meyers

OSCEOLA POWER LIMITED PARTNERSHIP

P. O. BOX 679

PAHOKEE, FLORIDA 33476

TELEPHONE: (407) 924-7156 x4300 *FAX: (407) 924-7428*

January 3, 1996

State of Florida
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: Osceola Power Limited Partnership
Permit # - AC50-269980
PSD-FL-197A

In compliance with the Specific Conditions of the above referenced permit, we submit our "Wood-Waste Inspection and Testing Plan."

If you have any questions, please contact me on (407) 924-7156.

Sincerely,

Harold Sturm, P.E.
Project Engineer

cc: J. Ketterling
M. Griffin
J. Merriweather
A. K. Satyal HRS/PBC

HS:jmk

CC: SFD - Air
SED - Air
PBC - Air
Hanks - BAR

Wood-Waste
Inspection and Testing Plan

Osceola Generating Plant

1995

Prepared by

Osceola Power Limited Partnership

Osceola Generating Plant
U.S. Hwy. & Hatton Highway
Pahokee, FL 33476

Submitted to
Florida Department of Environmental Protection
Bureau of Air Regulation

TABLE OF CONTENTS

1.0 INTRODUCTION

The Osceola Power, L.P. (OsPLP) is constructing a bagasse/wood-waste fired cogeneration plant, known as the Osceola Generating Plant (OsGP), adjacent to the site of the Sugar Mill. The OsGP is located approximately six miles east of the town of Pahokee in Palm Beach County, Florida.

As a provision of the OsGP's Florida Department of Environmental (FDEP) Air Permit AC50-269980, PSD-FL-197A, the plant is required to implement inspection and testing procedures for the wood-waste and other materials delivered to the plant for fuel. The primary function of these procedures is to keep painted and chemically-treated wood, household garbage, toxic or hazardous non-biomass, and non-combustible waste material from being burned at the plant. This Wood-Waste Inspection and Testing Plan describes the implementation of these procedures during operation of the OsGP to ensure compliance with sampling and analysis provisions outlined in the air permit.

The plan includes a brief description of the OsGP and its operations related to wood-waste in Sections 2.0 and 3.0. Procedures for inspection, sampling, and analysis of the wood-waste at both the wood-waste supply sites and at the OsGP are described in Section 4.0. The OsGP procedures for record keeping of inspections, sampling, and analysis results are provided in Section 5.0. Drawings for the fuel system, showing inspection and sampling locations are provided in the appendix.

2.0 FACILITY INFORMATION

The Osceola Generating Plant (OsGP) is a new 74 MW (gross) bagasse and wood-waste fired cogeneration plant located in Pahokee, Florida, adjacent to the existing Osceola Sugar Mill. The plant is designed to supply high and low pressure steam to the Osceola Sugar Mill during the grinding season (mid-October to April) while burning bagasse, supplied by the sugar mill, as the primary fuel. During the non-grinding season the OsGP is designed to use processed wood-waste as the primary fuel, with no steam provided to the mill. Steam generation will be accomplished by means of bagasse and wood-waste fired non-reheat boilers. Electrical power generation will be provided by means of an extraction-condensing steam turbine/ generator set which will provide electricity to meet in-house loads and for sale to Florida Power & Light.

The major components of the plant include:

- two balanced draft bagasse/wood-fired boilers with membrane wall construction, superheater, and economizer (boilers are also permitted for future coal firing to a maximum of 5.4 % of rated heat input).
- two electrostatic precipitators (one per boiler) with integral stacks
- an extraction-condensing steam turbine/ generator set
- material storage and handling systems (e.g., wood-waste, bagasse, ash)
- ancillary plant equipment

3.0 PROCESS DESCRIPTIONS

The following sub-sections describe the OsGP wood-waste system from a "process flow" standpoint. Although the OsGP also includes a bagasse handling system which operates during the sugar cane grinding season, only the wood-waste is subject to the sampling and analysis requirements of the OsGP air permit. Therefore, only the wood system is described in this plan.

3.1 Wood-Waste Handling System

The following description of the Wood-Waste Handling System is depicted schematically on the wood-waste/bagasse flow diagram (Bechtel Drawing #22586-M-031-0002-03) contained in the appendix.

Wood-waste will be delivered to the OsGP by net 25-ton trucks (typical) at an approximate design rate of 1,200 tons per day, with deliveries anticipated 12 hours per day, 6 days per week. The trucks will be unloaded at the OsGP utilizing two hydraulically operated, tipping floor truck dumpers.

