

Memorandum

Florida Department of Environmental Protection

To: Clair Fancy

From: Willard Hanks *W.H.*

Subject: Okeelanta Power L.P.
AC50-219413/PSD-FL-196

Date: April 29, 1997

This cogeneration facility is permitted to burn biomass (bagasse and wood chips), No. 2 oil and coal. Emissions are controlled by the use of a SNCR for NO_x, ESPs for PM, carbon injection for mercury, and the use of low sulfur (0.7%) coal for SO₂.

Key events in the permit for Okeelanta Power L.P.'s 74.9 MW cogeneration facility near Pahokee, Florida are:

- Application (Flo-Energy, Inc.) received on September 30, 1992.
- Application complete on February 18, 1993.
- DEP Intent issued June 3, 1993. Permit issued on September 27, 1993. Original expiration date was July 1, 1996.
- Facility burned fuel oil during October, 1995.
- Facility burned biomass during February, 1996.
- Permit amended February 20, 1996, to limit MSW (yard waste) to 30%.
- Initial compliance tests conducted in May, 1996.
- On April 7, 1996, the permittee requested, and on June 14, 1996, the Department approved additional time (until April 1, 1997) for the simultaneous operation of the cogeneration and sugar mill boilers. Time needed to connect bagasse feed system from the sugar mill to the cogeneration facility.
- On May 13, 1996, the permittee requested permission to burn tire derived fuel (TDF). On January 22, 1997, the Department approved a test burn of TDF.
- On December 18, 1996, the permittee requested the sulfuric acid mist (SAM) standard and test method be deleted because of problems (ammonia interference) with the test method. On April 18, 1997, the Department approved another procedure to determine compliance with the SAM standard.
- PBCPHU sent a warning notice dated February 11, 1997, for exceedances in mercury, carbon monoxide, visible emissions, and other operation items.
- On *March* ~~May~~ 3, 1997, the permittee requested additional time for simultaneous operation of the cogeneration and sugar mill boilers because of bagasse feed connection problems between the plants. The Department issues an Intent to approve the additional time (until April 1, 1998) on March 20, 1997.

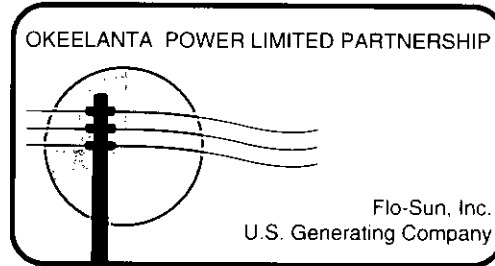
- On April 23, 1997, permittee requested more time to do the TDF test burn. The Department will process this request in May.
- During April, 1997, their environmental engineer said a request to address the mercury, sulfur dioxide and carbon monoxide emissions was being prepared.

The plant has had problems. Among them were:

- The fans had to be relocated to after the electrostatic precipitator because of abrasion.
- The feed (wood chips) and ash contained higher metal content than allowed. Better monitoring of the fuel quality seems to have corrected this.
- Emissions of some pollutants exceeded the permit standards. Changing the test method for SAM, which was biased by the ammonia interference, should allow the plants to comply with the SAM standard. The engineer will request a permit modification for some other pollutants.
- The bagasse feed system from the sugar mill to the cogeneration boilers has mechanical problems. The permittee is still working on this.

The situation at Osceola Power L.P. is similar.

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February 14, 1997

State of Florida
Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

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

Re: Okeelanta Power Limited Partnership
Permit No. AC50-219413/PSD-FL-196
Fuel Testing Requirements

Dear Mr. Fancy:

Okeelanta Power Limited Partnership is the owner of the Okeelanta Cogeneration Plant located in Palm Beach County. The Plant is a 74.9 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. Authorized wood waste material is clean construction and demolition wood debris, yard waste, land clearing debris, and other clean cellulose and vegetative matter.

Specific Condition #12 of the facility's PSD permit requires that wood waste fuel be tested on a weekly basis for chromium, copper and arsenic (CCA) during the first year of operation and monthly thereafter, if the Department determines on the basis of the prior test results that less frequent testing is appropriate. The CCA permit limits for wood waste fuel are 83.3 ppm chromium, 62.8 ppm copper and 70.7 ppm arsenic.

During 1996 the Okeelanta Power fuel sampling program collected and analyzed 142 wood waste samples for CCA. This sampling program averaged 2.7 samples per week which was more stringent than the permitted requirements. Of the 142 samples analyzed only 10 samples exceeded the permitted limits for CCA. As per Section 4.2 of the Okeelanta Generating Plant "Wood-Waste and Ash Inspection and Testing Plan" these 10 samples were re-analyzed to verify the original results. The results of the 10 samples that were re-analyzed indicated the wood waste fuel to be in compliance with permit limits. The 10 analytical values that exceeded permit limits are included in the following annual average.

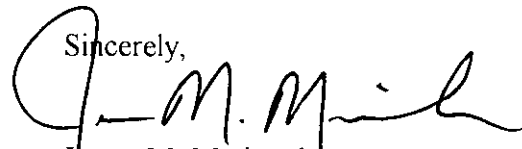
The average analytical value for CCA in wood waste fuel during 1996 are:

Chromium	26.42 ppm
Copper	19.16 ppm
Arsenic	18.59 ppm

The 1996 analytical results verify that Okeelanta Power is in substantial compliance with the permitted limits for CCA in wood waste fuel and therefore request, as per Specific Condition #12, that testing now be conducted on a monthly basis.

A summary of the 1996 analytical results are attached for your review. If you have any questions please contact me at (561) 993-1003.

