

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
NOTICE OF FINAL PERMIT AMENDMENT

In the Matter of an  
Application for Permit Amendment

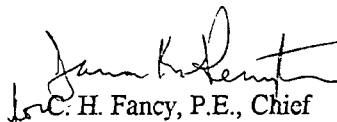
Mr. S. Donald Schaberg, General Manager  
Osceola Power Limited Partnership  
Post Office Box 609  
Pahokee, Florida 33476

DEP File No. 0990331-004-AC  
PSD-FL-197D

Enclosed is a letter that amends Permit Number PSD-FL-197C. This letter amends the construction permit for Osceola Power's cogeneration facility to specify another procedure to show compliance with the sulfuric acid mist emission standard.

Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, F.S., by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Legal Office; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 (thirty) days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

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

CERTIFICATE OF SERVICE

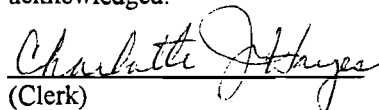
The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF FINAL PERMIT AMENDMENT (including the FINAL permit amendment) was sent by certified mail (\*) and copies were mailed by U.S. Mail before the close of business on 4/18/97 to the person(s) listed:

Donald Schaberg, Osceola Power L.P.\*  
David Knowles, SD  
Isidore Goldman, SED  
James Stormer, PBCPHU

Brian Beals, EPA  
John Bunyak, NPS  
David Buff, Golder Associates  
David Dee, Landers & Parsons

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52(7), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

  
(Clerk) 4/18/97 (Date)



# Department of Environmental Protection

Lawton Chiles  
Governor

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

Virginia B. Wetherell  
Secretary

April 16, 1997

## CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. S. Donald Schaberg, General Manager  
Osceola Power Limited Partnership  
Post Office Box 609  
Pahokee, Florida 33476

Re: FINAL Permit Modification No. 0990331-004-AC  
PSD-FL-197D

Dear Mr. Schaberg:

The Department has reviewed Osceola Power's December 6, 1996 and March 25, 1997 letters requesting that the sulfuric acid mist emission standard and EPA Method 8 testing requirement be removed from the construction permit for your new cogeneration boilers located near Pahokee in Palm Beach County.

In response to this request, the Department is retaining the sulfuric acid mist emission standard and adopting the modified Method 8 test procedure as described in the memorandum of December 19, 1995 from Jim Wright of Clean Air Engineering to Michelle Griffin. The permit is hereby amended as follows:

### Specific Condition No. 20.b.

From:

EPA Method \*

8

For Determination of

Sulfuric Acid Mist

To:

EPA Method \*

8 (modified) \*\*

For Determination of

Sulfuric Acid Mist

---

\*\* As described in Clean Air Engineering memo dated December 19, 1995, Wright to Griffin

Mr. Donald Schaberg  
April 16, 1997  
Page 2

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

Sincerely,

A handwritten signature in cursive script, appearing to read "Howard L. Rhodes".

Howard L. Rhodes, Director  
Division of Air Resources  
Management

HLR/wh/t

P 265 659 194

US Postal Service

# Receipt for Certified Mail

No Insurance Coverage Provided.

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Sent to MR. S. DONALD Schaberg	
Street & Number P.O. Box 609	
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Postmark or Date Osceola PSD-FL-197D	

PS Form 3800, April 1995

Is your RETURN ADDRESS completed on the reverse side?

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- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back, if space does not permit.
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- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

### 3. Article Addressed to:

MR. S. DONALD Schaberg  
Osceola Power, L.P.  
Post Office Box 609  
PAHOKEE, FL 33476

### 4a. Article Number

P 265 659 194

### 4b. Service Type

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### 7. Date of Delivery

4-21-97

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Anthony McPherson

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Thank you for using Return Receipt Service.



March 25, 1997

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

**RECEIVED**  
MAR 31 1997  
BUREAU OF  
AIR REGULATION

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

Re: Osceola Cogeneration Plant  
DRAFT Permit Amendment No. 0990331-004-AC  
AC50-269980, PSD-FL-197C

Dear Mr. Linero:

Osceola Power has reviewed your letter of December 23, 1996 and encloses the following information regarding sulfuric acid mist emission tests.

1. Osceola Power test results for boilers A and B using Method 8.
2. Okeelanta Power test results for boilers A, B and C using Modified Method 8 concurrently with Method 8.
3. A Project Overview Discussion by Clean Air Engineering which reviews problems with Method 8 at the Okeelanta facility.
4. A Clean Air Engineering letter dated 12/19/95 which discusses similar problems with Method 8 at the Indiantown Cogeneration Plant.

