

# OSCEOLA FARMS CO.

RAW SUGAR FACTORY  
INTERSECTION U. S. 98 & HATTON HWY.

TELEPHONE:  
(305) 924-7156

POST OFFICE BOX 679  
PAHOKEE, FLORIDA 33476

CABLE: SUGAR

October 28, 1981

*Bill*  
Florida Dept. of Env. Reg.  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Fl. 32301

Attn: Mr. C.H. Fancy, P.E. Deputy Chief  
Bureau of Air Quality Management

RE: Osceola Farms Co. - Boiler # 6  
Air Construction Permit Application  
AC50-43777, PSD-FL-080

Dear Mr. Fancy:

This is in reply to your September letter, received by us on September 25, 1981, enclosing a copy of the Preliminary Determination for both State and Federal permits regarding the referenced application.

After reviewing the proposed permit conditions, we find that we have problems with some of them and have discussed this matter by telephone with Mr. Bill Thomas on October 19 and 23, 1981. Mr. Thomas has sent us a copy of some revisions of these conditions which have been made after consultation with the other two sugar mill permit applicants, who have some of the same problems as ours.

Below we are listing the items in which we are requesting revisions and have incorporated in our comments the revisions which were sent to us by Mr. Thomas.

## Specific Conditions:

2. Our calculations for maximum allowable particulate emissions for 137 days operation show 44.3 lbs./hr. and 72.8 tons/yr., based on the BACT limitation of 0.15 lb./10<sup>6</sup> BTU heat input.

TO: Fla. Dept. of Env. Reg.  
Page Two

FROM: Osceola Farms Co.  
October 28, 1981

Based on our right to seek revision of this up to 0.20 lb./10<sup>6</sup> BTU, the allowable emission figures could be increased up to 59 lbs/hr. and 97 tons/yr. Visible emissions: 30% opacity except 40% no more than 2 minutes per hour.

5. The boiler shall not be operated more than 137 days during the 1981-82 grinding operation.

6. We feel that the 55% efficiency presently used in calculating heat input is a true representation of the actual efficiency of bagasse boilers and is more reliable than the calculations which are proposed.

7. Visible emissions from bagasse handling equipment: shall not exceed 10% opacity over any 6 minute period.

8. We can meter the oil consumption to boiler # 6 but find it impractical to determine the oil consumption to the other boilers other than as a group.

9. Total fuel oil consumption in boilers 1,2,3,4,5 and the proposed boiler shall not exceed 10,000 gallons per day, during normal operation.

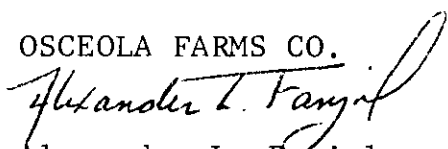
10. The scrubber shall be equipped with a manometer or equivalent instrument to measure the total pressure drop of the flue gas stream across the scrubber, with pressure gauges to measure the water pressure at the spray nozzles, with a flow meter or equivalent device (Weir) to measure the quantity of water circulating through the scrubber. The ph of the scrubber water at the scrubber inlet and outlet shall be measured. Data from these instruments shall be recorded each shift (every 8 hours) and available for regulatory agencies inspection for one year.

15. Boiler # 1 shall be put in a normal standby condition, while all of the other boilers are in operation. Boiler # 1 can be operated only when one of the other boilers is not operating.

I thank you and your staff for the help and cooperation extended us in the expediting of Boiler # 6 permit.

Very truly yours,

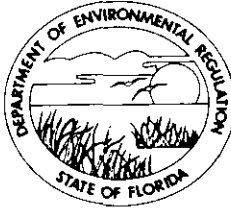
OSCEOLA FARMS CO.

  
Alexander L. Ranjul  
Vice President and  
Manager

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING  
2600 BLAIR STONE ROAD  
TALLAHASSEE, FLORIDA 32301



BOB GRAHAM  
GOVERNOR

VICTORIA J. TSCHINKEL  
SECRETARY

October 21, 1981

Alexander L. Fanjul  
Vice President  
Osceola Farm Company  
P. O. Box 679  
Pahokee, Florida 33476

Dear Mr. Fanjul:

Enclosed please find a revised copy of the specific conditions for Sugar Cane Growers cooperative of Florida. The specific conditions on the draft permit for your subject application will be revised based on the attached copy. If you have any further comments, please let us know as soon as possible.

Sincerely,

William Thomas, P.E.  
Bureau of Air Quality Management

cc: Frank S. Kleeman

WT:caa

# OSCEOLA FARMS CO.

RAW SUGAR FACTORY

INTERSECTION U. S. 98 & HATTON HWY.

September 14, 1981

TELEPHONE:  
(305) 924-7156

CABLE: SUGAR

POST OFFICE BOX 679  
PAHOKEE, FLORIDA 33476



~~B. H.~~  
Bob

Mr. C.H. Fancy, Deputy Chief  
Bureau of Air Quality Management  
Florida Department of Environmental Regulation  
Twin Towers Office Building  
Room 616  
2600 Blainstone Road  
Tallahassee, Florida 32301

RE: Osceola Farms Co. - Pahokee  
Bagasse Boiler # 6 - Construction Permit Application

Dear Mr. Fancy:

Confirming Mr. Frank Kleeman's phone conversation of September 14, 1981 with Mr. Bob King, we anticipate that the coming 1981/82 grinding season will encompass 137 days.

If I can be of any further assistance please do not hesitate to call me.

Very truly yours,

OSCEOLA FARMS CO.

Oscar F. Hernandez  
Assistant Manager

OFH/io

*Bill, Larry, Claude, Bob & B.K.  
Willard, Tim, permit file*

**OSCEOLA FARMS CO.**

316 ROYAL POINCIANA PLAZA  
PALM BEACH, FLORIDA 33480

TELEPHONE  
(305) 655-6303

CABLE: "SUGAR"  
TELEX: 803444

BY HAND

September 3, 1981

Mr. C. H. Fancy, Deputy Chief  
Bureau of Air Quality Management  
Florida Department of Environmental Regulation  
Twin Towers Office Building  
Room 616  
2600 Blairstone Road  
Tallahassee, Florida 32301

RE: Osceola Farms Co. - Pahokee  
Bagasse Boiler #6 - Construction Permit Application

Dear Mr. Fancy:

First, please accept our appreciation for the time and effort which you and your staff devoted to us Tuesday and for the many courtesies you extended.

Secondly, it seems appropriate for me to emphasize the urgency of Osceola's need to put into operation the proposed boiler #6 simultaneously with factory start-up on November 1. As explained yesterday, this boiler is an essential element in increasing the daily grinding rate of our sugar mill (by approximately 2,000 tons of cane per day) to a level needed to efficiently process our sugar cane production for the 1981/82 crop.

The addition of boiler #6 is necessary in achieving two important objectives: First, it will reduce unit operating costs and improve energy efficiency by increasing the use of bagasse for fuel and reducing the use of No. 6 diesel oil. The profitability and economic viability of the Osceola mill, which employs approximately 1,300 workers when in full operation, is dependent on an efficient manufacturing operation. If this unit cost savings and increased energy efficiency is not available for the crop which begins on November 1, economic viability of the mill will be seriously impacted.

