OSCEOLA POWER

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AIR REGULATION

March 25, 1997

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

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

P.O. BOX 606 PAHOKEE, FL 33476 561-924-9000 FAX 561-924-7428

cc: David Knowles - FDEP/South District
Ajaya Satyal - PBCHD
Don Schaberg - OsPLP
Mike Keegan - USOSC
Luis Martos - USOSC
W. Hanks, BAR
D. Duff, U.A.
K. 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 $O_2/CO_2$ | 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 $O_2/CO_2$ | 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



**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 | |
| Fuel Analysis | | | | | |
| $F_d$ | Fuel factor (dscf/$10^6$Btu) | 8,489 | 8,489 | 8,489 | |
| Gas Conditions | | | | | |
| $T_s$ | Temperature (°F) | 332 | 342 | 343 | **339** |
| $B_{wo}$ | Moisture (volume %) | 18.88 | 21.96 | 21.60 | **20.81** |
| $O_2$ | Oxygen (dry volume %) | 5.7 | 6.1 | 5.6 | **5.8** |
| $CO_2$ | Carbon dioxide (dry volume %) | 14.5 | 14.0 | 14.6 | **14.4** |
| Volumetric Flow Rate | | | | | |
| $Q_a$ | Actual conditions (acfm) | 260,500 | 284,200 | 289,000 | **277,900** |
| $Q_{std}$ | Standard conditions (dscfm) | 141,100 | 146,200 | 149,100 | **145,500** |
| Sulfur Dioxide | | | | | |
| 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/$10^6$Btu) | 0.062 | 0.070 | 0.066 | **0.07** |
| Sulfuric Acid Mist | | | | | |
| 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/$10^6$Btu) | 1.07E-01 | 9.95E-02 | 1.05E-01 | **1.0E-01** |

## RESULTS



**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 | |
| Fuel Analysis | | | | | |
| $F_d$ | Fuel factor (dscf/$10^6$Btu) | 8,489 | 8,489 | 8,489 | |
| Gas Conditions | | | | | |
| $T_s$ | Temperature (°F) | 334 | 344 | 345 | **341** |
| $B_{wo}$ | Moisture (volume %) | 22.03 | 22.60 | 20.73 | **21.79** |
| $O_2$ | Oxygen (dry volume %) | 5.6 | 6.0 | 5.8 | **5.8** |
| $CO_2$ | Carbon dioxide (dry volume %) | 14.5 | 14.2 | 14.4 | **14.4** |
| Volumetric Flow Rate | | | | | |
| $Q_a$ | Actual conditions (acfm) | 251,900 | 271,200 | 275,700 | **266,300** |
| $Q_{std}$ | Standard conditions (dscfm) | 130,800 | 138,100 | 143,500 | **137,500** |
| Sulfuric Acid Mist | | | | | |
| 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/$10^6$Btu) | 1.14E-03 | 9.76E-04 | 1.07E-03 | **1.1E-03** |

## RESULTS



**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 | |
| Fuel Analysis | | | | | |
| $F_d$ | Fuel factor (dscf/$10^6$Btu) | 8,476 | 8,476 | 8,476 | |
| Gas Conditions | | | | | |
| $T_s$ | Temperature (°F) | 331 | 325 | 326 | **327** |
| $B_{wo}$ | Moisture (volume %) | 24.19 | 22.66 | 22.46 | **23.10** |
| $O_2$ | Oxygen (dry volume %) | 5.6 | 6.2 | 5.6 | **5.8** |
| $CO_2$ | Carbon dioxide (dry volume %) | 14.6 | 14.2 | 14.7 | **14.5** |
| Volumetric Flow Rate | | | | | |
| $Q_a$ | Actual conditions (acfm) | 278,900 | 266,800 | 273,500 | **273,100** |
| $Q_{std}$ | Standard conditions (dscfm) | 141,200 | 139,000 | 142,700 | **141,000** |
| Sulfuric Acid Mist | | | | | |
| 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/$10^6$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 | |
| Fuel Analysis | | | | | |
| $F_d$ | Fuel factor (dscf/$10^6$Btu) | 8,476 | 8,476 | 8,476 | |
| Gas Conditions | | | | | |
| $T_s$ | Temperature (°F) | 333 | 325 | 326 | **328** |
| $B_{wo}$ | Moisture (volume %) | 24.64 | 22.97 | 23.61 | **23.74** |
| $O_2$ | Oxygen (dry volume %) | 5.5 | 6.0 | 6.0 | **5.8** |
| $CO_2$ | Carbon dioxide (dry volume %) | 14.6 | 14.2 | 14.2 | **14.3** |
| Volumetric Flow Rate | | | | | |
| $Q_a$ | Actual conditions (acfm) | 274,300 | 263,800 | 269,300 | **269,100** |
| $Q_{std}$ | Standard conditions (dscfm) | 137,800 | 136,800 | 138,400 | **137,700** |
| Sulfuric Acid Mist | | | | | |
| 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/$10^6$Btu) | 2.07E-03 | 1.21E-03 | 8.73E-04 | **1.4E-03** |

