



Westinghouse
Electric Corporation

Resource Energy Systems
Division

2400 Ardmore Boulevard
Pittsburgh Pennsylvania 15221
(412) 636 5800
WIN 261 5800

EN3250NH-EN95

RECEIVED

December 20, 1989

DEC 20 1989

Mr. Bill Thomas
Bureau of Air Regulation
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

DER-SAQM

Subject: Permit Modification for Bay Resource Management Center
Nos. AC 03-145061, -152196, and PSD-FL-129

Dear Mr. Thomas:

We would like to take this opportunity to make the following comments regarding the Technical Evaluation and Preliminary Determination and proposed modified air permit for the Bay Resource Management Center located in Panama City, Florida.

1. In Specific Condition 4, the emission factors for wood and MSW for hydrogen chloride and sulfuric acid mist should have the units lb/ton listed in the table heading.
2. Specific Condition 6.f states that CO emissions, corrected to 7% O₂, shall be recorded. Based on the Florida DER's letter dated 12/16/89, Westinghouse will use the existing oxygen (wet) monitors for the correction of CO emissions. An assumed moisture correction factor will be used to correct the wet oxygen data to a dry basis.

We would like to add statements such as the following to Specific Condition 6.f. "CO emissions, corrected to 7% O₂, shall be recorded. The wet oxygen monitors may be used for the correction of CO emissions. To correct the wet oxygen data to a dry basis, a moisture correction factor can be used. The moisture content of the flue gas stream shall be determined by U.S. EPA Method 4 or another method approved by the DER. The moisture correction factor must be re-established every year. A CG value of 400 ppmv...."

3. Specific Condition 2.a states that the maximum charging rate of each combustor shall not exceed 255 tons of municipal solid waste per day (TPD) or 510 TPD for the facility. In addition, a heat input of 95.6 million Btu per hour (assuming a heating value of 4500 Btu/lb) and a steam production rate of 68,000 lbs/hr must be maintained.

Westinghouse would like to request that the tonnage of municipal solid waste incinerated at the facility be averaged over a monthly period instead of on a daily basis. The 510 TPD limit restricts the operator's ability to optimize facility performance due in part to the variation in the higher heating value (HHV) of the waste. The HHV of the waste burned in the combustors varies because of the heterogeneous nature of the waste. (See Attachment 13, Item 8, from PSD-FL-129 permit dated October 13, 1988.)

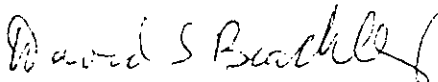
Westinghouse proposes that scalehouse records be used to monitor the tonnage of municipal solid waste that is incinerated in the Bay Facility. Westinghouse believes that the load cells located on the inclined conveyors are not as accurate as the weights recorded at the scalehouse. The amounts of MSW, non-burnable MSW, trash, and wood are currently monitored at the scalehouse. Bay personnel also track the weights of these materials and average them over daily, monthly, and yearly periods.

Attached are daily averages from July, August, and September 1989, Tables 1-3, and the monthly/yearly average for the period from October 1988 thru September 1989, Table 4. Although there are several instances when the daily total MSW charged was slightly over the 510 TPD limit, the overall monthly average was well within the 510 TPD limit, Tables 1-3. The monthly and yearly averages, Table 4, indicate that the average daily tons burned was 434 TPD which is also within the 510 TPD guideline. The variations in charging weights can be attributed to fluctuations in MSW HHV as well as facility availability.

A monthly averaging period was selected because it represents a reasonable averaging time that is currently being used at the Bay Facility. This would be similar to averaging periods used to record mass-burn throughput at other waste-to-energy (WTE) facilities. For example, the permit issued by the New York DEC for the Dutchess County WTE plant states that the maximum throughput (in TPD) is averaged over a 30-day period. Therefore, we request that the Florida DER consider a similar averaging period as the permit limit.

If you have any questions regarding the above items, please call me at (412) 636-5806, or Nancy Hirko at (412) 636-5890.

Sincerely,



David S. Beachler, Manager
Environmental & Quality Engineering

cc: N.M. Hirko, Westinghouse RESD
M. R. Lindsey, Bay Resource Management Center

WCAP-11541

DER

FEB 05 1988 (mm)