Modified Method 8 is not an approved test method for sulfuric acid mist and therefore was not used during the initial emission compliance test at Osceola in December 1996. Since the Osceola and Okeelanta Cogeneration Plants have identical boilers and fuel originates from similar sources the Modified Method 8 data from Okeelanta was considered representative of operating conditions and used in fulfillment of your request.

If you have any questions please contact me at (561) 924-9000.

Sincerely,

James M. Meriwether  
Environmental Manager

cc: David Knowles - FDEP/South District  
Ajaya Satyal - PBCHD  
Don Schaberg - OsPLP  
Mike Keegan - USOSC  
Luis Martos - USOSC

W. Hanks, BAR

D. Buff, N.A.

H. Anderson, DEP

EPA

NPS

1.0 COMPENDIUM (cont.)

TABLE 1-7  
SULFURIC ACID / SULFUR DIOXIDE TEST RESULTS - UNIT A

Parameter	Units	A M8-1	A M8-2	A M8-3	Average
Sulfuric Acid Mist	ppmv	5.8	10.0	3.3	6.37
	lb/MMBtu	0.018	0.031	0.010	0.020
	lb/hr	12.5	21.2	7.1	13.6
Sulfur Dioxide	ppmv	18.7	15.6	5.2	13.2
	lb/MMBtu	0.038	0.032	0.010	0.027
	lb/hr	26.5	21.5	7.3	18.4

Test Date		15Dec96	15Dec96	15Dec96	
Test Time		1205-1312	1405-1510	1620-1725	
Gas Flow	acfm	251857	247145	253952	250985
Gas Flow	dscfm	142395	138695	141281	140790
Gas Moisture	percent	17.4	17.3	17.9	17.5
Gas O <sub>2</sub> /CO <sub>2</sub>	percent	5.9 / 14.7	5.8 / 14.8	5.3 / 15.1	5.7 / 14.9
Gas Temperature	°F	315.2	321.9	323.4	320.2
Gas Velocity	ft/s	83.5	82.0	84.2	83.2



1.0 **COMPENDIUM** (cont.)

**TABLE 1-7**  
**SULFURIC ACID / SULFUR DIOXIDE TEST RESULTS - UNIT B**

Parameter	Units	B M8-1	B M8-2	B M8-3	Average
Sulfuric Acid Mist	ppmv	20.5	7.9	9.1	12.5
	lb/MMBtu	0.065	0.026	0.031	0.041
	lb/hr	45.2	17.1	18.7	27.0
Sulfur Dioxide	ppmv	4.4	25.9	1.8	10.7
	lb/MMBtu	0.009	0.056	0.004	0.023
	lb/hr	6.4	36.9	2.4	15.2

Test Date		18Dec96	18Dec96	18Dec96	
Test Time		0430-0540	0653-0755	0800-0907	
Gas Flow	acfm	264267	255196	251840	257101
Gas Flow	dscfm	144520	142693	134532	140582
Gas Moisture	percent	21.3	19.3	21.7	20.8
Gas O <sub>2</sub> /CO <sub>2</sub>	percent	5.9 / 14.6	5.3 / 15.4	5.4 / 15.3	5.5 / 15.1
Gas Temperature	°F	301.8	304.7	316.1	307.5
Gas Velocity	ft/s	87.6	84.6	83.5	85.2





**RESULTS**

2-3

Table 2-3:

**Stack A - Sulfur Dioxide/Sulfuric Acid Mist (EPA Method 8), Runs 4, 5, 6**

Run No.	4	5	6	Average
Date (1996)	May 29	May 30	May 30	
Start Time (approx.)	10:10	12:30	14:49	
Stop Time (approx.)	11:20	13:50	15:57	
<u>Fuel Analysis</u>				
F <sub>d</sub> Fuel factor (dscf/10 <sup>6</sup> Btu)	8,489	8,489	8,489	
<u>Gas Conditions</u>				
T <sub>s</sub> Temperature (°F)	332	342	343	339
B <sub>wo</sub> Moisture (volume %)	18.88	21.96	21.60	20.81
O <sub>2</sub> Oxygen (dry volume %)	5.7	6.1	5.6	5.8
CO <sub>2</sub> Carbon dioxide (dry volume %)	14.5	14.0	14.6	14.4
<u>Volumetric Flow Rate</u>				
Q <sub>a</sub> Actual conditions (acfm)	260,500	284,200	289,000	277,900
Q <sub>std</sub> Standard conditions (dscfm)	141,100	146,200	149,100	145,500
<u>Sulfur Dioxide</u>				
C Concentration (ppm)	31.9	35.0	34.0	33.7
E Emission rate (lb/hr)	44.97	51.03	50.60	48.9
E Emission rate (lb/10 <sup>6</sup> Btu)	0.062	0.070	0.066	0.07
<u>Sulfuric Acid Mist</u>				
C Concentration (ppm)	36.1	32.6	35.4	34.7
E Emission rate (lb/hr)	77.71	72.77	80.69	77.1
E Emission rate (lb/10 <sup>6</sup> Btu)	1.07E-01	9.95E-02	1.05E-01	1.0E-01