Second, it will reduce the number of factory operating days (by 30 or more) to a level designed to minimize the potentially disastrous consequences of a freeze. Freeze damaged cane normally remains viable for processing for approximately 30 days following the freeze. In the absence of the additional daily processing capacity which will be provided by the proposed boiler #6, a late January freeze (the period of highest risk) could result in the loss of 200,000-250,000 tons of cane and the consequent lay-off by Osceola of 450 full-time employees

Mr. C. H. Fancy, Deputy Chief  
September 3, 1981  
Page Two

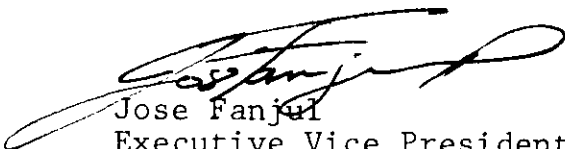
and approximately 900 seasonal employees. Such a loss in production could render Osceola's operation unprofitable and would also result in serious economic injury to Osceola's 20 independent sugar cane farmers who are dependent on revenues from the processing of sugar cane to meet payrolls and maintain the viability of their own farming operations.

It is difficult to estimate the full economic impact on our community of the potential freeze related loss of jobs, income to the Osceola mill and revenues to the independent farming operations, but the potential economic harm would certainly be reckoned in millions of dollars. The seriousness of this potential risk, in addition to unit cost savings and energy efficiency, is a primary reason that Osceola has undertaken the capital investment necessary to construct the proposed boiler #6.

My staff and I, as well as Mercer Fearington and his staff, will be available at any time to assist in the application process in any way you may think appropriate. We shall be most grateful for your efforts in issuing the necessary permits by November 1.

Very truly yours,

OSCEOLA FARMS CO.

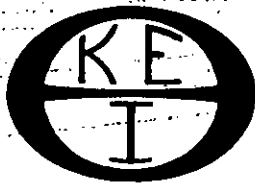
  
Jose Fanjul  
Executive Vice President

JF:jt

## OSCEOLA FARMS

- 9-1-81

Willard Hank	DER	488-1344
Frank Kleeman	Kleeman Eng	(305) 467-6708
Carlos M Alonso	Osceola	305 924 7156
Oscar F Hernandez	Osceola	305 924-7156
Jose FANJUL	OSCEOLA	305-655-6303
Mum Hearington	McAdams	224 2753
Larry George	DER	(904) 488-1344
Cleve H. Wesley	DER	(904) 488-1344
CLAIR FANCY	DER	904 488 1344
Bob KING	DER	904 488 1344
Bill Thomas	"	"



*Kleeman Engineering, Inc.*

404 North Andrews Avenue • Fort Lauderdale, Florida 33301

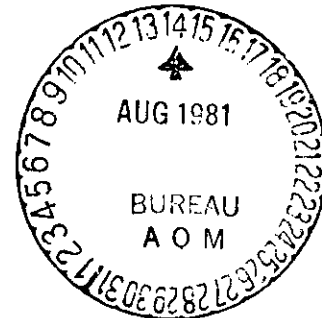
CHEMICAL & ENVIRONMENTAL ENGINEERS

305/467-6708 • 305/735-8614

August 10, 1981

Tim

Fla. Dept. of Environmental Regulation  
Twin Towers Office Building  
2600 BlairStone Road  
Tallahassee, Fla. 32301



Attention: Mr. C.H. Fancy, P.E., Deputy Chief  
Bureau of Air Quality Management

Re: Osceola Farms Co. - Bagasse Boiler #6  
DER Construction Permit Application

Dear Mr. Fancy:

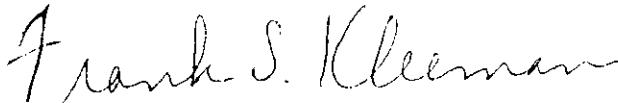
We are pleased to respond to your letter of 7-2-81 as follows:

1. SO<sub>2</sub> emissions: Revised calculation sheet is enclosed.
2. PM, NO<sub>x</sub>, HC and CO: Revised calculation sheets are enclosed.
3. Design clean water flow to scrubber: 200 gpm, max.  
103 gpm, min.  
Spray header pressure: 40 psi.  
Pressure drop across scrubber: 6" w.c.
4. Number of oil burners: 2  
Capacity: 615 gph each
5. Bagasse is fed to boiler by drag conveyor through a chute.  
Equipment suppliers advise that spongy nature of bagasse prevents measuring quantity supplied by the feeding process. Consequently, quantities burned are calculated from combustion data.
6. I.D. fan operating curve is enclosed.  
Fan speed: 900 rpm.  
Motor H.P.: 354  
Amp. of exhaust fan: N/A. Turbine curve is enclosed.  
Temp. of flue gas at scrubber I.D. fan: 170° F.



7. Fuel oil consumption: Tabulation table is enclosed.
8. Is plant expansion planned?: No.
9. Maximum emissions for all boilers: Table is enclosed.
10. Fugitive particulate emissions from storage pile  
    can be controlled, when necessary, by wetting down the pile. However, this is limited by the inability to burn wet bagasse.  
    Transfer points can be enclosed to extent feasible.
11. Scrubber efficiency and emission limits: Letter from manufacturer (Joy Mfg. Co.) is enclosed. This is the full extent of what they are willing to provide.
12. Stack configuration, etc.: Drawing is enclosed.
13. Dust collector control efficiency: There is no dust collector.
14. Use of the new boiler will not add to mill personnel, except 1 man per shift to operate it.  
    Visible emissions in area of the mill will be decreased, because of better combustion in boiler and reduction in useage of oil which will be accomplished.
15. Boiler #1 will be operable, but will not be operated unless one of the other boilers is out of service.
16. thru 19. These questions and requests for information and further studies have been addressed by Environmental Sciences & Eng., Inc. Their bound report and cover letter are enclosed.

Sincerely,



Frank S. Kleeman, P.E.

Osceola Environmental Consultant

cc: DER, Ft. Myers  
    P.B. County H. Dept.  
    Osceola Farms Co.

# ESE ENVIRONMENTAL SCIENCE AND ENGINEERING, INC.

July 27, 1981  
ESE No. 80-180-100

Frank S. Kleeman, P.E.  
Kleeman Engineering, Inc.  
404 North Andrews Avenue  
Ft. Lauderdale, Florida 33301

Dear Frank:

The enclosed table and computer printouts constitute a reply to Questions 16, 17, and 18 in Clair Fancy's July 2, 1981 letter to Alexander Fanjul. An explanation of the table and a reply to Question 19 follow.

## MODELING

Printouts #1 and #2 are 5-year CRSTER runs assuming stack emissions from combustion of 0.2 percent sulfur bagasse with total conversion of sulfur to SO<sub>2</sub>. Table 5A summarizes the results of these calculations assuming a 40 percent loss over stoichiometric emission calculations for bagasse combustion. Total conversion is still assumed for sulfur found in oil. Neither SO<sub>2</sub> Ambient Air Quality Standards (AAQS) nor PSD increments are predicted to be violated. Neither AAQS nor increments would be violated if as little as 8 percent loss in stoichiometric sulfur were assumed.

Table 7 of the PSD report shows that all surrounding sources with potentially significant contributions in the area of Osceola's impact are bagasse or bagasse residue combustion sources. The maximum contribution from all surrounding sources is 7 ug/m<sup>3</sup> (24-hour). Since SO<sub>2</sub> emissions while burning bagasse or residue are only 2 to 3 times particulate emissions, SO<sub>2</sub> contributions from surrounding sources will be no greater than 21 ug/m<sup>3</sup>. An addition of 21 ug/m<sup>3</sup> to concentrations in any interactive direction would not cause a violation of SO<sub>2</sub> AAQS.