## RESULTS

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

| Run No.[1] | | 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 | |
| Fuel Analysis | | | | | |
| $F_d$ | Fuel factor (dscf/$10^6$Btu) | 9,567 | 9,567 | 9,567 | |
| Gas Conditions | | | | | |
| $T_s$ | Temperature (°F) | 316 | 319 | 316 | **317** |
| $B_{wo}$ | Moisture (volume %) | 20.00 | 20.85 | 20.93 | **20.59** |
| $O_2$ | Oxygen (dry volume %) | 6.8 | 6.6 | 6.8 | **6.7** |
| $CO_2$ | Carbon dioxide (dry volume %) | 13.4 | 13.8 | 13.4 | **13.5** |
| Volumetric Flow Rate | | | | | |
| $Q_a$ | Actual conditions (acfm) | 286,500 | 284,600 | 282,300 | **284,500** |
| $Q_{std}$ | Standard conditions (dscfm) | 156,500 | 153,100 | 152,200 | **153,900** |
| Sulfur Dioxide | | | | | |
| C | Concentration (ppm) | 20 | 10 | 19 | **16** |
| E | Emission rate (lb/hr) | 31.13 | 15.78 | 28.81 | **25.2** |
| E | Emission rate (lb/$10^6$Btu) | 0.0470 | 0.0240 | 0.0447 | **0.039** |
| Sulfuric Acid Mist | | | | | |
| 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/$10^6$Btu) | 1.40E-01 | 5.80E-02 | 6.81E-02 | **8.9E-02** |

[1] Run 1 conducted for diagnostic purpose.

## RESULTS



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

| Run No.[1] | | 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 | |
| Fuel Analysis | | | | | |
| $F_d$ | Fuel factor (dscf/$10^6$Btu) | 9,567 | 9,567 | 9,567 | |
| Gas Conditions | | | | | |
| $T_s$ | Temperature (°F) | 315 | 317 | 316 | **316** |
| $B_{wo}$ | Moisture (volume %) | 20.83 | 19.81 | 18.14 | **19.59** |
| $O_2$ | Oxygen (dry volume %) | 6.7 | 6.6 | 6.4 | **6.6** |
| $CO_2$ | Carbon dioxide (dry volume %) | 13.4 | 13.6 | 13.7 | **13.6** |
| Volumetric Flow Rate | | | | | |
| $Q_a$ | Actual conditions (acfm) | 282,800 | 284,900 | 280,500 | **282,700** |
| $Q_{std}$ | Standard conditions (dscfm) | 152,900 | 155,500 | 156,600 | **155,000** |
| Sulfuric Acid Mist | | | | | |
| 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/$10^6$Btu) | 1.92E-03 | 1.03E-03 | 1.21E-03 | **1.4E-03** |

[1] Run 1 conducted for diagnostic purpose.

## PROJECT OVERVIEW



## 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 Technicial Information Center (EMTIC) conditional test method CTM-012.

Fuel-Based Emission Rate Calculation

The emission rate of lb/$10^6$Btu was calculated using a fuel factor ($F_d$) of 9,567 dscf/$10^6$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 recieved 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. 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 $H_2SO_4$ 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 (≈20%) 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.

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 (≈ 4.6 ppm as carbon) were present in the stack gas. This was collaborated by the Method 18 results (≈ 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: 412/787-9138

**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

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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 (≈0.1ppm) 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 interferents 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 ≈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 ≈180°F), any gaseous sulfur trioxide ($SO_3$) 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 $H_2SO_4$ 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 Prelsta at (412) 787-9130 if you have any additional questions.

FLORIDA DEPARTMENT OF HEALTH

Lawton Chiles
Governor

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

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**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.

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 197D ?
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

P 265 659 114

US Postal Service
**Receipt for Certified Mail**
No Insurance Coverage Provided.
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| | |
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| 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 |

PS Form **3800**, April 1995

0990331-004-AC
PSO-FI-197C

Fold at line over top of envelope to the right

**SENDER:**
- Complete items 1 and/or 2 for additional services.
- 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.
- 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:
James M. Meriwether
Env. Mgr.
Osceola Power, LP
PO Box 606
Pahokee, Fl 33476

4a. Article Number
P 265 659 114

4b. Service Type
☐ Registered ☑ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ 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

PS Form **3811**, December 1994 Domestic Return Receipt

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

3755 2227

HEATHER'S COPY
256270

OSCEOLA POWER

Rec'd in BAR 12/17 ?

December 6, 1996

0990331-004-AC

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.

P.O. BOX 606 PAHOKEE, FL 33476 561-924-9000 FAX 561-924-7428

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
U.H.

3755 2222 256270

**OSCEOLA POWER**

December 6, 1996

0990331-004-AC
PSD-FL-197C

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

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