

File

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HOWELL L. FERGUSON  
OF COUNSEL

VICTORIA J. TSCHINKEL  
SENIOR CONSULTANT  
(NOT A MEMBER OF THE FLORIDA BARI)

April 26, 1996

RECEIVED  
APR 26 1996  
BUREAU OF  
AIR REGULATION

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

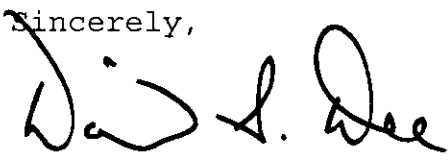
Re: Permit Amendment for Okeelanta  
and Osceola Cogeneration Facilities

Dear Willard:

As you know, Okeelanta Power Limited Partnership (Okeelanta Power) and Osceola Power Limited Partnership (Osceola Power) requested permit amendments to allow the simultaneous operation of their cogeneration facilities and the related sugar mills during the 1996-97 crop season. To supplement their requests for permit amendments, I have identified the specific changes that should be made to the Okeelanta Power and Osceola Power permits. My recommended language for the permit amendments is attached to this letter.

For your convenience, I have also attached a computer diskette which contains: (a) the current permit language for each cogeneration facility; (b) the proposed permit changes, which are shown with underlining and strike-throughs; and (c) a "clean" version of each permit, as amended. The permit conditions are presented in WordPerfect 6.0 format.

I hope this information is helpful to you. Please call me if you have any questions.

Sincerely,  
  
David S. Dee

ORIGINAL VERSION

SPECIFIC CONDITIONS FOR OKEELANTA PERMIT:

17. During the first three years of commercial cogeneration facility operation, the existing Boilers Nos. 4, 5, 6, 10, 11, 12, 14, and 15 (Permit Nos. AO50-169210, 190690, 175414, 190693, 175411, 169215, 189904, and 209094, respectively), may be retained for standby operation. During the period from initial firing to commercial operation, all three cogeneration boilers can be operated simultaneously with the existing boilers. Only biomass and No. 2 fuel oil may be used in the cogeneration boilers during this period. If more than 910,836 lb/hr steam is generated in the cogeneration boilers, steam in excess of 910,836 lb/hr must be sent to the Okeelanta sugar mill, and the existing boiler's steam production reduced by an equivalent amount. This period shall not exceed a total duration of 12 months. During this 12 month period, simultaneous operation of the existing boilers and the cogeneration boilers shall not occur on more than a total of 90 calendar days. After the first year of cogeneration facility operation, the existing boilers may be operated only when all three cogeneration boilers are shutdown. During operation the existing boilers must meet all requirements in the most recent construction and operation permits for the boilers. These existing boilers shall be shutdown and rendered incapable of operation within three (3) years of commercial startup of the cogeneration facility, but no later than January 1, 1999.

18. Boiler No. 16 (AC50-191876) may be retained as a standby boiler for the cogeneration facility provided its permit is amended to authorize standby use. Boiler No. 16 may be operated during initial startup, debugging, and testing of the cogeneration facility for a period not to exceed 12 months following initial firing of fuel in the new boilers. After the first year of cogeneration operation, this boiler may be operated only when one or more of the three cogeneration boilers are shutdown. During operation, this boiler must meet all requirements in the current construction or operating permit for the boiler.

/OKEE1

VERSION WITH UNDERLINING AND ~~STRIKE THROUGH~~

SPECIFIC CONDITIONS FOR OKEELANTA PERMIT:

17. During the first three years of commercial cogeneration facility operation, the existing Boilers Nos. 4, 5, 6, 10, 11, 12, 14, and 15 (Permit Nos. A050-169210, 190690, 175414, 190693, 175411, 169215, 189904, and 209094, respectively), may be retained for standby operation. During the period from initial firing until April 1, 1997 ~~to commercial operation~~, all three cogeneration boilers can be operated simultaneously with the existing boilers. Only biomass and No. 2 fuel oil may be used in the cogeneration boilers during this periods of simultaneous operation. If more than 910,836 lb/hr steam is generated in the cogeneration boilers, steam in excess of 910,836 lb/hr must be sent to the Okeelanta sugar mill, and the existing boiler's steam production reduced by an equivalent amount. ~~This period shall not exceed a total duration of 12 months. During this 12 month period, simultaneous operation of the existing boilers and the cogeneration boilers shall not occur on more than a total of 90 calendar days.~~ After April 1, 1997 ~~the first year of cogeneration facility operation~~, the existing cogeneration boilers may be operated only when all three cogeneration the existing sugar mill boilers are shutdown or in the process of shutting down. During operation the existing sugar mill boilers must meet all requirements in the most recent construction and operation permits for the boilers. These existing boilers shall be shutdown and rendered incapable of operation within three (3) years of commercial startup of the cogeneration facility, but no later than January 1, 1999.

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/OKEE1B

"CLEAN" VERSION

SPECIFIC CONDITIONS FOR OKEELANTA PERMIT:

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/OKEE2

ORIGINAL VERSION

SPECIFIC CONDITIONS FOR OSCEOLA PERMIT:

17. During the first three years of commercial cogeneration facility operation, the existing Boilers Nos. 2, 3, 4, 5, and 6 (Permit Nos. AC 50-203679, 165813, 203680, 165626, and 165814, respectively), may be retained for standby operation provided their operating permits are valid.

During the period from initial firing to commercial operation, both cogeneration boilers can be operated simultaneously with the existing boilers. Only biomass and No. 2 fuel oil may be used in the cogeneration boilers during this period. If more than 570,000 lb/hr steam, (24-hour average) is generated in the cogeneration boilers, steam in excess of 570,000 lb/hr (24-hour average) must be sent to the Osceola sugar mill, and the existing boiler's steam production reduced by an equivalent amount. This period shall not exceed a total duration of 12 months. During this 12 month period, simultaneous operation of the existing boilers and the cogeneration boilers shall not occur on more than a total of 120 calendar days. After the first year of cogeneration facility operation, the existing boilers may be operated only when both new cogeneration boilers are shutdown. During operation, the existing boilers must meet all requirements in the most recent construction and operation permits for the boilers. These existing boilers shall be shutdown and rendered incapable of operation within three (3) years of commercial startup of the cogeneration facility, but no later than January 1, 1999.

/OSCE1

VERSION WITH UNDERLINING AND ~~STRIKE THROUGH~~

SPECIFIC CONDITIONS FOR OSCEOLA PERMIT:

17. During the first three years of commercial cogeneration facility operation, the existing Boilers Nos. 2, 3, 4, 5, and 6 (Permit Nos. AC 50-203679, 165813, 203680, 165626, and 165814, respectively), may be retained for standby operation provided their operating permits are valid.