## RESULTS

2-4

**Table 2-4:**  
**Stack A - Sulfuric Acid Mist (Modified Method 8)**

Run No.	1	2	3	Average
Date (1996)	May 29	May 30	May 30	
Start Time (approx.)	10:10	12:30	14:49	
Stop Time (approx.)	11:20	13:52	15:57	
<u>Fuel Analysis</u>				
F <sub>d</sub> Fuel factor (dscf/10 <sup>6</sup> Btu)	8,489	8,489	8,489	
<u>Gas Conditions</u>				
T <sub>s</sub> Temperature (°F)	334	344	345	341
B <sub>wo</sub> Moisture (volume %)	22.03	22.60	20.73	21.79
O <sub>2</sub> Oxygen (dry volume %)	5.6	6.0	5.8	5.8
CO <sub>2</sub> Carbon dioxide (dry volume %)	14.5	14.2	14.4	14.4
<u>Volumetric Flow Rate</u>				
Q <sub>a</sub> Actual conditions (acfm)	251,900	271,200	275,700	266,300
Q <sub>std</sub> Standard conditions (dscfm)	130,800	138,100	143,500	137,500
<u>Sulfuric Acid Mist</u>				
C Concentration (ppm)	0.4	0.3	0.4	0.4
E Emission rate (lb/hr)	0.8000	0.7000	0.8000	0.767
E Emission rate (lb/10 <sup>6</sup> Btu)	1.14E-03	9.76E-04	1.07E-03	1.1E-03



## RESULTS

2-3

Table 2-3:

Stack B - Sulfur Dioxide/Sulfuric Acid Mist (EPA Method 8), Runs 5, 6, 7

Run No.	5	6	7	Average
Date (1996)	May 31	May 31	May 31	
Start Time (approx.)	15:21	17:34	20:14	
Stop Time (approx.)	16:36	19:23	21:27	
<u>Fuel Analysis</u>				
F <sub>d</sub> Fuel factor (dscf/10 <sup>6</sup> Btu)	8,476	8,476	8,476	
<u>Gas Conditions</u>				
T <sub>s</sub> Temperature (°F)	331	325	326	327
B <sub>wo</sub> Moisture (volume %)	24.19	22.66	22.46	23.10
O <sub>2</sub> Oxygen (dry volume %)	5.6	6.2	5.6	5.8
CO <sub>2</sub> Carbon dioxide (dry volume %)	14.6	14.2	14.7	14.5
<u>Volumetric Flow Rate</u>				
Q <sub>a</sub> Actual conditions (acfm)	278,900	266,800	273,500	273,100
Q <sub>std</sub> Standard conditions (dscfm)	141,200	139,000	142,700	141,000
<u>Sulfuric Acid Mist</u>				
C Concentration (ppm)	29.7	53.1	46.4	43.1
E Emission rate (lb/hr)	70.57	119.1	111.3	100
E Emission rate (lb/10 <sup>6</sup> Btu)	9.64E-02	1.72E-01	1.51E-01	1.4E-01

**RESULTS**

**Table 2-4:**  
**Stack B - Sulfuric Acid Mist (Modified Method 8)**

Run No.	1	2	3	Average
Date (1996)	May 31	May 31	May 31	
Start Time (approx.)	15:21	17:34	20:14	
Stop Time (approx.)	16:36	19:23	21:27	
<u>Fuel Analysis</u>				
F <sub>d</sub> Fuel factor (dscf/10 <sup>6</sup> Btu)	8,476	8,476	8,476	
<u>Gas Conditions</u>				
T <sub>s</sub> Temperature (°F)	333	325	326	328
B <sub>wo</sub> Moisture (volume %)	24.64	22.97	23.61	23.74
O <sub>2</sub> Oxygen (dry volume %)	5.5	6.0	6.0	5.8
CO <sub>2</sub> Carbon dioxide (dry volume %)	14.6	14.2	14.2	14.3
<u>Volumetric Flow Rate</u>				
Q <sub>a</sub> Actual conditions (acfm)	274,300	263,800	269,300	269,100
Q <sub>std</sub> Standard conditions (dscfm)	137,800	136,800	138,400	137,700
<u>Sulfuric Acid Mist</u>				
C Concentration (ppm)	0.64	0.37	0.27	0.43
E Emission rate (lb/hr)	1.487	0.8360	0.6099	0.978
E Emission rate (lb/10 <sup>6</sup> Btu)	2.07E-03	1.21E-03	8.73E-04	1.4E-03