Printout #4 shows the SO<sub>2</sub> impact of FPL Martin at 24.5 km in the direction of interaction with Osceola, 178°. This interaction does not occur in a direction influenced by any nearby sources, and the additional 19 ug/m<sup>3</sup> would not cause a violation of AAQS.

Table 5A also summarizes Printout #3, which demonstrates that TSP increments are not predicted to be exceeded.

The original PSD report contains model printouts which predict annual (arithmetic average) TSP impacts due to operation of the Osceola mill. By comparing Osceola's emission rates (Table 1), annual average NO<sub>x</sub> impacts are estimated to be 3 ug/m<sup>3</sup>. Even when a background of 20 ug/m<sup>3</sup> is assumed, the predicted concentration is less than 25 percent of the AAQS.

Mr. Frank Kleeman  
July 27, 1981  
Page 2

#### BACKGROUND

The stack parameters and operating strategy for the proposed new source were designed to meet TSP AAQS with an assumed constant background of  $40 \text{ ug/m}^3$ . In reality, background levels are not constant and are best described by a log-normal distribution;  $40 \text{ ug/m}^3$  is at the 72-percentile level, well above the mean of 1978-80 PB-16 data. Since PB-16 is bordered on two sides by cane fields, any effects of cane field burning on air quality are already included in the measured values and need not be separately accounted for.

In a reply to a similar question with regard to the SCGC permit application (July 6, 1981 letter to Clair Fancy), it was described how daily concentrations at a single point could be described mathematically and the distribution functions of background and plant impacts combined.

When data from PB-16, collected during 1978 through 1980, were combined with predicted plant impacts, it was determined that the violation return period at the point of highest, second-highest impact for the SCGC mill was 111 years. Similar results would be expected from an analysis with Osceola emissions. This demonstrates that the proposed plant design will adequately protect AAQS at the level of background concentrations existing over the last 3 years.

This letter and enclosures may be submitted to DER in response to their request for additional information.

If you or DER have any questions, please do not hesitate to call or direct them to me.

Sincerely,



Michael H. Dybevic  
Air Permitting and Meteorology

MHD/ljh

Enclosures

Table 5A. Ground Level Impacts of Osceola Sugar Mill Emissions (ug/m<sup>3</sup>)

	SO <sub>2</sub> *			TSP		NO <sub>x</sub> †
	24-hour**	3-hour**	Annual††	24-hour**	Annual††	Annual††
Total Plant Impact (Boilers 2-6)	165	390	10	109	6	3
Plus Background	<u>20</u>	<u>20</u>	<u>20</u>	<u>40</u>	<u>40</u>	<u>20</u>
Total Air Quality Impact	185	410	30	149	46	23
Increment Consumption (Boilers 5 and 6 with Boiler 1 Impacts Subtracted)	59	136	4	27	2	—

\* Based on 40 percent system loss for bagasse combustion over stoichiometric calculations from 0.2 percent total bagasse sulfur content.

† Estimated by scaling emission factors and impacts for SO<sub>2</sub>.

\*\* Highest, second-highest.

†† Arithmetic mean.

Source: ESE, 1981.

Section D Emissions Calculations

Particulate Emissions: Stack tests were conducted on Boiler #5 by So. FLA. ENVIRONMENTAL TESTING 12-31-79.

Particulate Emissions were determined as follows:

		Lbs/Hr	
		Steam	Oil
		Generated	Used
Run No. <u>1</u>	<u>47.4</u> lbs/hr		
Run No. <u>2</u>	<u>44.8</u> " "		
Run No. <u>3</u>	<u>39.2</u> " "		
Average	<u>43.8</u> lbs/hr	<u>125,000</u>	<u>160</u>

$$\frac{43.8}{1} \times \frac{150,000}{125,000} = 52.6 \text{ lbs/hr @ } 150,000 \text{ lbs/hr design cap.}$$

$$\frac{52.6 \times 24 \times 128}{2000} = 81.3 \text{ Tons/yr Particulates}$$

Sulfur Oxide Emissions: (based on 40% removal in scrubber)

$$\text{SO}_2 \text{ Emissions, in Lbs/ton Bagasse burned} = 24 \times \%S$$

$$\frac{80,000}{2000} \times 24 \times \underline{0.14} = 134 \text{ lbs/hr SO}_2 \text{ from Bagasse}$$

$$\text{SO}_2 \text{ Emissions, in Lbs/1000 gallons Residual Oil burned} = 94.2 \times \%S$$

$$\frac{384}{8.0 \text{ lbs/gal}} = \text{gal/hr Oil burned } 48.0$$

$$\frac{48.0}{1000} \times 94.2 \times \underline{1.0} \%S = 4.5 \text{ lbs/hr SO}_2 \text{ from Oil}$$

$$\text{Total SO}_2 \text{ Emissions} = \underline{134} + \underline{4.5} = 138.5 \text{ lbs/hr}$$

$$\frac{138.5 \times 24 \times 128}{2000} = 212.7 \text{ tons/yr total SO}_2 \text{ Emissions}$$

NO<sub>x</sub> Emissions:

$$\text{NO}_x \text{ Emissions, in Lbs/ton Bagasse burned} = 1.20$$

$$\frac{80,000}{2000} \times 1.20 = 48.0 \text{ lbs/hr NO}_x \text{ from Bagasse}$$

NO<sub>x</sub> Emissions, in Lbs/1000 gal Residual Oil burned = 22

$$\frac{384}{8.0 \text{ lbs/gal}} = 48.0 \text{ gal/hr Oil burned}$$

$$\frac{48.0}{1000} \times 22 = 1.0 \text{ lbs/hr NO}_x \text{ from Oil}$$

$$\text{Total NO}_x \text{ Emissions} = \underline{48.0} + \underline{1.0} = 49.0 \text{ lbs/hr}$$

$$\frac{49.0 \times 24 \times 128}{2000} = 75.3 \text{ tons/yr}$$

#### Section E Calculation of Scrubber Efficiency

Inlet Particulates loading to the scrubber was calculated utilizing emission tests performed on Boiler \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_.

Test No. \_\_\_\_\_ Date \_\_\_\_\_ lbs/hr

Test No. \_\_\_\_\_ Date \_\_\_\_\_ lbs/hr

Test No. \_\_\_\_\_ Date \_\_\_\_\_ lbs/hr

Average (at \_\_\_\_\_ lbs/hr Steam production) = \_\_\_\_\_ lbs/hr

Average Emissions from Boiler \_\_\_\_\_ Scrubber = \_\_\_\_\_ lbs/hr  
 @ \_\_\_\_\_ lbs/hr steam production

\_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ lbs/hr @ \_\_\_\_\_ lbs/hr steam prod.