Sincerely,



James M. Meriwether
Environmental Manager

cc: A. A. Linero - FDEP/BAR
Willard Hanks - FDEP/BAR
David Knowles - FDEP/Ft. Myers
Ajaya Satyal - PBCHD
Dennis Space - OPLP
Jerry Ketterling - USOSC
Bob Zarbo - USOSC
David Dee - Landers & Parsons

CC: EPA
NPS

Kathy Anderson, DEP

Okeelanta Power Limited Partnership							
Compliance Fuel Analysis - 1996							
Wood Waste - mg/kg							
Date	Arsenic	Chromium	Copper	Date	Arsenic	Chromium	Copper
1/3/96	17	18	12	3/21/96	3.4	6.3	14
	4.9	5.8	7.9		1.1	2.1	5.3
1/4/96	4.7	4.8	14	3/23/96	BDL	1.9	5.1
	17	22	13		BDL	1.5	4.4
	15	34	38		2	3	6.1
	3.1	3.4	9.2		1	1.2	3.9
	6.1	7.4	11	3/26/96	2.7	6	11
1/8/96	7.9	8.6	14		1.5	1.1	2.9
	130	150	51	3/29/96	2.4	3	4.6
1/11/96	2.8	8.7	7.6	4/1/96	1.8	3.3	9.6
1/15/96	3.1	3.1	7.2		4.4	5.1	7.9
	1.1	1.6	3.5		1.9	2.5	11
1/18/96	19	13	20		2.5	1.6	5.1
	76	160	62	4/4/96	2.2	4	11
1/23/96	200	250	140		3.3	3.4	12
	12	7.1	10		2.4	3	11
1/23/96	22	24	19	4/5/96	1.2	1.4	5.8
1/25/96	6.1	8.6	8.2		3.7	3.8	8.4
1/29/96	6.4	7.8	12	4/11/96	3.1	4.3	12
	1.1	1.2	1.7		2.4	2.5	8.2
2/2/96	2.2	2.4	5.6		2.1	2.9	7.8
	2.2	2	5.1	4/18/96	3.3	3.7	8.5
2/7/96	5.6	2.9	8	4/21/96	1.6	2.6	7.6
	1.6	1.4	4.7		1.9	2.9	7.5
	1.9	2.1	4.2		4.9	7.6	12
2/8/96	7	3.5	6.4	4/26/96	1.3	2.3	5.2
	5.6	5.3	14		3.4	2.3	8.5
	15	12	21	5/6/96	2.3	1.8	3.6
	6.6	10	19		7.2	5.4	18
	16	29	36	5/13/96	8.8	12	12
	6.3	6.6	15		BDL	4	12
	41	48	48	5/16/96	4.9	7.9	9.8
	38	49	40		2.8	2.5	3.9
2/12/96	6.5	6.4	9.6	5/21/96	BDL	1.4	6
	38	48	15	5/24/96	29	16	19
2/20/96	5.1	3.6	8.6	5/29/96	10	11	20
	2.8	2.8	8.1	5/31/96	140	170	120
3/5/96	6.3	5.8	11		8	9.1	13
	10	4.6	12	6/5/96	3.6	3.5	6.5
3/12/96	7.5	4.8	8.9	6/7/96	3	3.6	9.5
	17	11	13	6/11/96	7.9	9	17
3/13/96	6.5	4.2	7.1	6/13/96	8	11	14
	640	1100	400	6/19/96	3.9	3.9	8.9
3/15/96	3.8	4.1	8	6/24/96	BDL	3.1	6.9
	2.2	3.6	7.8	6/26/96	BDL	3	6

Date	Arsenic	Chromium	Copper		Date	Arsenic	Chromium	Copper
6/28/96	5.6	6.1	9.1		12/9/96	0.5	2	4.7
7/2/96	11	5.7	12		12/13/96	11	16	12
7/9/96	8.8	7.3	19		12/17/96	2.1	4.1	14
7/15/96	2.3	4.4	8.2		12/18/96	6.5	10	16
7/16/96	2.5	2.5	5.7		12/20/96	6.3	5.2	5.9
7/21/96	1.8	2	4.4					
	220	250	120		1996			
	7.6	5	10		Average	18.59	26.42	19.16
7/25/96	110	120	75					
	3.1	3.8	9.3					
7/29/96	14	7.8	12					
	11	11	19					
7/31/96	4.5	3.2	6.2					
8/5/96	1.7	1.8	3.3					
8/7/96	<1.0	<1.0	2.5					
8/9/96	1	2.9	19					
8/12/96	BDL	BDL	3.2					
8/15/96	1.1	2.1	4.2					
8/21/96	1.5	1.8	8.8					
8/23/96	2.1	2.8	12					
8/27/96	1.4	1.3	4.5					
8/29/96	2	2.1	5.3					
9/4/96	16	15	14					
9/6/96	4.1	5	11					
9/11/96	2.6	3.2	5.7					
9/13/96	14	35	26					
9/16/96	1.9	2.1	8.6					
9/19/96	15	27	16					
9/23/96	3	3.5	5.1					
9/27/96	3.7	3.8	7.8					
9/30/96	7.7	8	11					
10/3/96	2.4	3.6	6.6					
10/5/96	2	2.1	3.6					
10/7/96	3	3.5	5.7					
10/14/96	5.2	7.6	12					
10/24/96	2.2	2.8	7.4					
10/29/96	4.5	6.4	12					
11/1/96	100	150	120					
	58	280	140					
11/7/96	15	26	27					
11/11/96	5.7	7.6	18					
11/13/96	2.1	3.2	4.1					
	170	190	91					
11/18/96	3.8	3.5	6.3					
	1.9	3	7.1					
11/25/96	1	1.4	3.2					
12/2/96	1.4	1.4	6.8					