## RESULTS

2-2

**Table 2-2:**  
**Stack C - Sulfur Dioxide/Sulfuric Acid Mist (EPA Method 8)**

Run No. <sup>1</sup>	2	3	4	Average
Date (1996)	June 3	June 3	June 3	
Start Time (approx.)	19:02	21:03	22:59	
Stop Time (approx.)	20:16	22:13	00:10	
<u>Fuel Analysis</u>				
F <sub>d</sub> Fuel factor (dscf/10 <sup>6</sup> Btu)	9,567	9,567	9,567	
<u>Gas Conditions</u>				
T <sub>s</sub> Temperature (°F)	316	319	316	317
B <sub>wo</sub> Moisture (volume %)	20.00	20.85	20.93	20.59
O <sub>2</sub> Oxygen (dry volume %)	6.8	6.6	6.8	6.7
CO <sub>2</sub> Carbon dioxide (dry volume %)	13.4	13.8	13.4	13.5
<u>Volumetric Flow Rate</u>				
Q <sub>a</sub> Actual conditions (acfm)	286,500	284,600	282,300	284,500
Q <sub>std</sub> Standard conditions (dscfm)	156,500	153,100	152,200	153,900
<u>Sulfur Dioxide</u>				
C Concentration (ppm)	20	10	19	16
E Emission rate (lb/hr)	31.13	15.78	28.81	25.2
E Emission rate (lb/10 <sup>6</sup> Btu)	0.0470	0.0240	0.0447	0.039
<u>Sulfuric Acid Mist</u>				
C Concentration (ppm)	37.3	15.5	18.2	23.7
E Emission rate (lb/hr)	90.49	37.26	42.89	56.9
E Emission rate (lb/10 <sup>6</sup> Btu)	1.40E-01	5.80E-02	6.81E-02	8.9E-02

<sup>1</sup> Run 1 conducted for diagnostic purpose.



## RESULTS

2-3

**Table 2-3:**  
**Stack C - Sulfuric Acid Mist (Modified Method 8)**

Run No. <sup>1</sup>	2	3	4	Average
Date (1996)	June 3	June 3	June 3	
Start Time (approx.)	19:07	21:03	22:59	
Stop Time (approx.)	20:16	22:14	00:10	
<u>Fuel Analysis</u>				
F <sub>d</sub> Fuel factor (dscf/10 <sup>6</sup> Btu)	9,567	9,567	9,567	
<u>Gas Conditions</u>				
T <sub>s</sub> Temperature (°F)	315	317	316	316
B <sub>wo</sub> Moisture (volume %)	20.83	19.81	18.14	19.59
O <sub>2</sub> Oxygen (dry volume %)	6.7	6.6	6.4	6.6
CO <sub>2</sub> Carbon dioxide (dry volume %)	13.4	13.6	13.7	13.6
<u>Volumetric Flow Rate</u>				
Q <sub>a</sub> Actual conditions (acfm)	282,800	284,900	280,500	282,700
Q <sub>std</sub> Standard conditions (dscfm)	152,900	155,500	156,600	155,000
<u>Sulfuric Acid Mist</u>				
C Concentration (ppm)	0.5	0.3	0.3	0.4
E Emission rate (lb/hr)	1.2249	0.6736	0.8062	0.902
E Emission rate (lb/10 <sup>6</sup> Btu)	1.92E-03	1.03E-03	1.21E-03	1.4E-03

<sup>1</sup> Run 1 conducted for diagnostic purpose.

## PROJECT OVERVIEW

1-4

### DISCUSSION

#### Methodology

During this test program, Clean Air Engineering incorporated guidelines as stated in Title 40 of the Code of Federal Regulations, Parts 60 (40 CFR 60), 61 (40 CFR 61) and 51 (40 CFR 51). Additional guidelines were followed in accordance with applicable requirements and provisions of 40 CFR 60, Subpart Da. The specific testing followed procedures in EPA Methods 1, 2, 3, 3A, 4, 5, 7E, 8, 9, 10, 12, 13B, 18, 19, 25, 25A, 101A, 104, 108, 201A and the EPA Emissions Measurement Technical Information Center (EMTIC) conditional test method CTM-012.

#### Fuel-Based Emission Rate Calculation

The emission rate of lb/10<sup>6</sup>Btu was calculated using a fuel factor ( $F_d$ ) of 9,567 dscf/10<sup>6</sup>Btu. This is an average of the 11 separate fuel samples collected by BPC during the test program. The results of the individual samples are contained in Appendix I.

#### Sulfuric Acid Mist

Based on experience gained during the Indiantown Cogeneration Project compliance test program in which a similar sampling situation was present, the following modifications to the sampling program were instituted.