Scrubber Efficiency = \_\_\_\_\_ X 100 = \_\_\_\_\_ %

## Section C Emissions Calculations (continued)

## Hydrocarbon Emissions:

From Bagasse = 2.0 lbs/ton

$$\frac{80,000}{2000} \times 2.0 = 80.0 \text{ lbs/hr. HC from Bagasse}$$

From Oil = 1.0 lb/1000 gal.

$$\frac{48.0}{1000} \times 1.0 = 0.04 \text{ lbs/hr. from Oil}$$

Total HC = 80.0 + 0.04 = 80.04 lbs/hr.

$$\frac{80.04 \times 24 \times 128}{2000} = 123 \text{ tons/yr. Hydrocarbons}$$

## CO Emissions:

From Bagasse = 2.0 lbs/ton

$$\frac{80,000}{2000} \times 2.0 = 80.0 \text{ lbs/hr. from Bagasse}$$

From Oil = 5.0 lbs/1000 gal.

$$\frac{48.0}{1000} \times 5.0 = 0.2 \text{ lbs/hr. from Oil}$$

$$\frac{24 \times 80.2 \times 128}{2000} = 123 \text{ Tons/yr. Carbon Monoxide}$$

80.0 + 0.2 = 80.2 LBS/HR TOTAL CO

Uncontrolled Emissions

## Particulates:

From Bagasse = 16 lbs/ton

$$\frac{80,000}{2000} \times 16 = 640 \text{ lbs/hr.}$$

From Oil = 13 lbs/1000 gal.

$$\frac{48.0}{1000} \times 13 = 0.6 \text{ lbs/hr.}$$

Total = 640 + 0.6 = 640.6 lbs/hr.

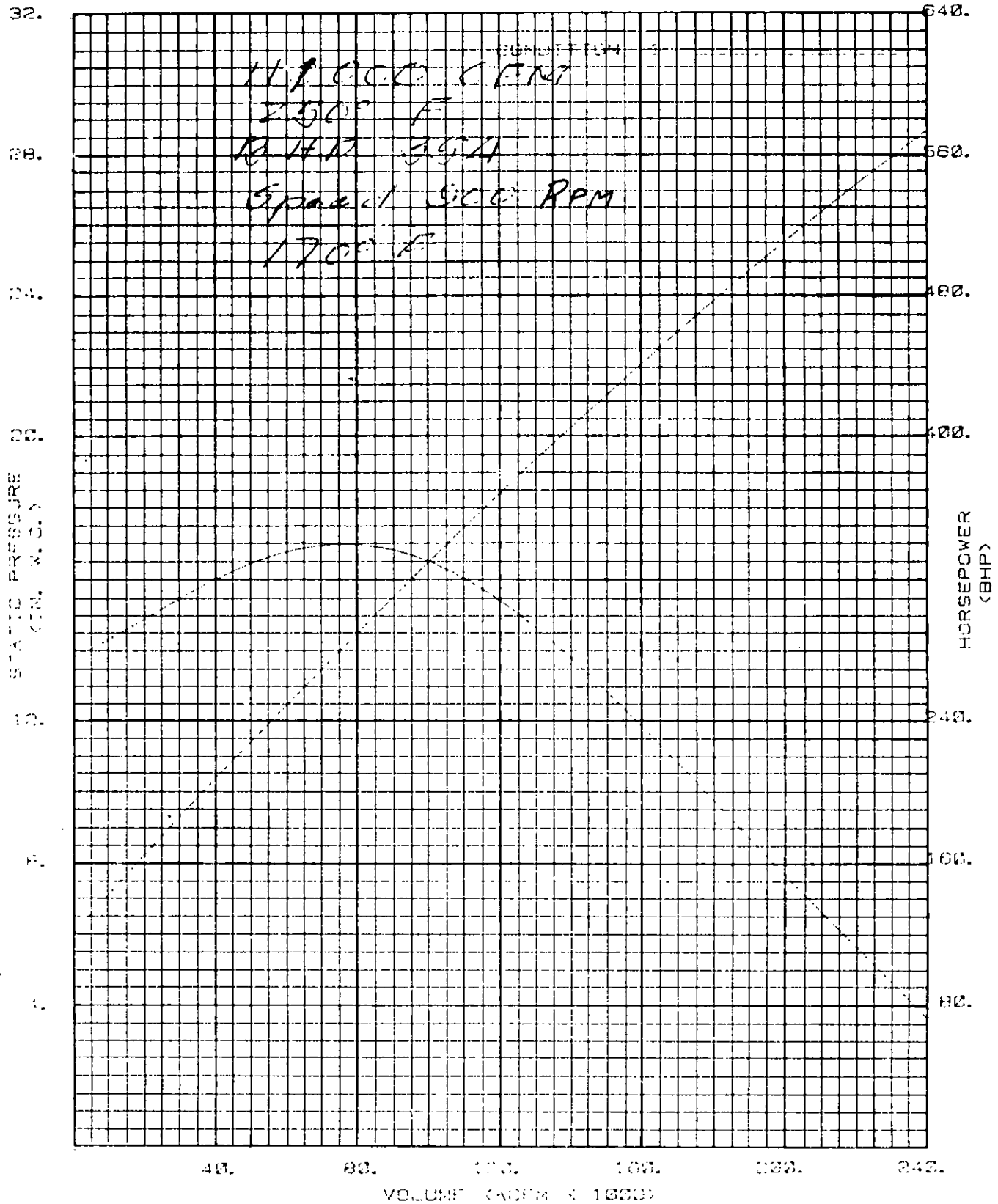
$$\frac{640.6 \times 24 \times 128}{2000} = 984 \text{ tons/yr. Particulates}$$

# BARRON INDUSTRIES

ENGINEERS & MANUFACTURERS

FAN SIZE 790 COND. 1  
 FAN SERIES T30A DEL. (LB/CU. FT.) .0383  
 FAN TYPE DI ( 92.00% ) DW RPM 900.