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/OSCE1B

"CLEAN" VERSION

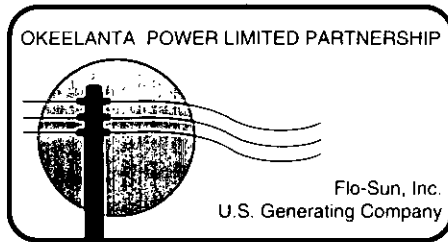
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/OSCE2

April 17, 1996



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APR 18 1996

BUREAU OF  
AIR REGULATION

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

Re: Okeelanta Power Limited Partnership Cogeneration Facility

Dear Mr. Fancy:

Okeelanta Power Limited Partnership was permitted to construct a 74.9 megawatt cogeneration facility in 1993 under air construction permit AC50-219413; PSD-FL-196. Construction of the facility began in 1994, and the facility began start-up testing in 1995. Okeelanta Power requests an amendment to the construction permit, as described below.

Requirements in Construction Permit

Specific Conditions 17 and 18 of the PSD permit address simultaneous operation of the cogeneration facility boilers and the existing Okeelanta sugar mill boilers. These conditions allow the existing sugar mill boilers (Boiler Nos. 4, 5, 6, 10, 11, 12, 14, and 15) to be retained for standby operation during the first three years of commercial operation of the cogeneration facility. During this three year period, the following conditions apply:

1. Simultaneous Operation of Cogen and Sugar Mill Boilers

- A. This period is limited to the time from initial firing to commercial operation of the cogeneration boilers, but shall not exceed a total duration of 12 months.
- B. All three cogeneration boilers can be operated simultaneously with the existing mill boilers.
- C. Only biomass or No. 2 fuel oil can be fired in the cogeneration boilers during such periods.
- D. Simultaneous operation is limited to 90 calendar days.



## 2. Standby Operation of the Existing Sugar Mill Boilers

- A. After the first year of cogen facility operation the existing sugar mill boilers may only be operated when all three cogeneration boilers are shutdown.
- B. The existing mill boilers must be permanently shutdown within three years of commercial startup of the cogeneration facility, but no later than January 1, 1999.

In addition, Boiler No. 16 at Okeelanta sugar mill, which primarily serves the sugar refinery, can be retained as a standby boiler after the cogeneration facility begins operating. Boiler No. 16 may be operated simultaneously with the cogeneration facility boilers during initial startup, debugging and testing of the cogeneration facility, for a period not to exceed 12 months following initial firing of fuel in the cogen boilers. After the first year of cogen operation, Boiler No. 16 may only be operated when one or more of the cogen boilers are shutdown.

### Conditions During Initial Testing

The Okeelanta Power cogeneration facility first fired fuel oil for a few days in October 1995. Biomass was first fired in the boilers in November 1995. From this time through early February 1996, the cogen facility was isolated from the sugar mill while debugging and testing of the cogen facility was being conducted. Beginning in early February 1996 and continuing through March, connections were attempted between the cogen facility and the sugar mill. However, these connection attempts were not successful. The sugar mill ended its crop season on March 3, 1996, and no further connections can be attempted until the next crop season, which is scheduled to begin on approximately October 16, 1996.

Due to the technical problems in the startup of the cogen facility, and the unsuccessful attempts at connecting to the sugar mill during the 1995-1996 crop season, Okeelanta Power needs an extension in the length of time allowed in the construction permit for simultaneous operation of the cogen boilers and existing sugar mill boilers.

During the 1995-1996 crop season, technical problems in the cogeneration plant, unrelated to connections with the sugar mill, hindered the performance of the cogeneration plant. Because of these problems, there was not enough time for connections with the sugar mill to be debugged. The design of the cogeneration plant was based on experience at other facilities using coal and wood chip fuel. The impact and difficulty of using many fuel combinations in the cogeneration facility (i.e., wood chips, clean wood from C&D debris, bagasse, etc.) were underestimated. Okeelanta Power currently is trying to determine whether improvements or changes are needed in certain plant components. The use of bagasse fuel also has presented unanticipated problems with the fuel feed system and boilers.

The bagasse conveying and feeder system, and boiler performance when burning bagasse, can only be debugged during the crop season when bagasse is available and the mill is consuming steam under actual operating conditions.

#### Request for Extension of Time

Okeelanta Power has a significant incentive to successfully connect to the sugar mill in the shortest possible time. Operation of the existing sugar mill boilers, with associated manpower and operating costs, results in a significant economic penalty to the sugar mill. Continued technical difficulties in connecting with the sugar mill also results in economic penalties to the cogeneration facility. Therefore, Okeelanta Power will make every effort to limit the time needed for simultaneous operation of the cogen and sugar mill boilers.

However, Okeelanta Power cannot predict how quickly all of these technical problems can be resolved. It is estimated that, during the next crop season, 25 to 30 connection trials may be needed to test and increase the reliability of the complete cogen-sugar mill system that will replace the existing sugar mill boiler operation. Okeelanta Power hopes to start and conclude these tests as expeditiously as possible, but cannot predict when those tests will be conducted during the Okeelanta crop season or how long they will take.

In light of the problems experienced this crop year, and to maintain flexibility for testing next crop year, Okeelanta Power is requesting that the time for simultaneous operation of Boiler Nos. 4, 5, 6, 10, 11, 12, 14 and 15 be extended through the next crop season (October 16, 1996 through April 1, 1997). During simultaneous operation, Okeelanta Power will continue to fire only biomass or No. 2 fuel oil. The Okeelanta Power facility will continue to comply with all other provisions of the current construction permit. The sugar mill will comply with all of the applicable permit limits for its boilers.

In the case of Boiler No. 16, the sugar refinery is expected to operate through September of this year, and then shutdown until the crop season starts again. In order to allow sufficient time to completely debug and test the cogen and refinery connection, it is requested that the period of simultaneous operation of the cogen boilers and Boiler No. 16 also be extended to the end of the next crop season (i.e., through April 1, 1997).

#### Ambient and Other Impacts

The air quality impacts associated with simultaneous operation of the Okeelanta Power cogeneration facility boilers and the Okeelanta sugar mill boilers were addressed in the previous air construction permit application and permitting process. The impacts associated with simultaneous operation remain the same as previously presented. As previously noted, the simultaneous operation of the cogen facility and sugar mill will not cause or contribute to a violation of any ambient air quality standards or PSD increments. The current request only extends the period during which such impacts may occur.

Your prompt consideration of this request for a permit amendment is greatly appreciated. Enclosed is a check (no. 1409) in the amount of \$250.00 for the Department's processing fee for this permit amendment. Please call if you have any questions concerning this request.