Three EPA Method 8 runs were conducted simultaneously with three runs using Modified Method 8 procedures. This was due to a suspected positive bias caused by interferences in the flue gas resulting in the standard EPA Method 8 samples to be non-representative of the actual stack gas concentration of sulfuric acid mist.

CAE and Bechtel proposed a modification to the sampling procedure during the Indiantown Cogeneration compliance project to minimize the positive bias. Verbal agreement was received from the FDEP during that project to conduct the Modified Method 8 procedures concurrently with EPA Method 8 and submit both for review. The recommendation of the FDEP to perform additional Method 8 runs during the Indiantown Project was also followed during the Okeelanta test program.

The results of the modified runs are included in Table 2-3.

The modified sampling approach included the elimination of the analysis of the IPA impinger. In its place, the amount of filterable sulfate is considered to represent the sulfuric acid mist.

The following specific method alterations were followed in the modified runs.

## PROJECT OVERVIEW

1-5

1. A heated glass fiber filter was inserted between the probe and first impinger. This variance as allowed in paragraph 3 of section 1.2 of Method 8.
2. The train was operated according to standard Method 8 procedures.
3. At the completion of sampling, the probe and front-half glassware were rinsed with IPA. The filter was added to this rinse. These rinses were not mixed with the IPA from the first impinger.
4. The filter/probe rinse solution was analyzed for sulfate using standard Method 8 titration procedures.
5. The  $\text{H}_2\text{SO}_4$  emissions were considered to be completely represented by the sulfate determined from the filter and probe wash.

The stated detection limit for EPA Method 8 is 0.015 ppm. However, the method was specifically developed for use at sulfuric acid plants at which the flue gas is dry and free from known interferents such as ammonia and chlorides. At a facility such as Okeelanta, the method detection limit would be expected to be much higher, primarily due to interference from the combination of high flue gas moisture ( $\approx 20\%$ ) and sulfur dioxide ( $\text{SO}_2$ ).

Over the course of sampling,  $\text{SO}_2$  is partially absorbed in the isopropanol (IPA) impinger. This absorption is enhanced as the aqueous component of the first impinger increases from the condensed flue gas moisture. The method calls for a post-sampling air purge of the sampling train to remove the absorbed  $\text{SO}_2$  from the IPA. However, a small amount of  $\text{SO}_2$  will always remain in this impinger after purging due to vapor-liquid equilibrium phenomena.

### Total Non-Methane Hydrocarbons

At the request of the U.S. Generating Company, concurrent EPA Method 25 and Method 25A samples were collected during the compliance test program. In addition, EPA Method 18 was used to determine methane concentrations. Although both EPA Methods (25 and 25A) yielded mass emission rates that are below permitted limits, the results of the EPA Method 18/25A sampling procedure are believed to be more representative of actual stack conditions.

The results of the EPA Method 25A sampling indicated that minimal hydrocarbons ( $\approx 4.6$  ppm as carbon) were present in the stack gas. This was corroborated by the Method 18 results ( $\approx 2.5$  ppm) which indicated methane (also measurable by Method 25A) was also present in the stack gas in minimal quantities.







Parkway West Industrial Park • 1601 Parkway View Drive • Pittsburgh, PA 15205

Clean Air Engineering

Phone: 412/787-9130 • Fax: 412/787-9136

## MEMORANDUM

TO: Michelle Griffin  
U.S. Generating  
FAX: (301) 718-6917

FROM: Jim Wright  
Technical Director  
Clean Air Engineering  
Phone: (412) 787-9130

DATE: 12/19/95

RE: Method 8 Testing Limitations

CC: Bill Harper  
Bechtel  
FAX: (301) 330-2581

I researched the problem we are currently encountering in measuring sulfuric acid mist ( $H_2SO_4$ ) at the Indiantown facility. Based on the test results thus far, I do not believe that EPA Method 8 can be used to demonstrate compliance with the  $H_2SO_4$  limit of 1 lb/hr ( $\approx 0.1$  ppm) without some alterations to the method.

The stated detection limit for Method 8 is 0.015 ppm. By itself, this should be low enough to demonstrate compliance with the facility's  $H_2SO_4$  emissions limit. However, the method was specifically developed for use at sulfuric acid plants at which the flue gas is dry and free from known interferences such as ammonia and chlorides. At a facility such as Indiantown, the method detection limit would be expected to be much higher, primarily due to interference from the combination of flue gas moisture and sulfur dioxide ( $SO_2$ ).

Over the course of sampling,  $SO_2$  is partially absorbed in the isopropanol (IPA) impinger. This absorption is enhanced as the aqueous component of the first impinger increases from the condensed flue gas moisture. The method calls for a post-sampling air purge of the sampling train to remove the absorbed  $SO_2$  from the IPA. However, a small amount of  $SO_2$  will always remain in this impinger after purging due to vapor-liquid equilibrium phenomena.