REF. IPS ENGINEERS, INC. OSCEOLA FARMS CO. DATE: 12-3-80

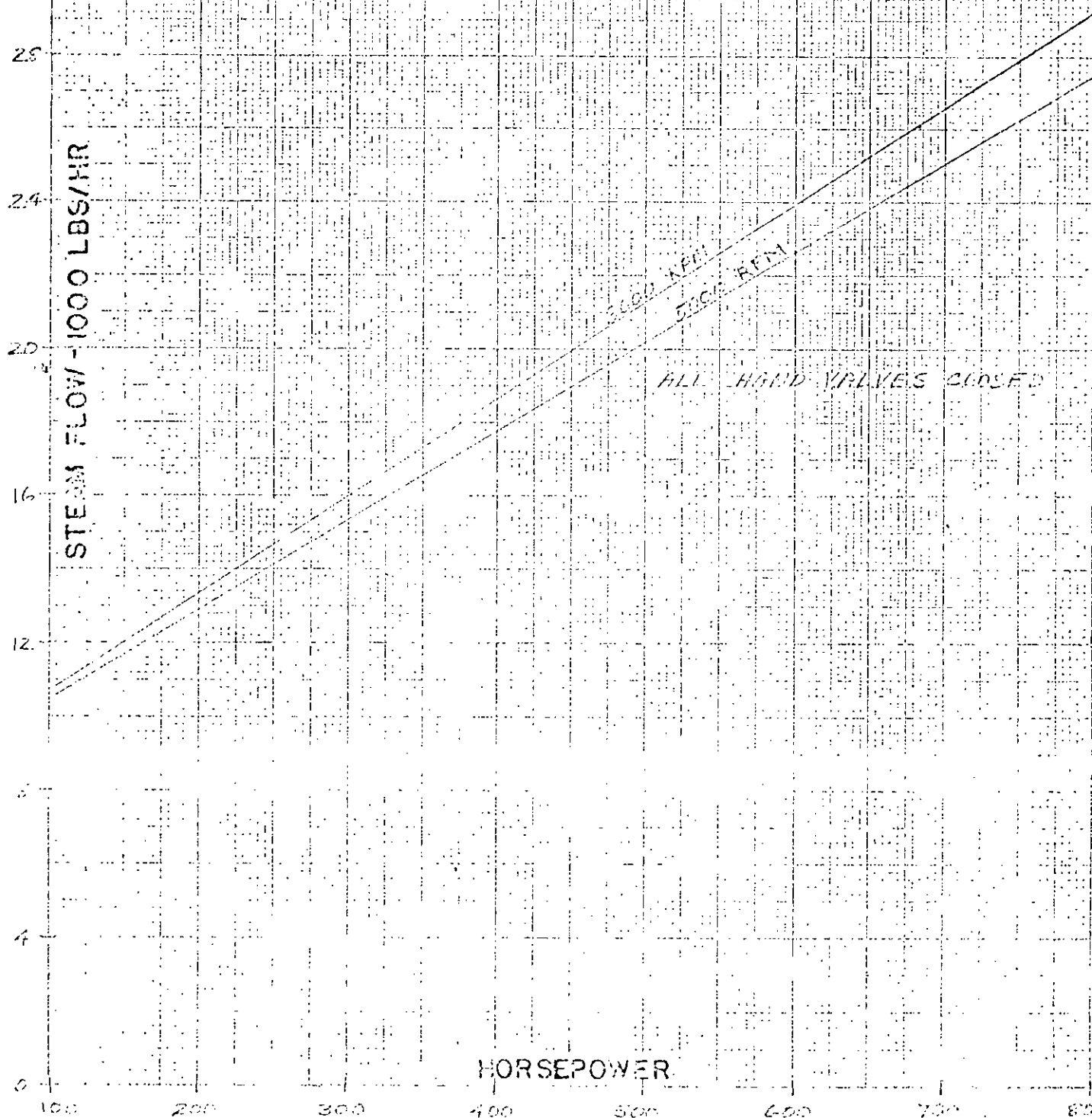




# PERFORMANCE CURVE

THE TRANE CO.  
PROCESS DIVISION  
MURRAY STEAM TURBINES  
BURLINGTON, IOWA

MURRAY TURBINE SERIAL NO. 4189 *old No 6 m.t./1*  
FRAME: 142U  
INLET PRESSURE: 250 PSIG  
INLET TEMPERATURE: 406 °F TT  
EXHAUST PRESSURE: 15 PSIG  
RPM: SEE CURVE



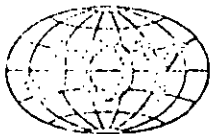
Osceola Farms Co.  
#6 Fuel Oil Consumption

	1979	1980
(JANUARY) Enero	277,953 Gals	138,939 Gals
Febrero	113,582 Gals	155,322 Gals
Marzo	149,650 Gals	136,975 Gals
Abril	132,423 Gals	_____
Mayo	_____	_____
Junio	_____	_____
Julio	_____	_____
Agosto	_____	_____
Septiembre	_____	_____
Octubre	113,201 Gals	93,237
Noviembre	143,905 Gals	242,186
Diciembre	115,290 Gals	238,949
TOTAL	1,046,004	1,005,608

7-13-1981  
Carlos E. Gundera

OSCEOLA FARMS CO.

<u>Boiler No.</u>	Maximum Emissions (lbs/hr.)					Maximum Heat Input (MM Btu/hr.)
	<u>P.M.</u>	<u>SO<sub>2</sub></u>	<u>NO<sub>x</sub></u>	<u>HC</u>	<u>CO</u>	
1	15.3	30.2	10.8	18.0	18.0	64.8
2	33.6	67.8	25.7	39.1	39.5	156.0
3	40.8	18.8	6.7	11.2	11.2	40.3
4	29.6	61.8	21.0	31.6	32.0	127.5
5	40.1	106.3	68.0	61.9	62.0	226.5
6	52.6	138.5	49.0	80.0	80.2	295.2



WESTERN PRECIPITATION DIVISION

JOY MANUFACTURING COMPANY

4565 COLORADO BOULEVARD

LOS ANGELES, CALIFORNIA 90039

Phone: (213) 240-2300

February 8, 1974

Florida Sugar Cane League, Inc.  
P.O. Box 1148  
Clewiston, Florida 33440

Attention: Mr. J. Nelson Fairbanks  
Vice President & General Manager

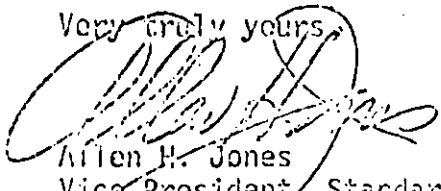
Gentlemen:

Confirming our conversations of January 30, 1974, we wish to present, herewith, the guarantees we are prepared to make to any member of the Sugar Cane League on the performance of our Type D "TURBULAIRE" Scrubber when used in conjunction with bagasse fired boilers.

With an inlet loading to the scrubber of 2 gr/dry standard CFM (DSCFM), we will guarantee a particulate outlet not to exceed .07 gr/DSCFM. If the condensables are to be included with particulate emission, we will then guarantee an outlet not to exceed .08 gr/DSCFM. These guarantees are based on operating the equipment at a pressure drop across the unit of not less than 5" water column (w.c.) and not more than 9" w.c. In addition, these guarantees are based on sampling with the EPA Train, Method 5, described in the Federal Register, Volume 36, No. 247, Thursday, December 23, 1971, copy enclosed.

The aforementioned guarantees are made on our equipment as originally designed or as modified with our approval. Any unauthorized modifications will abrogate these guarantees.

Very truly yours,

  
Allen H. Jones  
Vice President, Standard Products

AMJ:js

Encl. EPA Train, Method 5.

cc: F. Arroyo - Arroyo Process Equipment  
cc: L. Newton - Western Precipitation  
cc: R. Fernandez - Western Precipitation

DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices  
And/Or To Other Than The Addressee

To: _____	Locn.: _____
To: _____	Locn.: _____
To: _____	Locn.: _____
From: _____	Date: _____

TO: C. H. Fancy

THRU: Willard Hanks *link*

THRU: Philip R. Edwards *ans for*

FROM: Mirza Baig *MB*

DATE: July 6, 1981

SUBJECT: Osceola Farms Company - Boiler #6

A review of the construction permit application for the above referenced project has been made and following are our comments:

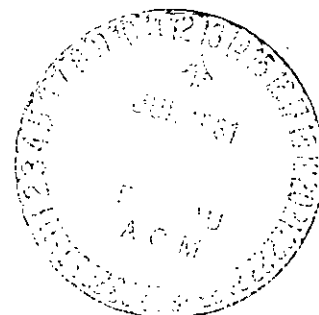
1. How is the bagasse being fed to this boiler measured?
2. What are the units of average and maximum amount of fuel oil #6 mentioned in item E section III?
3. The percent removal of SO<sub>2</sub> from scrubbing operation has not been addressed. This is important information to establish SO<sub>2</sub> sampling requirements. What is the estimated pH of the scrubber waste-water discharge?
4. The overall boiler efficiency is low. A boiler efficiency test should be performed when the new boiler is placed in operation.
5. An updated letter for this boiler #6 scrubber performance from Joy Mfg. Company is required to assure that emission standards will be met.