Upon unloading, the wood-waste will be discharged into receiving hoppers equipped with live bottom chain conveyors which will transfer the wood material onto the 42" Truck Unloading Conveyor. The Unloading Conveyor, which is equipped with a belt scale and magnetic separator, will convey the wood-waste to the Hog Tower at a design rate of up to 200 tons per hour (tph).

The Hog Tower is an open facility consisting of a disc screen and a motor-driven, size-reducing hog. The wood-waste will be discharged onto the disc screen which acts to separate material sized less than 3" from any oversized material. The oversized material (i.e., >3") is discharged to the Hog which reduces the wood pieces to the less than 3" size, suitable for feeding into the boilers.

The sized wood-waste is transferred from the Hog Tower via the Storage Conveyor to the Radial Stacker Conveyor which deposits the sized wood-waste at the wood storage area.

Sized wood-waste is reclaimed from the wood pile at a design rate of up to 125 tph through the use of two under-pile chain reclaimers. The reclaimers transfer the sized wood-waste to the Boiler Feed Conveyor which deposits the fuel on to one of two chain distribution conveyors for apportionment into the boilers.

4.0 INSPECTION, SAMPLING, AND ANALYSIS PROCEDURES

As stated in Section 1.0, the FDEP Air Permit for the OsGP requires that inspection, sampling, and analysis of the wood-waste be performed to demonstrate that contaminants, principally copper, chromium, arsenic, are minimized.

The specific inspection and sampling procedures to be utilized at each stage of the wood-waste system is provided in the following sub-sections.

4.1 Wood-Waste Supply Sites.

As stipulated in the OsGP fuel supply contracts with the wood-waste suppliers, the delivered wood-waste must be substantially free of plastics, rubber, glass, and painted wood and contain only incidental amounts of chemically treated wood (e.g., chromium, copper, arsenic, creosote, pentachlorophenol).

To help ensure that wood-waste delivered to the OsGP meets the provisions of the air permit, as well as other fuel quality specifications, the wood-waste suppliers will perform inspection and material segregation operations on each load of feedstock received at their facilities. Although the OsGP will obtain wood-waste fuel from several different suppliers with a variety of sources for their unprocessed feedstock, the following description of the inspection and material segregation operations are typical of those operations performed at wood yards supplying the OsGP.

The bulk material feedstock at the originating wood yards will first undergo a "gross" material separation by removing the bulk wood-waste from other mixed wastes (e.g., plastics, non-wood debris, scrap metal, concrete/soils) through the use of heavy equipment, magnetic separation, and mechanical screening. Trained personnel will be involved in oversight at this level of material segregation such that the majority of prohibited wastes are removed from the bulk wood-waste. After this operation, the wood-waste will be further visually inspected and manually sorted (when applicable) to remove chemically-treated and painted wood, smaller mixed wastes and other non-combustible materials. The "sorted" wood-waste is then mechanically sized and screened (to actual contract specifications) prior to delivery to the OsGP site.

As a quality assurance measure, each fuel supplier's operations will be reviewed at least once monthly through an unannounced site inspection of OsGP personnel. These visits will allow OsGP to ensure that the supplier's inspection and segregation efforts remain at acceptable levels.

4.2 OsGP Wood Yard Storage

In accordance with the FDEP Air Permit, analysis of wood-waste to be burned at the plant will be conducted on a weekly basis for the first year of operation at the OSGP. Thereafter, upon approval of FDEP, sampling and analysis may be reduced to a monthly basis.

Upon delivery of the wood-waste to the OSGP, each load will be visually inspected by the Fuel/Ash Handler stationed at the truck receiving dumping area. Loads which contain unacceptable, visible amounts (i.e., greater than fuel contract specified limits) of chemically treated and/or painted wood and other prohibited mixed wastes will be rejected by the inspector and prevented from discharging at the OsGP fuel storage area. If the delivered load is acceptable based on the visual inspection, the truck will be staged for unloading.

Sampling of the wood-waste will occur at the OsGP fuel storage yard. Representative samples will be taken from specified sections of the wood-waste pile which represent and include the fuel to be reclaimed and burned during the following week of plant operation. These "weekly" sections, and their schedule for reclamation and burning, will be identified and approved by the Plant Manager (or designee) prior to samples being taken.

A total of three grab samples will be taken from different areas and depths as the specified "weekly" section of the fuel pile. Each grab sample will be approximately one pound and will be stored in sealable plastic (ziplock®-type) bags.