Sincerely,



Dennis V. Space  
General Manager

cc: David Knowles - FDEP/Ft. Myers  
James Stormer - HRS/PBCo  
Ricardo Lima - OC  
Roger King - OC  
James Meriwether - OPLP  
Matt Capone - OC  
Bill Tarr - Flo-Sun, Inc.  
David Dee - Landers and Parsons  
Mark Carney - USGen

CC: SED  
EPA  
NPS  
D. Buff, KBN  
Teresa Heron, BAR

**OKEELANTA POWER LTD. PARTNERSHIP**

6 MILES SOUTH OF SOUTH BAY  
ON US HWY. 27  
SOUTH BAY, FL 33493

1409

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03668

PAY  
TO THE  
ORDER OF

April 9 19 96

Florida Department of Environmental Protection

\$ 250.00

Two hundred fifty and 00/100-----

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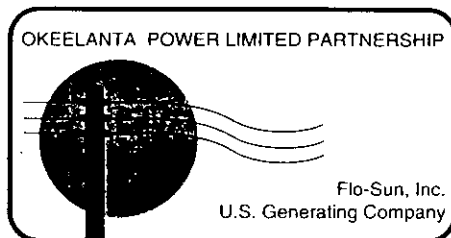


First Union National Bank  
of Florida  
Fl. Lauderdale, Florida  
24 Hour Information Service  
1-800-735-1012

FOR DEPOSIT # 094-0333

⑈001409⑈ ⑆067006432⑆ 2090000511374⑈

GUARANTEE SAFETY  
DECLARE AMERICAN BANK



March 15, 1996

HRS/Palm Beach County  
Public Health Unit  
Air Pollution Control Section  
901 Evernia Street  
P.O. Box 29  
West Palm Beach, Florida 33402-0029

Attn: Mr. Ajaya K. Satyal  
Environmental Manager

Re: Okeelanta Cogeneration Plant  
AC50-219413/PSD-FL-196

Dear Mr. Satyal:

The Okeelanta Power Limited Partnership (OPLP) would like to thank the Palm Beach County Public Health Unit (PBCPHU) for your timely response to our request for revision of our stack testing. Your letter of March 11, 1996 waived the 60 day requirement for testing Boiler C and granted approval to conduct stack tests at lower capacities (i.e., 70 to 80% of permitted heat input).

However, after further internal evaluation of this mode of operation (i.e., emission unit limited to 110 percent of test load), OPLP has determined this scenario to be unacceptable based upon the potential loss of revenues due to this operational restriction.

We are currently in the non-grinding season and therefore will be utilizing wood for fuel. In this mode of operation only two boilers are required to generate enough electricity for our projected goals and meet the steam needs of the adjacent sugar mill and or refinery. Should we experience operating difficulties with one of the two operating boilers, in the above limited mode of operation, we would be required to reduce steam flow and Net Electrical Output and thus be unable to meet our contractual commitments. To operate with any degree of reliability it is essential to reserve the flexibility of operating at maximum continuous rating (MCR) conditions for brief periods of time.

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As you are aware OPLP is still in the "start-up and testing phase" of operations. Test requirements which are based on contractual arrangements (i.e., operating efficiencies) between the contractor and owner must still be conducted. The availability test which measures overall system reliability is scheduled for the next seventeen days. These tests will be run at less than MCR conditions. At the end of this test the facility will be shut-down for modifications to the I.D. fans. This is scheduled for completion on April 28.

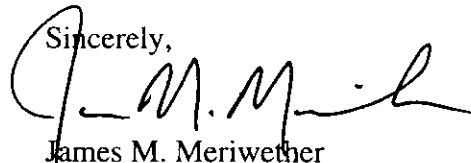
MAR 21 1996  
BUREAU OF  
AIR REGULATION

OPLP proposes to reschedule the stack tests and CEM system performance tests to a period immediately after completion of the I.D. fan modifications. This proposal would accomplish three major objectives, (1) meet the regulatory requirement of compliance testing within 10 percent of permitted heat input, (2) avoid the restriction of limited operation and associated financial impacts, and (3) avoid unnecessary expenditures of project funds by testing at limited load and retesting at MCR conditions.

The stack tests and CEM system performance tests would be scheduled to commence on or about May 6 and be completed by May 31. This schedule would necessitate waiving the 60 day testing requirement for Boilers A and B.

OPLP believes this is a reasonable approach based on limited operation of the boilers (17 days) between the previously proposed load-limited emission test and the proposed MCR testing in May. In light of the above, OPLP hereby submits this proposal for your review and consideration. If you have any questions please contact me at (407) 993-1003.

Sincerely,

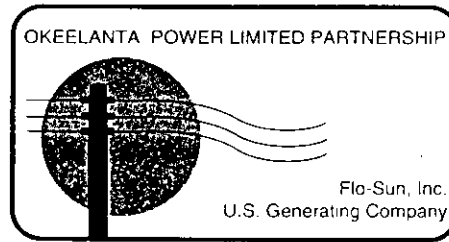


James M. Meriwether  
Environmental, Health  
and Safety Representative

cc: David Knowles - FDEP/Ft. Myers  
Al Linero - FDEP/TLH  
D. Space - OPLP  
C. Staley - USGen  
J. Ketterling - USOSC  
K. Burrows - BPC  
J. Snyder - BPC  
J. Prosser - BPC  
M. Golden-Griffin - USGen  
C. Allen - USGen

OPLP File No. 6.3.1.2

March 8, 1996



HRS/Palm Beach County  
Public Health Unit  
Air Pollution Control Section  
901 Evernia Street  
P.O. Box 29  
West Palm Beach, Florida 33402-0029

**RECEIVED**

**MAR 11 1996**

**BUREAU OF  
AIR REGULATION**

Attn: Ajaya K. Satyal  
Environmental Manager

Re: Okeelanta Cogeneration Plant  
AC50-219413/PSD-FL-196

Dear Mr. Satyal:

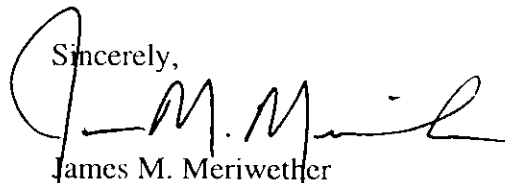
An inspection of the Boiler C induced draft (I.D.) fan was conducted following the maximum continuous rating (MCR) test. The inspection revealed severe wear and erosion of the blades and rotor assembly. This erosion was caused by fine sands and debris impacting the fan at MCR conditions. An I.D. fan inspection was immediately conducted on Boiler A and B which showed similar but less severe conditions due to minimal operating time on these units. Pending resolution of a long term repair, the Boiler manufacturer installed wear plates on the fan surfaces as an interim fix and recommended that Okeelanta Power Limited Partnership (OPLP) avoid operating these fans at high speed (MCR conditions).