CAE's experience has shown that, for a wet flue gas of  $\approx 100$  ppm  $SO_2$ , the amount of residual  $SO_2$  left after purging equates to an in-stack bias of approximately 1 ppm. Thus, the potential positive bias in the method is significantly higher than the emissions limit itself. Furthermore, methodology modifications such as increased sample gas volume or increased analytical sensitivity will not improve this situation.

In order to circumvent this problem, I propose that the testing approach be modified to eliminate analysis of the IPA impinger. In its place, I recommend determining the amount of filterable sulfate and expressing this quantity as sulfuric acid mist. Since the flue gas temperature is relatively low (less than  $\approx 180^{\circ}\text{F}$ ), any gaseous sulfur trioxide ( $\text{SO}_3$ ) should already exist as condensed sulfuric acid, which is filterable. Thus, the amount of potential negative bias due to the modification should be negligible. This argument should help in obtaining agency approval for the modification.

The following specific method alterations are recommended:

1. Insert a heated glass fiber filter between the probe and first impinger. This variance as allowed in paragraph 3 of section 1.2 of Method 8.
2. Operate the train according to standard Method 8 procedures.
3. At the completion of sampling, rinse the probe and front-half glassware with IPA and add the filter to this rinse. Do not mix these rinses with the IPA from the first impinger.
4. Analyze the filter/probe rinse solution for sulfate using standard Method 8 titration procedures.
5. Consider the  $\text{H}_2\text{SO}_4$  emissions to be completely represented by the sulfate determined from the filter and probe wash.

One potential problem with this approach may be in the generation of a positive bias due to the presence of non-sulfuric acid sulfates such as ammonium sulfate (note that this is a problem with the current approach as well.) If this problem is suspected, then it may be desirable to use a more sophisticated analytical approach (e.g., ion chromatography) to quantify the amount of ammonium ion present, and subtract this from the total sulfate.

I hope that this information helps to clarify the current situation and potential testing options. Please feel free to call me or Bob Preksta at (412) 787-9130 if you have any additional questions.



Lawton Chiles  
Governor



James T. Howell, M.D., M.P.H.  
Secretary

**RECEIVED**  
MAR 28 1997

**BUREAU OF  
AIR REGULATION**

**CERTIFIED MAIL  
RETURN RECEIPT REQUESTED**

March 14, 1997

**WARNING NOTICE  
AP-11-97**

Mr. S. Donald Schaberg, P.E.  
Project Manager  
Osceola Power Limited Partnership  
P.O. Box 606  
Pahokee, Florida 33476

**Subject: Osceola Cogeneration Plant  
AC50-269980/PSD-FL-197C.**

Dear Mr. Schaberg:

The Palm Beach County Health Department (PBCHD) is the delegated local air pollution control program responsible for ensuring compliance for air pollution sources facilities in Palm Beach County. The purpose of this letter is to advise you of possible violations of state regulations and to seek your cooperation in resolving the matter.

The Health Department recently performed a review of the report of emissions compliance test, conducted for two boilers at the above referenced facility in December 1996; a copy of the summary of the review is attached. The emission compliance test report revealed that the Osceola Power Limited Partnership (OSPLP) failed to comply with the permitted emission standards for various air pollutants, specifically, for Lead (Boiler A & B), Sulfuric Acid Mist (Boiler A & B), Mercury (Boiler A & B), and Visible Emission Test for Mercury Reactant Silo (failed to test). Florida Statutes 403.161(1)(b), provides that it is a violation to fail to comply with any rule, regulation, order, permit or certification adopted or issued by the Department pursuant to its lawful authority. It appears that the OSPLP failed to comply with the emission standards, for the above referenced pollutants, contained in the facility's construction permit, Florida Administrative Code - Rule 62-212.400 entitled Prevention of Significant Deterioration and Federal Rule 40 CFR 60, NSPS, Subpart Da.

Page 2  
Mr. Schaberg

Furthermore, Sections 403.161 and 403.141, Florida Statutes provide that whoever commits a violation shall be liable to the state for any damage caused and civil penalties and/or finds up to \$10,000.00 per day or portion thereof.

If your company wishes to pursue the administrative resolution of this matter please contact Mr. Ajaya K. Satyal at Palm Beach County Health Department, 901 Evernia Street, West Palm Beach, Florida 33402, telephone (561) 355-3070, within 14 days of receipt of this letter. A meeting will be arranged with the Palm Beach County Environmental Control Officer, Health Department personnel and representative(s) of the Florida Department of Environmental Protection to discuss the matter. The Health Department is interested in reviewing any facts that the OSPLP may have that will assist in determining whether any violations have occurred.

Failure to respond to this notice could result in further enforcement action.