Prior to releasing the samples for outside lab analysis, a "composite sample" will be produced by combining the three individual grab samples into a homogeneous mixture and cutting out a single sample from the mixture as specified by the lab performing the analysis. This "composite sample" will represent the composition of the wood-waste to be burned during the following week of plant operations. The remaining portion of the homogenous mixture will be retained onsite for use as a control sample to verify the lab test results, if necessary.

Laboratory results on the samples will typically be available to the OsGP Fuel Manger within 2-3 days of receipt of the sample at the lab. Any results which indicate contamination of the wood-waste in the "weekly" section of the pile by copper, chromium, and/or arsenic in concentrations above the air permit-specified limits (i.e., 62.8 ppm copper, 83.3 ppm chromium, and 70.7 ppm arsenic) will be immediately investigated by the onsite Environmental, Health and Safety Representative (EH&S). The "weekly" section of the pile tested will not be burned until additional testing of the control sample is undertaken to verify the original test results. If necessary additional sampling/testing will be performed to determine the extent of contaminated wood-waste in the "weekly" section of the fuel pile.

4.4 Analysis Results

Results from the wood-waste tests will be analyzed so that a confidence level of the content of regulated metals in the feedstock (wood-waste) can be determined. This information will be used to assess the adequacy of the wood-waste inspection procedures. In addition, this information may be used to support a future request by OsGP for FDEP to relax the sampling and analysis requirements of this plan.

5.0 RECORDKEEPING

As required by the OsGP air permit, results from the weekly wood-waste analysis will be included in the Stack Monitoring Reports submitted quarterly to FDEP's South and Southeast district Offices and the Palm Beach County Health Unit. Specifically, FDEP will be notified of:

- Any analysis results which indicate exceedences of the allowable concentrations of copper, chromium, and arsenic.
- Any re-sampling/re-analysis and handling ("blending") of the wood-waste performed in the event an exceedence is indicated by the original analysis.
- The ultimate disposal of the out of specification material.

In addition, records on the various wood-waste inspections and wood-waste sampling and analysis procedures outlined in this Plan will be maintained at the OSGP for review on an as-requested basis by FDEP. The records will typically include:

- Fuel delivery information (e.g., supplier, time/date of delivery, type of material, delivery size).
- Written inspection reports (stating findings) of unannounced site visits to wood-waste suppliers to determine adequacy of their material segregation operations.
- Wood-waste sampling and analysis information (e.g., time/date of sampling, locations selected from the "weekly" sections, any atypical conditions, labs utilized, sample results).

These records may also be used by OsGP personnel in investigating potential non-compliance events and verifying fuel test results.

OSCEOLA POWER LIMITED PARTNERSHIP

P. O. BOX 679

PAHOKEE, FLORIDA 33476

TELEPHONE: (407) 924-7156 x4300

FAX: (407) 924-7428

November 16, 1995

Air Pesticides and Toxic Substances Management Division
Environmental Protection Agency
Region IV
345 Courtland Street, NE
Atlanta, GA 30365

Attn: Mr. Winston A. Smith, Director

re: Osceola Power Limited Partnership
Palm Beach County
Pahokee, FL
Biomass firing
PSD-FL-197A

Dear Mr. Smith,

This letter is to provide you notice of the anticipated date of initial firing of biomass fuel for boiler "A" on or after December 13, 1995, and for boiler "B" on or after December 15, 1995. These dates are submitted in compliance with 40 CFR 60.7 (a) (2).

If you have any questions, please contact me at (407) 924-7156.

Sincerely,

Harold L. Sturm
Project Engineer

cc: Clair Fancy, FDEP/TLH
Ajaya K. Satyal, HRS/PBCo
David M. Knowles, FDEP/ Ft. Meyers

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

NOV 02 1995

4APT-AEB

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

RE: Osceola Power Limited Partnership (PSD-FL-197A)

Dear Mr. Fancy:

This is to acknowledge receipt of your preliminary determination and draft Prevention of Significant Deterioration (PSD) permit for the above referenced source by letter dated July 27, 1995. The proposed PSD permit modification will allow the source to construct a 74 MW cogeneration facility instead of the previously permitted 65 MW facility. We have reviewed the package as requested and have no adverse comments. If you have any questions on this determination, please contact Mr. Gregg Worley of my staff at (404) 347-3555 ext. 4139.

Sincerely yours,

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