This plant was designed to operate with the boilers at 70-80 percent MCR. The extra boiler capacity was built in for future expansion of the sugar mill's steam requirements. Thus the "normal" operation of the boilers since the interim repair (i.e., 70 to 80% MCR/low speed fan) has indicated acceptable wear conditions. OPLP has determined that erosion is accelerated at MCR conditions (i.e., high speed fan with resultant higher gas velocities) and we have and will avoid this operating condition.

Specific Condition #21 (a) of the PSD Permit states that compliance stack tests be conducted during normal operations (i.e., within 10 percent of the permitted heat input). In an effort to move the project forward OPLP prefers to conduct compliance stack tests during the month of March. Due to the above operating scenario OPLP requests approval to conduct compliance stack test at our normal operating conditions (i.e., 70 to 80 percent of permitted heat input). This will insure minimal erosion of the I.D. fans and at the same time continue our efforts to meet the conditions of our PSD permit.

OPLP would appreciate your timely review and response to this request in order to commence stack testing at the earliest date. The test schedule presented in my March 5, 1996 letter has been postponed pending resolution of this matter.

Sincerely,



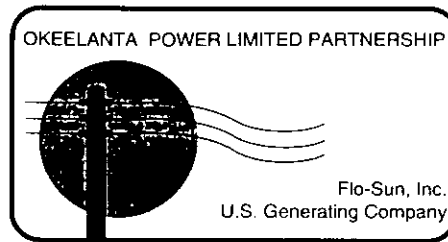
James M. Meriwether  
Environmental, Health  
and Safety Representative

cc: David Knowles - FDEP/Ft. Myers  
Al Linero - FDEP/TLH )  
D. Space - OPLP  
C. Staley - USGen  
J. Ketterling - USOSC  
K. Burrows - BPC  
J. Snyder - BPC  
J. Prosser - BPC  
M. Golden-Griffin - USGen  
C. Allen - USGen

OPLP File No. 6.3.1.2



March 5, 1996



Mr. Ajaya K. Satyal  
HRS/Palm Beach County  
Public Health Unit  
Air Pollution Control Section  
901 Evernia Street  
West Palm Beach, Florida 33402-0029

Mr. David M. Knowles  
State of Florida  
Dept. of Environmental Protection  
South District  
2295 Victoria Avenue  
Fort Myers, Florida 33901

Re: Okeelanta Cogeneration Facility  
Emission Test Schedule

Dear Messrs. Satyal and Knowles:

Okeelanta Power Limited Partnership (OPLP) has previously provided notice of emission tests in accordance with both the PSD permit and Florida regulatory requirements. Due to factors beyond our control, the start up of this facility has been significantly delayed, thus delaying emission testing.

Completion of emission tests is required within 60 days of achieving full load. Boiler C reached full load on January 7, 1996, and would be required to complete emission testing by March 7, 1996. Boilers A and B must be completed later in March. Balancing these two compliance requirements (notification vs. 60 days), OPLP proposes to initiate testing on March 11, 1996. Testing will be conducted for approximately five (5) days on each boiler; thus continuing for several weeks beyond the start date.

OPLP hereby requests that the requirement to test Boiler C within 60 days be waived with the understanding that OPLP will initiate testing as soon as possible.

OPLP also provides notice herein of the CEM system performance test which has been scheduled to occur on March 18, 1996. Please contact me as soon as possible if you have any comments on the above proposal.

Sincerely,

A handwritten signature in black ink, appearing to read "J. M. Meriwether".

James M. Meriwether  
Environmental, Health  
and Safety Representative

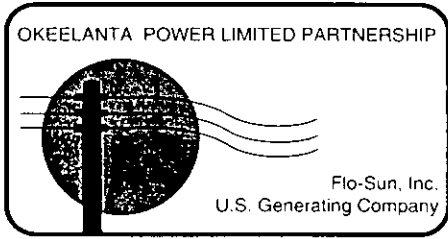
cc: ~~A. Linero~~ - FDEP/TLH  
M. Harley - FDEP/TLH  
W. A. Smith - EPA/Region IV  
D. Space - OPLP  
C. Staley - USGen  
J. Ketterling - USOSC  
K. Burrows - BPC  
J. Snyder - BPC  
J. Prosser - BPC  
M. Golden-Griffin - USGen  
C. Allen - USGen

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AUG 23 1995

August 17, 1995

Bureau of  
Air Regulation

Air Pesticides and Toxic Substance Management Division  
Environmental Protection Agency  
Region IV  
345 Courtland Street, N.E.  
Atlanta, Georgia 30365

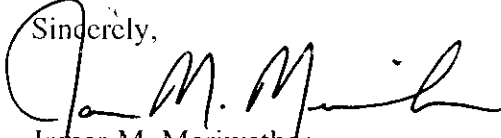
Attn: Mr. Winston A. Smith, Director

Re: Okeelanta Power Limited Partnership  
Palm Beach County  
South Bay, Florida  
Initial Firing of Auxiliary Boilers  
PSD-FL-196

Dear Mr. Smith:

Okeelanta Power Limited Partnership (OPLP) hereby provides notification that Boiler "B" at this facility is anticipated to fire biomass for the first time on or after September 16, 1995. Boiler "A" is anticipated to fire on or after September 17, 1995 and Boiler "C" is anticipated to fire on September 18, 1995. This notification fulfills the requirements of 40 CFR 60.7 (a) (2), notification of the anticipated date of initial startup not more than 60 days and not less than 30 days prior to that date.

Please call me at (407) 993-1003 if you have any questions.

Sincerely,  
  
James M. Meriwether  
Environmental, Health  
and Safety Representative

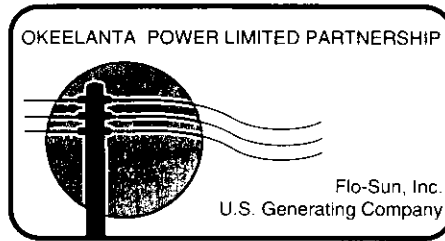
cc: Clair Fancy, FDEP/TLH  
David M. Knowles, FDEP/Ft. Myers

SED NPS  
W. Hanks EPA

bcc: C. Staley  
K. Mazur  
M. Griffin  
J. Ketterling  
H. Sturm

OPLP File No. 6.2.1

July 14, 1995



RECEIVED  
JUL 25 1995  
Bureau of  
Air Regulation

State of Florida  
Department of Environmental Protection  
New Source Review Section  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Attn: Mr. A. A. Linero, P.E.  
Administrator - New Source Review Section

Re: Okeelanta Power Limited Partnership (OPLP)  
Palm Beach County  
South Bay, Florida  
Wood-Waste and Ash Inspection and Testing Plan  
Permit #AC50-219413  
PSD-FL-196

Dear Mr. Linero:

The Okeelanta Power Limited Partnership (OPLP) submitted a revised copy of the Wood-Waste and Ash Inspection and Testing Plan (June 1995) to the Department on June 20, 1995. The revised plan addressed comments referenced in the Department's letter of April 13, 1995.