Sincerely,



Frank J. Gargiulo, P.E., R.S., Director  
Division of Environmental Health & Engineering

FJG/AKS/lh

cc: Dan Le Vay, Esq., Acting Env. Control Officer  
James Meriwether, OSPLP  
David Knowles, P.E., DEP, Fort Myers  
Jim Pennington, P.E., DARM, Tallahassee  
Al Linero, P.E. DARM, Tallahassee



# Department of Environmental Protection

Lawton Chiles  
Governor

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

Virginia B. Wetherell  
Secretary

December 23, 1996

## CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. James M. Meriwether  
Environmental Manager  
Osceola Power Limited Partnership  
P.O. Box 606  
Pahokee, FL 33476

Re: DRAFT Permit Amendment No. 0990331-004-AC (AC50-269980), PSD-FL-197C<sub>191D</sub> ?  
Osceola Cogeneration Plant

Dear Mr. Meriwether:

The Department has reviewed your application for a minor permit amendment to Specific Conditions No. 19 and No. 20 of the above referenced permit. We need additional information to process this request. Please provide the information requested below.

1. Summary of test results on this unit using Method 8.
2. Summary of test results on this unit using Modified Method 8.
3. Any technical articles to support your request that Method 8 is inappropriate for this facility.

The Department will resume processing this application after receipt of the requested information. If you have any questions on this matter, please call Al Linero or Willard Hanks at 904/488-1344.

Sincerely,

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

AAL/wh/hh

cc: Mr. Joe Kahn, SED  
Mr. David Buff, KBN  
Mr. David Knowles, FDEP/Ft. Myers  
Mr. Jeff Korner, PBC

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

P 265 659 114

US Postal Service

# Receipt for Certified Mail

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Sent to	
James Meriwether	
Address Number	
Osceola Power	
Post Office, State, & ZIP Code	
Pahokee, FL	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	
12/23/96	
0990331-004-AC	
P50-F1-197C	

PS Form 3800, April 1995

Fold at line over top of envelope to the right

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I also wish to receive the following services (for an extra fee):

- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

James M. Meriwether  
Encl. Mgr.  
Osceola Power, LP  
PO Box 606  
Pahokee, FL 33476

4a. Article Number

P 265 659 114

4b. Service Type

- |   |   |
|---|---|
| <input type="checkbox"/> Registered                     | <input checked="" type="checkbox"/> Certified |
| <input type="checkbox"/> Express Mail                   | <input type="checkbox"/> Insured              |
| <input type="checkbox"/> Return Receipt for Merchandise | <input type="checkbox"/> COD                  |

7. Date of Delivery

12-27-96

5. Received By: (Print Name)

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

6. Signature: (Addressee or Agent)

X Calvin Briscoe

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PS Form 3811, December 1994

Domestic Return Receipt



3755 222  
HEATHER'S COPY  
256270  
Rec'd in BAR  
12/17 ?  
0990331-004-AC

**OSCEOLA POWER**

December 6, 1996

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

Attn: Mr. Clair Fancy

Re: Osceola Power Limited Partnership  
AC50-269980/PSD-FL-197A  
Sulfuric Acid Mist  
Minor Permit Amendment

RECEIVED  
MAIL ROOM  
DEC 13 96

Dear Mr. Fancy:

Osceola Power Limited Partnership (OsPLP) is requesting the Florida Department of Environmental Protection (FDEP) to amend Specific Condition #20 of our PSD permit to delete Sulfuric Acid Mist (SAM) as an emission compliance test constituent. We also request FDEP to remove the emission limit for SAM from Specific Condition #19.

Osceola Power Limited Partnership (OsPLP) is the owner of the Osceola Cogeneration Plant located in Palm Beach County - Pahokee, Florida. The Osceola Cogeneration Plant is a 74 megawatt electric cogeneration facility which utilizes biomass (clean wood waste material and bagasse) as the primary fuel and No. 2 low sulfur fuel oil as startup and supplementary fuel. The facility is permitted to burn low sulfur coal as an alternative fuel, however, coal is not currently utilized as a plant fuel source.

The cogeneration plant consists of two ABB steam boilers with a design heat input for each boiler of 760 MMBtu/hr on biomass and 600 MMBtu/hr on fuel oil. Each boiler is capable of producing approximately 506,000 lbs/hr of steam at 1,540 psig and 955 degrees F. Particulate matter, nitrogen oxides, and mercury emissions from each boiler are controlled by electrostatic precipitators, selective non-catalytic reduction, and carbon injection, respectively.

During recent emission compliance tests at the nearby Okeelanta Cogeneration Plant several SAM tests were conducted using EPA Method 8. The erratic results of these test were determined to be invalid due to probable interferences from urea and chlorides and high moisture content in the flue gas. The testing contractor, Clean Air Engineering, had experienced this problem before and recommended using a Modified Method 8.