All other pertinent questions have been addressed by the Palm Beach County Program and/or the Tallahassee CAPS.

This is the second time that an incompleteness letter has been sent by CAPS to the applicant without consulting the Ft. Myers District office. I hope this is not habit-forming.

*Bad Bad Boy*

MPB/lis



ROUTING AND TRANSMITTAL SLIP		ACTION NO
		ACTION DUE DATE
1. TO: (NAME, OFFICE, LOCATION)	Initial	
Steve Smallwood	Date	
2. John Brown - Fgi	Initial	
	Date	
3. Willard - Fgi	Initial	
	Date	
4. (SS signed Prelim Det)	Initial	
	Date	
REMARKS:		INFORMATION
<p>FIT</p> <p>follow up on what happens</p> <p>Note: CAP has just issued an intent to allow an increase in steam production.</p>		Review & Return
		Review & File
		Initial & Forward
		DISPOSITION
		Review & Respond
		Prepare Response
		For My Signature
		For Your Signature
		Let's Discuss
		Set Up Meeting
		Investigate & Report
		Initial & Forward
		Distribute
		Concurrence
		For Processing
		Initial & Return
FROM:		DATE
Dan Thompson		PHONE

DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee	
To: _____	Locn.: _____
To: _____	Locn.: _____
To: _____	Locn.: _____
From: _____	Date: _____

TO: C. H. Fancy

THRU: Willard Hanks *W.H.*

THRU: Philip R. Edwards *PR Edwards*

FROM: Mirza Baig *MB*

DATE: July 6, 1981

SUBJECT: Osceola Farms Company - Boiler #6

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*MB insist that letter*  
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*Bad Baig Boy*

MPB/lis



STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING  
2600 BLAIR STONE ROAD  
TALLAHASSEE, FLORIDA 32301

(904) 488-1344



BOB GRAHAM  
GOVERNOR

VICTORIA J. TSCHINKEL  
SECRETARY

July 2, 1981

Alexander L. Fanjul  
Vice President  
Osceola Farms Company  
P. O. Box 679  
Pahokee, Florida 33476

Dear Mr. Fanjul:

RE: Bagasse Boiler No. 6 - State Construction Permit Application

The Department has received your application for a permit to construct a bagasse boiler in Palm Beach County, Florida. Based on the initial review of your proposal, it has been determined that additional information is needed before we can process the application. The information required to complete the application is listed below.

1. The SO<sub>2</sub> emission calculations in the application are questionable. Our calculations show 134 lbs SO<sub>2</sub>/hr from burning bagasse, not 80 lbs/hr. Total SO<sub>2</sub> emissions will be 141.6 lbs/hr or 217.5 tons/yr.
2. The maximum fuel oil consumption, 48 gal/hr, should be used for all emissions calculations. Please recalculate the PM, NO<sub>x</sub>, HC and CO emissions by using 48 gal/hr fuel oil consumption instead of 24 gal/hr.
3. What are the designed maximum and minimum clear water flows to the scrubber (GPM), pressure on the spray headers (psig) and pressure drop ("H<sub>2</sub>O) across the scrubber?
4. How many oil burners does the proposed boiler have? What is the capacity of each burner?
- ✓ 5. Describe the process that will be used to feed bagasse into the boiler. How will the amount of bagasse be measured during the feeding process? What unit will be used for reporting bagasse feed?
6. Please furnish a copy of the scrubber I.D. fan operating curve. Include the fan speed (R.P.M.), motor H.P. and amperage.



Mr. Fanjul  
July 2, 1981  
Page Two

of the exhaust fan at design conditions. What is the temperature of the flue gas at the scrubber I.D. fan?

7. Provide the actual monthly fuel oil consumption during 1979 and 1980 for each existing boiler (units 1 through 5).

8. Is any plant expansion that would increase air pollutant emissions planned in conjunction with the proposed boiler?

7000 g/hay  
fuel oil  
limit.

9. What are the maximum emissions of all criteria pollutants and heat input rates for each existing boiler and the proposed boiler? List this information in a table.

10. How will fugitive particulate emissions from the storage and transfer of bagasse be controlled? Please submit a plan for the control of fugitive bagasse dust generated from storage.

- ✓ 11. Provide a letter from the scrubber manufacturer on the performance of the scrubber giving efficiency and the particulate emission limits (in pounds per million Btu heat input) which can be met for varying particule sizes.

12. Furnish a drawing of the stack configuration indicating sampling port locations, safety platforms, inlet ducting, etc.

Will send #13  
to us.

13. Give the control efficiency, cost, and inlet and outlet loading of the multi-cyclone dust collector which was not specifically addressed as part of the control equipment in the application.

14. What is visible emissions impact in the area of the plant? (Will the new boiler increase the number of employees?).

15. In the PSD analysis, air quality impacts from Boilers #1 through #5 are compared with impacts from Boilers #2 through #6. Is Boiler #1 going to be shut down permanently?

16. Please perform an increment consumption analysis for both TSP and SO<sub>2</sub>. According to information on page 14 of the PSD analysis, Boiler #5 and Boiler #6 would consume increment. Please submit increment consumption tables and the required computer modeling runs.

Mr. Fanjul  
July 2, 1981  
Page Three

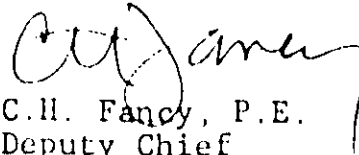
17. Please perform an ambient air quality standards analysis for  $\text{SO}_2$  in the vicinity of Osceola Farms with Boiler #6 in operation. Interactions with surrounding sources should be investigated, including EPL-Martin. Please submit an ambient concentration table and the required modeling runs.
18. Since the new boiler will increase emissions of nitrogen oxides by a significant amount, an ambient air analysis of nitrogen oxides needs to be performed. Please submit the required modeling runs.
19. Based on the latest EPA ambient monitoring guidelines (Ambient Monitoring Guidelines for Prevention of Significant Deterioration, EPA-450/4-80-012, Section 2), we believe that ESE's procedure to determine a TSP background is not justified. We suggest two alternatives for developing this background. One alternative could be based on the data collected from the Palm Beach County Health Department TSP monitor PB-16. This monitor would be considered a "regional" monitor. Because of its remote location, with the Everglades to the north and Loxahatchee Wildlife Refuge to the south, the impact of cane field burning would probably not be reflected in data from this monitor. Therefore, a modeling analysis of the impact of cane field burning would need to be included in order to supplement the data from PM-16.

The other alternative would be to use data from an existing Sugar Cane League monitor within 10 km of Osceola Farms. The impact of cane field burning would probably be reflected in data from that monitor. If data from Sugar Cane League monitor was used, though, the data would have to meet all FDER and EPA quality assurance requirements, and the data would have to be submitted to FDER for verification. Since data from one of the Sugar Cane League monitors may be impacted by point source emissions from Osceola Farms, the modeled impact of these sources at the location of the monitor could be subtracted out. For either alternative, we suggest that three years of monitor data be used if available.

Mr. Fanjul  
July 2, 1981  
Page Four

As soon as we receive the required information, we will resume processing your application. If you have any questions on the data requested, please contact this office. Cleve Holladay should be contacted on any questions related to: modeling and Bob King on the other items.