OPLP would like to amend Section 4.1 of the Plan to include the option of "Sampling and testing of bio-mass fuels at the originating fuel yards as well as at the cogeneration site". OPLP is confident this option will further enhance our quality assurance efforts relative to fuel deliveries at the facility. Section 4.1, as so amended, also satisfies the similar language in Specific Condition #12 of the above referenced permit.

OPLP will incorporate this additional testing capability into our fuel management program as I trust this amendment will be acceptable to the Department. Should you have any questions please contact me at (407) 993-1003.

Sincerely,

A handwritten signature in black ink, appearing to read "James M. Meriwether".

James M. Meriwether  
Environmental, Health  
and Safety Representative

cc: Willard Hanks, FDEP - New Source Review  
Mike Harley, FDEP - Bureau of Air Monitoring and Emission Testing

bc: C. Staley  
K. Mazur  
A. Sandelli  
J. Ketterling  
C. Allen  
M. Griffin  
M. Begeman  
L. Denney

OPLP File No. 6.11.2

at.  
FYI -  
plz return to  
me for hardcopies

Did not  
copy

KT

EPA - NPS

**Okeelanta Power  
Limited Partnership**

June 20, 1995

State of Florida  
Department of Environmental Protection  
New Source Review Section  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Attn: Mr. A. A. Linero, P.E.  
Administrator - New Source Review Section

Re: Okeelanta Power Limited Partnership (OPLP)  
Palm Beach County  
South Bay, Florida  
Permit #AC50-219413  
PSD-FL-196

RECEIVED

JUN 29 1995

Bureau of  
Air Regulation

Dear Mr. Linero:

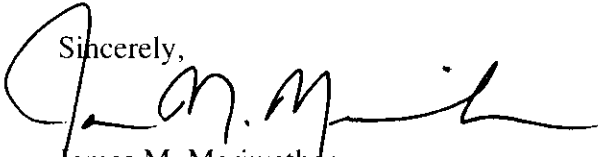
Please find attached a revised copy of the Okeelanta Power Limited Partnership (OPLP) Wood-Waste and Ash Inspection and Testing Plan for your review and approval. OPLP has revised the plan to address comments referenced in the Department's letter of April 13, 1995.

In summary the revisions to the plan are as follows:

- \* Section 2.0 to read "...permitted for future coal firing to a maximum of 25% of rated heat input"
- \* Section 4.1 removes specific reference to percentages of allowable amounts of prohibited materials. The revised section states that "delivered wood-waste must be substantially free of plastics, rubber, glass and contain only incidental amounts of chemically treated wood...".
- \* Section 4.3 addresses FDEP's request that fly ash, bottom ash, and a mixed product of fly and bottom ash be analyzed.
- \* Section 4.4 was added to address FDEP's comment that wood-waste metals content be correlated with those of the ash products and that the distribution of the metals in the ash products be determined. FDEP noted that this information could be used to support a relaxation of the permitted testing requirements in the future.
- \* Section 5.0 specifically notes the quarterly reports will contain all analysis results which indicate exceedances of the allowable concentration of metals, the types and

extent of re-sampling and/or blending, and the ultimate disposal of off-specification material.

I trust these revisions meet with your approval and should you have additional questions please contact me at (407) 993-1003.

Sincerely,  
  
James M. Meriwether  
Environmental, Health  
and Safety Representative

attach: Wood-Waste and Ash Inspection and Testing Plan

cc: Willard Hanks, FDEP - New Source Review  
Mike Harley, FDEP - Bureau of Air Monitoring and Emissions Testing

bcc: C. Staley  
C. Allen  
M. Griffin  
K. Mazur  
J. Ketterling  
M. Begeman

OPLP File 6.11.2



**Wood-Waste and Ash  
Inspection and Testing Plan**

RECEIVED

JUN 29 1995

Bureau of  
Air Regulation

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**Okeelanta Generating Plant**

---

**June 1995**

**Prepared by  
Okeelanta Power L. P.**

**Okeelanta Generating Plant  
6 Miles South of South Bay on U.S. Highway 27  
South Bay, Florida 33493**

**Submitted to  
Florida Department of Environmental Protection  
Bureau of Air Regulation**

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Bechtel Drawing 22433-M-031-0140-02; "Fuel Handling System Flow Diagram"

Bechtel Drawings 22433-M73-JN-001 and 22433-M73-JM-001; "Fly Ash and Bottom Ash Handling System Flow Diagrams"

## 1.0 INTRODUCTION

The Okeelanta Power, L.P. (OPLP) is constructing a bagasse/wood-waste fired cogeneration plant, known as the Okeelanta Generating Plant (OGP), adjacent to the site of the Okeelanta Sugar Mill. The OGP is located approximately six miles south of the town of South Bay in Palm Beach County, Florida

As a provision of the OGP's Florida Department of Environmental Protection (FDEP) Air Permit (AC50-219413, PSD-FL-196), 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. In addition, the FDEP Air Permit also requires the sampling and analysis of ash from the biomass burned in order to determine the concentration of copper, chromium, and arsenic present. This Wood-Waste and Ash Inspection and Testing Plan describes the implementation of these procedures during operation of the OGP to ensure compliance with the sampling and analysis provisions outlined in the air permit.

The Plan includes a brief description of the OGP and its operations related to wood-waste and ash handling 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 OGP, as well as procedures for ash sampling and analysis are described in Section 4.0. The OGP procedures for recordkeeping of inspections, sampling, and analysis results are provided in Section 5.0. Drawings for the fuel and ash handling systems, showing inspection (wood-waste only) and sampling locations are provided in the appendix.

## 2.0 FACILITY INFORMATION

The Okeelanta Generating Plant (OGP) is a new 74.9 MW (gross) bagasse and wood-waste fired cogeneration plant located in South Bay, Florida, adjacent to the existing Okeelanta Sugar Mill. The plant is designed to supply high and low pressure steam to the Okeelanta Sugar Mill during the grinding season (mid-October to April) while burning bagasse as the primary fuel. During the non-grinding season the OGP is designed to provide low pressure steam while using processed wood-waste as the primary fuel. 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 turbine generator and will be used to meet in-house loads and for sale to Florida Power & Light.

The major components of the plant include:

- three 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 25% of rated heat input)
- three electrostatic precipitators (one/boiler) with integral stacks
- an extraction-condensing turbine generator
- material storage and handling systems (e.g., wood-waste, bagasse, ash)
- ancillary plant equipment.

### 3.0 PROCESS DESCRIPTIONS

The following sub-sections describe the OGP wood-waste and ash handling systems from a "process flow" standpoint. Although the OGP also includes a bagasse handling system which operates during the sugar cane grinding season, only the wood-waste and ash are subject to the sampling and analysis requirements of the OGP air permit. Therefore, only these systems are 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 #22433-M-031-0140-02) contained in the appendix.