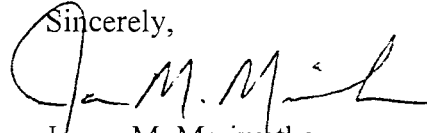
Three runs of Modified Method 8 were conducted in an attempt to achieve valid results. These results along with the initial test results were reported to the Department. Since Modified Method 8 was not an approved alternate method the test results were not accepted.

OsPLP is scheduled to conduct the facilities initial emission compliance tests on December 7, 1996 through December 13, 1996. Due to problems with Method 8 at the Okeelanta Cogeneration Plant there is concerns about compliance with our current permit conditions. During subsequent discussions on this issue with Mr. Michael Harley (FDEP BAR) it was determined that the requirement to test for SAM may be deleted through a minor permit amendment. EPA Method 8 was developed for sulfuric acid plants where the flue gas is dry and free of interference and therefore not appropriate for a biomass fired facility.

In summary, OsPLP is withdrawing our previous request for approval of Modified Method 8 as an alternate procedure and now requests that a minor permit amendment be made to PSD-FL-197A. Specifically, we are requesting that Specific Condition #20 of our PSD permit be amended to delete SAM as an emission compliance test constituent and also remove the emission limit for SAM from Specific Condition #19. I have enclosed a check in the amount of \$250.00 to cover the processing fee.

If you have any questions or require additional information please contact me at (561) 924-9000.

Sincerely,



James M. Meriwether  
Environmental Manager

cc: David Knowles - FDEP/Ft. Myers  
Ajaya Satyal - PBCHD  
Michael Harley - FDEP/TLH  
D. Schaberg - OsPLP  
G. Cepero - OC  
H. Sturm - OsPLP  
M. Keegan - USOSC  
L. Martos - USOSC  
D. Dee - L&P

SED

H. H.

W. H.



3755 222

256270



December 6, 1996

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

0990331-004-AC

PSD FL-197C

Attn: Mr. Clair Fancy

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AC50-269980/PSD-FL-197A  
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Minor Permit Amendment

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DEC 13 96

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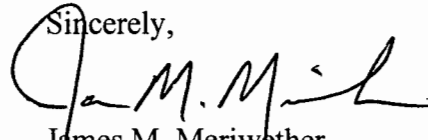
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If you have any questions or require additional information please contact me at (561) 924-9000.

Sincerely,



James M. Meriwether  
Environmental Manager

cc: David Knowles - FDEP/Ft. Myers  
Ajaya Satyal - PBCHD  
Michael Harley - FDEP/TLH  
D. Schaberg - OsPLP  
G. Cepero - OC  
H. Sturm - OsPLP  
M. Keegan - USOSC  
L. Martos - USOSC  
D. Dee - L&P

SED

H.H.

W.H.

P 265 659 194

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# Receipt for Certified Mail

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PS Form 3800, April 1995

Sent to <b>MR. S. DONALD Schaberg</b>	
Street & Number <b>P.O. Box 609</b>	
Post Office, State, & ZIP Code <b>PAHOKEE, FL 33476</b>	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date <b>Osceola PSD-FL-1970</b>	

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### 3. Article Addressed to:

**MR. S. DONALD Schaberg**  
**Osceola Power, L.P.**  
**Post Office Box 609**  
**PAHOKEE, FL 33476**

### 4a. Article Number

**P 265 659 194**

### 4b. Service Type

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| <input type="checkbox"/> Express Mail                   | <input type="checkbox"/> Insured              |
| <input type="checkbox"/> Return Receipt for Merchandise | <input type="checkbox"/> COD                  |

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**Anthony McPherson**

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PS Form 3811, December 1994

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P 265 659 114

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# Receipt for Certified Mail

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Sent to	
James Meriwether	
Street & Number	
Osceola Power	
Post Office, State, & ZIP Code	
Pahokee, FL	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	
12/23/96	
0990331-004-AC	
P50-F1-197C	

PS Form 3800, April 1995

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- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

### 3. Article Addressed to:

James M. Meriwether  
Encl. Trs.  
Osceola Power, LP  
PO Box 606  
Pahokee, FL 33476

### 4a. Article Number

P 265 659 114

### 4b. Service Type

- |   |   |
|---|---|
| <input type="checkbox"/> Registered                     | <input checked="" type="checkbox"/> Certified |
| <input type="checkbox"/> Express Mail                   | <input type="checkbox"/> Insured              |
| <input type="checkbox"/> Return Receipt for Merchandise | <input type="checkbox"/> COD                  |

### 7. Date of Delivery

12-27-96

### 5. Received By: (Print Name)

### 6. Signature: (Addressee or Agent)

X Calvin Briscoe

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

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