Sincerely,



C.H. Fancy, P.E.  
Deputy Chief  
Bureau of Air Quality Management

CHF:dav

cc: West Palm Beach  
DER, Ft. Myers

Willard

STATE OF FLORIDA



DEPARTMENT OF

# Health & Rehabilitative Services

Bob Graham, Governor

District Nine  
P. O. Box 29

Palm Beach County Health Dept.  
West Palm Beach, Florida 33402

Please Address

Reply to:

June 29, 1981

Mr. Willard Hanks  
Department of Environmental Regulation  
Bureau of Air Quality Management  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32301

Re: PSD/BACT/Non-Attainment  
Permitting - Osceola Farms  
Company - Boiler No. 6



Dear Mr. Hanks:

This agency has reviewed the application for the above referenced source. The application form is incomplete. Please include our comments below in your agency's request for additional information:

- ✓ 1. What is the basis for the Particle Size found in Section 3, Item D, P.3 of 10?
2. Page 9 of 10 of Osceola's Application is the same as that page found in Atlantic Sugar Association Boiler #5's application. Please delete or correct.
3. The ultimate Analysis of Bagasse submitted by Riley Stoker and Distral, S.A. do not agree as to the percentage of sulfur (0.2 vs. 0.04%). Please clarify.
4. Drawing of Scrubber is for boilers #2 - #3, not #6. Need specific drawings of Unit #6, Boiler, Scrubber, fan and stack configuration including sampling ports, platforms and ladders.
5. Osceola's PSD report dated May 28, 1981, is identical to the PSD report submitted for Atlantic Unit #5 dated May, 1981. Specifically Tables 4-1, 5-1, 6-1, and 6-3 contain the same numeric values for both sources. Atlantic's report is based upon a 100,000 #/hour boiler and Osceola's boiler has a design of 150,000 #/hour. However, the PSD data for both units found in the tables listed above are the same (Table 6-3, etc). Please verify that this is in fact an accurate way to reflect concentrations for Osceola. It is this agency's opinion that the emission data, PSD consumption results, Maximum Predicted Ground-Level Concentrations will not be identical for the two different sources.

7. IPS's Specifications 309/06-03-01, Section V.9, page 6 of 13; and Section V. 16, page 10 of 13, state that two scrubbers and 2 stacks are designed for Unit #6. However, the site plan implies one scrubber and stack. Please clarify.

8. Section III, Page 3 of 10, Item C. The SO<sub>2</sub> emissions appear to be incorrect. Please correct and resubmit.

9. Table 1, the Maximum Annual Emission of Criteria Pollutants, page HTB 2.1. The Annual Emissions (T/yr) for Boilers 1 through 5 for SO<sub>2</sub> and Boilers 2 through 6 for PM and SO<sub>2</sub> are incorrect. Please recalculate and correct all items.

10. Table 7 and paragraph 1 of page AQ 5 indicate an interaction with Nearby Sources with boiler 2 through 5. Information should reflect boilers 1 through 6. Recalculate.

11. Appendix A, page VTBA.1, did not reflect Combustion Calculations for Fuel Oil. Please submit.

12. Appendix B, Exit Gas Calculations for oil has not been addressed. Please calculate.

13. Review of the E.S.& E's procedure to determine a T.S.P. background concentration (Table 3, Page HTB2-3) is not acceptable to this agency. Required quality assurance procedures outlined in State and Federal requirements state that a site must perform Precision and accuracy audits. Precision requirements as stated in Section 6.2.5.1 of E.P.A. Guideline Series, Ambient Monitoring Guidelines for Prevention of Significant Deterioration, E.P.A.-450/2-78-019, requires co-located samplers. Currently, the Florida Sugar Cane League, whose data was used to establish a background concentration, has not met minimum Q.A. requirements. Therefore, this data cannot be used to establish a background for T.S.P. Additionally, from a statistical standpoint, one does not take an average (background of 40 ug/m<sup>3</sup>) of an average (84th percentile figures of 42, 32, 46). Both reasons above invalidate the proposed background figure of 40 ug/m<sup>3</sup> established by E.S.& E.

14. Data calculated from Palm Beach County Health Department T.S.P. Station # P.B.-16, indicates that the 84th percentile figure for data collected at this site since 1976 through 1980 will give us a background concentration of 47 ug/m<sup>3</sup>. The Health Department's data meets all F.D.E.R. and E.P.A. quality assurance requirements - (Data attached). This agency, therefore, recommends a background concentration of 47 ug/m<sup>3</sup>. Modeling requirements must address this change in background.

15. Osceola's Five Year Particulate Program did not adjust the stack heights for downwashing, as was the case in the modeling for the SCGC #8 and Atlantic #5. Please explain as to why the model does not address downwashing and its effects on the ground level concentrations.

16. The Wind Speed used in the modeling for Osceola was taken at 7.00 meters, as was the case for the SCGC #8 data. However, Atlantic's input states that wind speed was taken at 10.00 meters. Please explain the differences in elevation, since all data is collected at the same location, NWS in West Palm Beach.

17. Computer modeling for Unit #6 is calculated with a Stack Diameter (SD) of 2.16 meters (85"). However, Section III, Item H states that the SD is 6' (72"). Which is correct? Recalculate the model to reflect the correct information. Additionally, information in this office indicates that the Stack Height (SH) for units 1 through 4 is 75', not 72' (as shown in the model). Please address.

18. Review of Osceola's Farm file indicates that a Federal PSD has not been completed for Osceola's Unit #5. A request was made by EPA in a letter dated December 4, 1979, and again in a letter from Tom Davis, dated March 12, 1980 (see attached), requesting Mr. Kleeman, engineer for Osceola, to conduct a PSD analysis for Unit #5. Since this appears to have not been completed, should it now be requested? Please advise this agency as to DER's position on this question.

19. Will the maximum hourly consumption of bagasse be only thirty (30) pounds more than average hourly consumption?

20. Page 2 Addendum calculations - Particulate Emissions were determined by comparison with a boiler producing 125,000 lbs/hr steam while burning 160 lbs/hr oil and an unnamed amount of bagasse. Has the validity of this type comparison been documented?

21. The Health Department's copy of South Florida Environmental Service's Stack Test performed on Osceola Boiler #5 (Report 219-S) on December 28, 1979 and December 31, 1979, shows that no oil was burned during test and the average steam production was less than 124,000 lbs/hr. Data on page 2 of Addendum Calculations, Section C, appears to be invalid.

22. What is the total design capacity in gallons per hour of #6 Fuel Oil of the fuel oil burners?

23. Boiler should be equipped with a fuel oil meter to measure the amount of fuel oil used.

24. What is this boiler's efficiency when burning fuel oil? Summary Performance Sheet does not address the oil specifications. Please submit Summary Performance Sheet for oil.

25. Calculations of potential emissions in Addendum Calculations are based on average fuel consumption. In our opinion, potential emissions should be calculated based on maximum fuel consumption.

26. If the boiler's maximum firing rate on oil is 384 lbs/hr, why did the bidding specifications call for the boiler to have the capability of producing 90,000 - 100,000 pounds steam per hour when burning fuel oil? At 80% boiler efficiency and everything else being equal, (i.e., steam heat value, oil heat of combustion, feed water temperature, etc.), it would require 6843 pounds of fuel oil per hour to produce 95,000 pounds of steam per hour. Please address.

27. The following sources within 50 km of Osceola were not included in the computer modeling contained in the Air Quality Analysis. Please include them in the modeling or explain why they should not be included.