Wood-waste will be delivered to the OGP by 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 OGP utilizing two hydraulically operated truck dumpers. A third unloading area will also be provided to accommodate any self-unloading trucks that may be available for fuel transportation.

While unloading from the trucks, the wood-waste will be discharged into receiving hoppers equipped with live bottom chain conveyors which will transfer the wood material to the 48" Unloading Conveyor. The Unloading Conveyor, which is equipped with a belt scale and magnetic separator, will convey the wood-waste to the Screen and Hog Tower at a design rate of up to 300 tons per hour (tph).

The Screen and 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 Screen and 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 175 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.

## 3.2 Ash Handling Systems

The ash handling systems at the OGP comprises equipment from two distinct systems, (1) the handling of bottom ash from the boilers, and (2) the handling of fly ash collected in the electrostatic precipitators (ESP), the dust collector hoppers and the air heater hoppers. Therefore, the following two sub-sections provide separate discussions of both the equipment related to bottom ash handling and the equipment for fly ash handling. A process flow diagram of these ash handling systems is also provided in the appendix to this plan (Bechtel Drawings #22433 M73-JN-001 and #22433 M73-JM-001).

### 3.2.1 Bottom Ash Handling

Bottom ash will be continuously discharged from the boilers into three water-submerged drag chain conveyors. Each conveyor will consist of a wet compartment and a dry lower compartment. The upper compartment will be a water-tight steel trough designed to contain the water required for quenching and cooling the bottom ash to 140° F. The trough will be sized to accommodate up to two hours of bottom ash generated from the combustion of wood-waste (or bagasse).

The dewatered ash from the dewatering inclined ramp of the chain conveyor will be discharged into an 8 tph transfer conveyor from each individual boiler which will then transfer the dewatered ash into a 25-tph collecting conveyor. The collecting conveyor will unload the ash into a three-sided bunker, sized to a capacity of approximately 1-day of normal ash generation. Mobile equipment will be used to reclaim and load the stored ash into trucks for disposal off site.

### 3.2.2 Fly Ash Handling

Fly ash at the OGP will include ash collected in the air heater hoppers, dust collector hoppers and from the ESP hoppers. The fly ash handling system will encompass the removal and transport of the fly ash from the hoppers to a storage silo using a dry chain conveyor and bucket elevator conveyor system.

The fly ash collected from the air heaters and ESPs will discharge via enclosed chutes to the collecting fly ash chain conveyor. The collecting conveyor transfers the ash to the bucket elevator conveyor, which in turn carries the ash up to the flight chain conveyor. The flight conveyor discharges the fly ash into the top of the ash storage silo. The conveying capacity of this system will be sufficient to remove 24-hours of ash generation in 6 to 8 hours of operation.

The ash storage silo will be sized to accommodate 1,500 tons (approximately 7 days of ash generation) of fly ash. The silo will be a conical-bottom cylinder-type carbon steel structure. Two

twin shaft pug-mill conditioner unloaders, rated at 200 tph each, will discharge the ash into trucks for disposal.

## 4.0 INSPECTION, SAMPLING, AND ANALYSIS PROCEDURES

As stated in Section 1.0, the FDEP Air Permit for the OGP requires that inspection, sampling, and analysis of the wood-waste burned, and sampling and analysis of the ash generated at the plant, be performed to demonstrate that contaminants, principally copper, chromium, arsenic, in the biomass burned in the boilers are minimized.

The specific inspection and sampling procedures to be utilized at each stage of the wood-waste and ash handling systems are provided in the following sub-sections.

### 4.1 Wood-Waste Supply Sites

As stipulated in the OGP 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 OGP 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 OGP 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 OGP.

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 OGP site.

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



## 4.2 OGP 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 OGP. Thereafter, upon approval of FDEP, sampling and analysis may be reduced to a monthly basis.

Upon delivery of the wood-waste to the OGP, 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 OGP 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 OGP 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 at 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 analyses. 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 lab test results, if necessary.

Laboratory results on the samples will typically be available to the OGP Fuels Manager 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.

### 4.3 Bottom Ash/Fly Ash

In accordance with the FDEP Air Permit, analysis of the ash generated at the OGP will be conducted on a monthly basis for the first year of operation. Results from the analyses will be used to confirm that the air permit-specified limits on the concentration of copper, chromium, and arsenic in the biomass combusted at the OGP are being met. Three ash products will be analyzed:

1. Fly ash collected from the air heater, dust collectors, and ESP hoppers,
2. Bottom ash from the three boilers,
3. A mixed product of fly ash and bottom ash.

Grab samples of the bottom ash will be obtained weekly by the Chemical Technician as material is loaded from the storage bunker to trucks for offsite disposal. Fly ash grab samples will be obtained (also by the Chemical Technician) weekly from the transfer point between the collecting fly ash chain conveyor and the bucket elevator conveyor, as ash is loaded into the silo. The individual sample size for the bottom ash and fly ash grab samples will be approximately one pound each.

Prior to releasing the ash samples for outside lab analysis, a "combined ash sample" for the facility will also be produced by blending a portion of the individual weekly bottom and fly ash samples (approximately 8, 1 lb samples per month) into a homogeneous composite (fly and bottom ash) ash sample. A portion of the remaining individual fly ash, bottom ash, and combined ash samples will be retained on site as control samples for verification of lab test results, if necessary.

As stated in the air permit, the monthly ash samples will be analyzed for copper, chromium, and arsenic in accordance with appropriate analytical procedures per 40 CFR 261, Appendix III, described in SW-846, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*. Laboratory results on the sample will typically be available to the OGP Fuels Manager within 2-3 days after receipt of the sample at the lab.

Any results on the representative monthly composite ash sample which indicate the burning of wood-waste with concentrations of copper, chromium and/or arsenic above of the air permit limits will be investigated by the EH&S Representative. Re-testing of the control ash sample will be performed to verify the original lab test results. Comparison of the ash sample results with the corresponding fuel test results will also be performed to ensure that existing material segregation and sampling procedures for the wood-waste provide for an accurate representation of the composition of the wood-waste burned at the facility.

#### 4.4 Analysis Result Correlation

Results from the wood-waste, bottom ash, fly ash, and combined fly/bottom ash product sampling and analysis will be correlated so that a comparison of the analyzed metals content in the feedstock (wood-waste) with that of the ash products can be made. This information will be used to assess the adequacy of the wood-waste sampling procedures and for determining the distribution of the initial wood-waste metals content in the fly and bottom ash products. In addition, this information may be used to support a future request by OGP for FDEP to relax the sampling and analysis requirements of this plan.

## 5.0 RECORDKEEPING

As required by the OGP air permit, results from the weekly wood-waste and monthly ash analyses 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 exceedances 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 exceedance is indicated by the original analysis.
- The ultimate disposal of the off-specification material.

In addition, records on the various wood-waste inspections and wood-waste and ash sampling and analysis procedures outlined in this Plan will be maintained at the OGP 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 and ash 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 OGP personnel in investigating potential non-compliance events and verifying fuel and ash test results.

**APPENDIX**



# Department of Environmental Protection

Lawton Chiles  
Governor

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

Virginia B. Wetherell  
Secretary

April 13, 1995

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Ms. Michelle Griffin  
Environmental Specialist  
Okeelanta Power Limited Partnership  
7500 Old Georgetown Road  
Bethesda, MD 20814-6161

Dear Ms. Griffin:

Re: Okeelanta Generating Plant (OGP)  
Permit No. AC50-219413/PSD-FL-196

The Department has reviewed the Wood-Waste and Ash Inspection and Testing Plan for the referenced facility. We offer the following comments on this plan.

Specific Condition No. 12 of the construction permit gave a general description of the biomass fuel that could be burned at this facility. KBN Engineering and Applied Sciences, Inc.'s December 4, 1992, letter that provided the Department with additional information on this project said, "Asphalt shingles, tar paper, and plastic will not knowingly be accepted by Flo-Energy." (12118C4/RTC1-71). The specifications in Section 4.1 of the proposed plan says the wood-waste would be "composed of less than 2% by volume on weight of plastics, rubber, glass and painted wood." This could be interpreted as saying OGP could accept up to 24 tons per day of plastic or rubber as fuel. The Department would consider this quantity of prohibited material in the fuel to be a violation of the construction permit.

We also noted the statement on page 2-1 of the plan that the "boilers are also capable of future coal firing up to 40% of rated heat input." Please be advised that Specific Condition No. 15 of the construction permit restrict the heat input from coal to a maximum of 25%.

The sampling and analysis of the wood-waste fuel system appears adequate. The Department needs to be notified of any wood-waste results that exceed the allowable concentration of copper, chromium, or arsenic. The resampling/analysis, handling (blending), and ultimate disposal of the off specification material needs to be documented by the permittee.

Ms. Michell Griffin  
April 13, 1995  
Page Two

The Department requests that the sampling/analysis of the bottom and fly ash be expanded to include additional analysis of quarterly composite samples of bottom ash (separately) and fly ash (separately). We also ask that the permittee correlate the results of all analysis (wood-waste, bottom ash, fly ash and combined bottom/fly ash) to establish a partition factors for the metals and to support any request to relax the initial Wood-Waste and Ash Inspection and Testing Plan.

With the changes noted above, the Department approves the Okeelanta Generating Plant Wood-Waste and Ash Inspection and Testing Plan. If you have any questions on this matter, please write to me or call Willard Hanks at (904) 488-1344.

Sincerely,



A. A. Linero, P.E.  
Administrator  
New Source Review Section

CHF/wh/t

cc: David Knowles, SD  
Jeff Koerner, PBCHD  
David Buff, KBN

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:  
 Ms. Michelle Griffin  
 Environmental Specialist  
 Okelanta Power Ltd Ptrsp.  
 7500 Old Georgetown Rd  
 Bethesda, MD 20814-6161

4a. Article Number  
 Z 311 902 940

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

7. Date of Delivery  
 4/17/95

5. Signature (Addressee)

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

6. Signature (Agent)

PS Form 3811, December 1991 U.S. GPO: 1993-352-714

**DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

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**Receipt for Certified Mail**

No Insurance Coverage Provided  
 Do not use for International Mail  
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PS Form 3800, March 1993

Send to:	Michelle Griffin
Street and No.	Okelanta Power LP
City, State, and ZIP Code	Bethesda, MD
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	4-13-95
AC 50-219413	
PSD-F1-196	



April 6, 1995

**ENVIROPLAN**

Mr. Willard Hank  
Permitting Engineer  
Department of Environmental Protection  
Bureau of Air Regulation  
Mail Station 5505  
2600 Blair Stone Road  
Tallahassee Fla. 32399-2400

RECEIVED

APR 11 1995

Bureau of  
Air Regulation

Dear Mr. Hank:

This letter is to summarize our conversation regarding the Florida reporting requirements for the Okeelanta Power Limited Partnership Cogeneration Facility, Permit Number AC50-219413 PSD-FL-196. I will limit the discussion to Sulphur Dioxide, Nitrogen Oxides, and Carbon Monoxide since Enviroplan's Continuous Emission Monitoring (CEM) system will not be used to monitor the other pollutants listed in the permit. If there are any discrepancies between this description and the actual reporting requirements, please notify me when possible so they can be resolved.

The monitoring and reporting methodology will be based on 40 CFR 60 Subpart Da. This will establish the minimum requirements for data capture and the definition of a unit operation day. Compliance will be determined based on the exceedance limits in the operating permit, rather than the SO<sub>2</sub> and NO<sub>x</sub> limits stated in 40 CFR 60 Subpart Da, (60.43a and 60.44a).

We will use the Part 60 Da definition for operating day, 24 operating hours necessary for an operating day. An operating hour is defined as an hour with 30 minutes of unit operation.

To comply with the State Permit, the following exceedances will be reported:

Eight-hour rolling averages for CO emissions in lb/MBtu exceeding a calculated eight-hour rolling standard, (prorated based on the heat input from multiple fuels). See note 1.

Eight-hour rolling averages for CO emissions in lb/hr exceeding a calculated eight-hour rolling standard, (prorated based on the heat input from multiple fuels). See note 1.

Calendar day (block) averages for SO<sub>2</sub> emissions in lb/MBtu exceeding a calculated calendar day standard, (prorated based on the heat input from multiple fuels). See note 2.

Calendar day (block) averages for SO<sub>2</sub> emissions in lb/hr exceeding a calculated calendar day standard, (prorated based on the heat input from multiple fuels). See note 2.

30-day rolling averages for NO<sub>x</sub> emissions in lb/MBtu exceeding a calculated 30-day rolling standard, (prorated based on the heat input from multiple fuels). See note 3.

30-day rolling averages for NO<sub>x</sub> emissions in lb/hr exceeding a calculated 30-day rolling standard, (prorated based on the heat input from multiple fuels). See note 3.

30-day rolling averages for SO<sub>2</sub> emissions in lb/MBtu exceeding a fixed, (not prorated), standard.

As part of our regular Multi-day Average and Total Reports, we will supply reports for the following averages:

Calendar day block averages and 30-day rolling averages for SO<sub>2</sub> lb/MBtu, NO<sub>x</sub> lb/MBtu, NO<sub>x</sub> lb/hr, NO<sub>x</sub> Limit lb/MBtu and NO<sub>x</sub> Limit lb/hr.