City of Pahokee Incinerator pt. 01, 02.  
Gulf and Western #9, pt. 08.  
Florida Power & Light 1 & 2, Pt. 01, 02.  
Florida Sugar Refinery 1 & 2, pt. 01, 02.  
U.S. Sugar-Bryant 4, pt. 04.  
Glades Correctional Institute pt. 01, 02, 03, 04.  
Pratt & Whitney, All Points.  
FPL - Martin, Boilers 1 & 2, pt. 01, 02.  
Everglades Sugar Refinery, pt. 02.

28. Missing page 8 of 10 and 10 of 10 from the application: DER Fm. 17-22(16). Please submit.

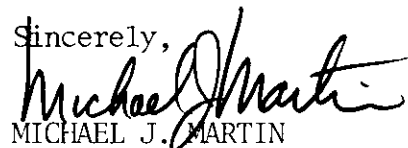
29. A manometer to measure differential pressure and a flow meter will be required to be installed on the Scrubber for monitoring the operation of this unit.

30. Will this unit have a scrubber by-pass installed? If so, please reflect its location in the drawings to be submitted.

31. Please advise this agency as to the plans that have been made to assure an adequate water supply to the scrubber.

Your cooperation is greatly appreciated.

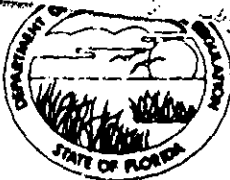
Sincerely,

  
MICHAEL J. MARTIN  
Environmental Specialist

MJM/o  
Enclosure

Cc: Mr. C. Fancy, B.A.Q.M.  
Mr. M. Baig, D.E.R., Fort Myers

2180 WEST FIRST STREET  
SUITE 401  
FORT MYERS, FLORIDA 33901



PHILIP R. EDWARDS  
DISTRICT MANAGER

STATE OF FLORIDA  
**DEPARTMENT OF ENVIRONMENTAL REGULATION**  
SOUTH FLORIDA DISTRICT

March 12, 1980

Mr. Frank Kleeman  
Kleeman Engineering, Inc.  
404 N. Andrews Avenue  
Ft. Lauderdale, Fl 33301

RE: Palm Beach Co. - AP  
Osceola Farms Co.  
Boiler #5 - *[Signature]*

**RECEIVED**  
MAR 17 1980

Division of Environmental Engineering  
PALM BEACH COUNTY  
HEALTH DEPT.

Dear Mr. Kleeman:

This letter is written in reference to our meeting in West Palm Beach - specifically the letter from EPA dated December 4, 1979 concerning Federal PSD requirements for Osceola Farm Company's Boiler #5.

While EPA has established a streamlined procedure for smaller sources (referred to by EPA as "50-ton sources"), my review of the data for this boiler indicates it would not qualify for this short review. The criteria is to have allowable emissions less than 50 tons/year or 1,000 lbs/day whichever is more restrictive. The maximum allowable emission rate for this boiler is 1,061 lbs/day.

Accordingly, it is felt that this facility will require a complete EPA review. Enclosed is a copy of a portion of the Federal Register dealing with this issue.

If there are any questions concerning this matter, please contact me.

Sincerely,

*Thomas W. Davis*

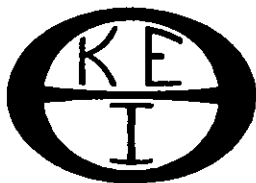
Thomas W. Davis  
Engineer

TWD/lp

Encl.

cc: Palm Beach Co. Health Dept.



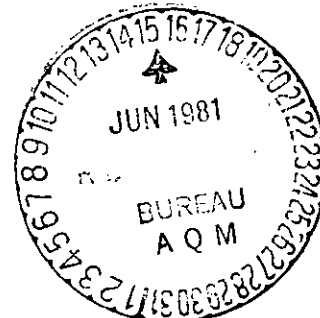


# Kleeman Engineering, Inc.

404 North Andrews Avenue • Fort Lauderdale, Florida 33301

CHEMICAL & ENVIRONMENTAL ENGINEERS

305/467-6708 • 305/735-8614



June 10, 1981

*Bill*

Mr. C. H. Fancy, Deputy Chief  
Bureau of Air Quality Management  
Fla. Dept. of Environmental Regulation  
Twin Towers Office Bldg.  
Room 616  
2600 Blairstone Rd.  
Tallahassee, Fla. 32301

Re: Osceola Farms Co. - Pahokee  
Bafasse Boiler #6 - Const. Permit Application

Dear Mr. Fancy:

In the application forms I submitted to you on June 2, with regard to the referenced Boiler #6, I failed to insert some figures on Page 3 Item C (Airborne Contaminants Emitted).

Under SO<sub>x</sub>, would you please insert the proper figures as follows:

<u>Emission</u>		<u>Potential Emissions</u>	
Maximum lbs/hr	Actual T/yr	lbs/hr	T/yr
83.8	129	83.8	129

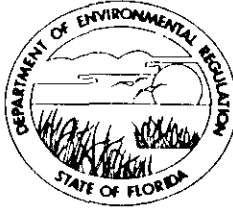
Thank you very much for your good cooperation.

Sincerely,

*Frank S. Kleeman*  
Frank S. Kleeman, P.E.

STATE OF FLORIDA  
**DEPARTMENT OF ENVIRONMENTAL REGULATION**

TWIN TOWERS OFFICE BUILDING  
2600 BLAIR STONE ROAD  
TALLAHASSEE, FLORIDA 32301



BOB GRAHAM  
GOVERNOR  
VICTORIA J. TSCHINKEL  
SECRETARY

M E M O R A N D U M

TO: Mirza Baig, South Florida District  
Michael Martin, Palm Beach County Health Department  
Larry George, BAQM  
Bob King, BAQM—

FROM: Edward Palagyi, BACT Coordinator

DATE: June 9, 1981

SUBJ: Osceola Farms Company - Draft BACT Determination

Attached is a partial BACT Determination for the subject applicant. Please send your recommended BACT with justification to my attention before July 3, 1981. This is the third recent application received to install a bagasse boiler, the other two being Atlantic Sugar Association and Sugar Cane Growers Cooperative.

A final determination will be made based on the comments received. Your willingness to be on the BACT review panel for the three bagasse boilers is greatly appreciated.

EP:dav

Best Available Control Technology (BACT) Determination

Osceola Farms Company

Palm Beach County

The applicant proposes to install a 288 million Btu per hour bagasse fired steam generator at their existing facility located in Pahokee, Florida. The proposed unit designated boiler No. 6 will use No. 6 oil with a maximum sulfur content of 1 percent as an auxiliary fuel. The pollutant emission control device is to be a Joy Turbulaire impingement wet scrubber. Operation at the facility is seasonal, scheduled around-the-clock November through March.

BACT Determination Requested by the Applicant:

<u>Pollutant</u>	<u>Emission Limit</u>
Particulates (Bagasse)	0.20 lb/10 <sup>6</sup> Btu
Particulates (Fuel Oil)	0.10 lb/10 <sup>6</sup> Btu
SO <sub>2</sub>	1.0% low sulfur oil

Date of Receipt of a BACT Application:

June 2, 1981

Date of Publication in the Florida Administrative Weekly:

June 12, 1981

BACT Determination by DER:

Please send your recommendation for BACT to Ed Palagyi, BAQM by July 3, 1981. A determination will be made <sup>based</sup> on the comments received.

EP:dav