Calendar day block averages for SO<sub>2</sub> lb/hr, SO<sub>2</sub> Limit lb/MBtu and SO<sub>2</sub> Limit lb/hr.

Calendar day totals and year-to-date cumulative totals for SO<sub>2</sub> tons and NO<sub>x</sub> tons.

Note 1) The eight -hour rolling prorated standard will be calculated as follows:

- a) On an hourly basis, the standards for the individual fuels are prorated for the two fuel heat inputs and stored in CO Limit lb/MBtu and CO Limit lb/hr period average files. See Equation 17e.
- b) On an hourly basis an eight-hour rolling average is calculated from the hourly averages of these two Limits and stored in eight-hour rolling CO Limit lb/MBtu and CO Limit lb/hr average files.
- c) On an hourly basis the eight-hour rolling CO lb/MBtu and CO lb/hr averages are compared with the eight-hour rolling averages of the CO Limit lb/MBtu and CO Limit lb/hr files, respectively.

Note 2) The Calendar day prorated standard will be calculated as follows:

- a) On an hourly basis, the standards for the individual fuels are prorated for the two fuel heat inputs and stored in SO<sub>2</sub> Limit lb/MBtu and SO<sub>2</sub> Limit lb/hr period average files. See Equation 17e.
- b) At midnight a daily block average is calculated from the hourly averages of these two Limits and stored in calendar day SO<sub>2</sub> Limit lb/MBtu and SO<sub>2</sub> Limit lb/hr average files.
- c) At midnight the calendar day SO<sub>2</sub> lb/MBtu and SO<sub>2</sub> lb/hr averages are compared with the calendar averages of the SO<sub>2</sub> Limit lb/MBtu and SO<sub>2</sub> Limit lb/hr files, respectively.

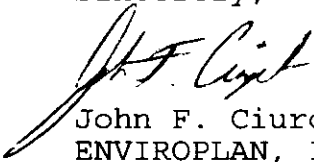
Note 3) The 30-day rolling prorated standard will be calculated as follows:

- a) On an hourly basis, the standards for the individual fuels are prorated for the two fuel heat inputs and stored in NO<sub>x</sub> Limit lb/MBtu and NO<sub>x</sub> Limit lb/hr period average files. See Equation 17e.
- b) At midnight a daily block average is calculated of the hourly averages of these two limits and stored in the calendar day NO<sub>x</sub> Limit lb/MBtu and NO<sub>x</sub> Limit lb/hr average files.
- c) At midnight a 30-day rolling average is calculated from the calendar day averages of these two limits and stored in the 30-day rolling average NO<sub>x</sub> Limit lb/MBtu and NO<sub>x</sub> Limit lb/hr average files.
- d) At midnight the 30-day rolling NO<sub>x</sub> lb/MBtu and NO<sub>x</sub> lb/hr averages are compared with the 30-day rolling averages of the NO<sub>x</sub> Limit lb/MBtu and NO<sub>x</sub> Limit lb/hr files, respectively

**Equation 17e**

$$E-LIM \text{ (EU)} = \frac{\sum_{k=1}^n \text{FUEL}_n \text{ HEAT (MBtu/hr)} \times \text{POLLUTANT FUEL}_n \text{ LIMIT (EU)}}{\sum_{k=1}^n \text{FUEL}_n \text{ HEAT (MBtu/hr)}}$$

Sincerely,



John F. Ciurczak  
ENVIROPLAN, Inc.

JFC/sbl

cc: Cliff Denker  
Alice Lee  
Ans van der Veen  
Victor Plante

cc Hanks

**Okeelanta Power  
Limited Partnership**

*Pally-file*

*Willard,*

*Review - request*

*only if you need  
more info  
to satisfy*

**RECEIVED**

**JUN 27 1994**

**Bureau of  
Air. Regulation**

*requirement  
Shark*

*GM*

*6/27*

June 20, 1994

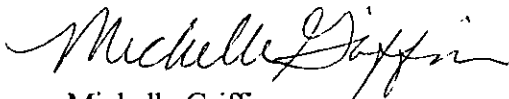
Mr. Preston Lewis  
Florida Department of  
Environmental Protection  
Twin Towers Office Building  
2700 Blair Stone Road  
Tallahassee, Florida 32399-2400

RE: Okeelanta Cogeneration Project  
Permit No. AC50-219413 PSD-FL-196

Dear Mr. Lewis :

As required by Specific Condition 7a, of the reference permit, Okeelanta Power Limited Partnership (OPLP) is pleased to submit the technical information for the electrostatic precipitator (ESP), the selective non-catalytic reduction process (SNCR), and the activated carbon injection mercury control system. Enclosed are tables for each control device describing the guaranteed efficiency and emission rates and major design parameters. Please call me at (301) 718-6973, if you have any questions.

Sincerely,



Michelle Griffin  
Environmental Compliance Specialist

enclosures

cc: Isidore Goldman, FDEP-WPB



## OKEELANTA COGENERATION PROJECT

<b>BOILER #</b>	<b>A, B, C</b>
<b>ELECTROSTATIC PRECIPITATORS (ESP)</b>	
<b>ESP EMISSION GUARANTEE – Model FTA-3x37.5M-96-120-A1-Spiral</b>	
1 . Particulate Matter Outlet, lb/MMBtu	0.03
2 . Particulate Matter Removal Efficiency	>99.0%
<b>ESP CONSTRUCTION</b>	
1 . Number of chambers/fields	1 / 3
2 . Height, ft (outside)	56' - 5 3/4"
3 . Width, ft (outside)	35' - 11.5"
4 . Depth, inlet to outlet, ft (outside)	65' - 9 3/16" including nozzles
5 . Effective cross-sectional area, ft <sup>2</sup>	1240.2

## OKEELANTA COGENERATION PROJECT

### SELECTIVE NONCATALYTIC REDUCTION(SNCR) – Vendor: ABB/CE PER BOILER

1 . NOx emission guarantee, lb/MMBtu	0.15
2 . Predicted NOx percent reduction, %	> =40%
3 . Expected Ammonia slip for performance fuel, ppm	20
4 . Number of injection nozzles	12
5 . Number of injection ports	3
6 . Sorbent type	Urea
7 . Urea storage tank capacity, gal (for 3 boilers)	30,000

## OKEELANTA COGENERATION PROJECT

<b>CARBON INJECTION SYSTEM</b>	
1 . Predicted Mercury removal, (%)	30%
2 . Expected Mercury emission, lb/MMBtu <sup>1</sup>	$6.3 \times 10^{-6}$
3 . Carbon storage capacity, tons	20
4 . Vent filter included for particulate emission	Yes
5 . Vent Filter particulate design emission, gr/acf	0.01

<sup>1</sup> for bagasse