BAQM

BAY COUNTY, FLORIDA WASTE-TO-ENERGY FACILITY

EMISSION COMPLIANCE TEST

SUBMITTED TO THE FLORIDA
DEPARTMENT OF ENVIRONMENTAL RESOURCES

JUNE 1987

TABLE 1

AVERAGE DAILY MATERIAL WEIGHTS - JULY 1989
BAY RESOURCE MANAGEMENT CENTER

DAILY READINGS '89

ACTUAL DATE TAKEN	275.00	276.00	277.00	278.00	279.00	280.00	281.00	282.00	283.00	284.00	285.00	286.00	287.00	288.00	289.00	290.00	291.00
	01-Jul	02-Jul	03-Jul	04-Jul	05-Jul	06-Jul	07-Jul	08-Jul	09-Jul	10-Jul	11-Jul	12-Jul	13-Jul	14-Jul	15-Jul	16-Jul	17-Jul
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
TONS BURNED MSW UNIT 1	175.10	158.40	166.40	167.70	196.60	191.20	182.40	186.00	67.60	93.40	155.30	128.40	149.90	182.20	155.20	134.10	43.90
TONS BURNED MSW UNIT 2	284.30	258.10	190.70	358.40	310.20	258.20	197.40	335.30	309.70	267.20	285.61	289.30	269.10	265.50	233.90	0.00	12.95
TOTAL TONS	459.80	416.50	357.10	526.10	508.80	449.40	379.80	515.30	377.30	360.60	440.91	417.70	419.00	447.70	389.10	134.10	56.85
M.S.W. RECEIVED (TONS)	262.08	87.40	546.05	324.17	438.49	444.17	462.61	330.44	76.63	507.07	447.23	349.56	386.73	447.34	250.78	37.90	535.44
TRASH RECEIVED (TONS)	57.32	35.15	191.84	93.17	138.62	191.33	193.36	47.76	23.43	167.93	108.75	130.61	210.14	129.63	61.93	7.86	192.93
M.S.W. / TRASH REJECTED (TONS)	0.00	0.00	20.03	0.00	0.00	22.10	0.00	0.00	0.00	6.87	22.48	0.00	0.00	16.35	0.00	0.00	34.30
TOTAL MSW / TRASH RECEIVED (TONS)	319.40	122.55	717.86	417.34	577.22	613.40	655.97	378.20	100.06	666.13	533.52	480.17	596.87	560.62	312.71	45.76	694.07
WOOD CHIPS RECEIVED (TONS)	0.00	0.00	0.00	0.00	24.80	25.55	51.59	0.00	0.00	0.00	0.00	0.00	105.50	114.03	86.45	0.00	68.54
TOTAL RECEIVED (TONS)	319.40	122.55	717.86	417.34	602.02	638.95	707.56	378.20	100.06	666.13	533.52	480.17	702.37	674.65	399.16	45.76	762.61

DAILY READINGS '89

ACTUAL DATE TAKEN	292.00	293.00	294.00	295.00	296.00	297.00	298.00	299.00	300.00	301.00	302.00	303.00	304.00	305.00		
	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul	TOTAL	AVERAGE
	18	19	20	21	22	23	24	25	26	27	28	29	30	31.00		
TONS BURNED MSW UNIT 1	0.00	0.00	2.50	87.60	201.30	193.70	198.90	215.40	232.00	252.50	193.30	116.70	173.10	144.20	4520.90	145.84
TONS BURNED MSW UNIT 2	0.00	0.00	0.00	273.00	168.90	296.00	285.85	285.90	292.00	308.50	297.30	423.30	299.60	304.20	7299.91	235.48
TOTAL TONS	0.00	0.00	2.50	360.60	370.20	489.70	484.75	500.40	524.00	541.00	490.60	540.00	472.70	448.40	11820.81	381.32
M.S.W. RECEIVED (TONS)	522.04	334.60	378.00	461.76	301.43	62.20	558.98	541.62	361.44	352.75	449.11	161.94	269.45	464.63	11093.95	357.87
TRASH RECEIVED (TONS)	166.56	174.01	217.84	106.88	62.74	6.74	205.17	180.43	141.96	229.60	124.13	9.50	57.25	175.34	3840.41	123.88
M.S.W. / TRASH REJECTED (TONS)	6.68	0.00	0.00	10.07	17.60	0.00	27.71	0.00	12.53	0.00	0.00	0.00	0.00	17.47	218.37	7.04
TOTAL MSW / TRASH RECEIVED (TONS)	679.92	508.61	595.84	558.57	346.57	68.94	736.44	722.05	490.87	582.55	573.24	161.44	326.70	622.50	14715.99	474.71
WOOD CHIPS RECEIVED (TONS)	184.31	81.69	78.46	196.90	25.99	0.00	119.44	0.00	25.56	22.18	21.03	0.00	0.00	20.91	1262.92	40.74
TOTAL RECEIVED (TONS)	864.13	606.99	674.30	755.47	372.56	68.94	855.68	722.05	516.43	604.73	594.27	161.44	326.70	643.41	15978.91	515.45

TABLE 2

AVERAGE DAILY MATERIAL WEIGHTS - AUGUST 1989
BAY RESOURCE MANAGEMENT CENTER

DAILY READINGS '89		308.00	307.00	308.00	309.00	310.00	311.00	312.00	313.00	314.00	315.00	316.00	317.00	318.00	319.00	320.00	321.00	322.00
ACTUAL DATE TAKEN		01-Aug	02-Aug	03-Aug	04-Aug	05-Aug	06-Aug	07-Aug	08-Aug	09-Aug	10-Aug	11-Aug	12-Aug	13-Aug	14-Aug	15-Aug	16-Aug	17-Aug
TONS BURNED MSW UNIT 1		151.00	150.70	176.60	174.90	157.90	153.70	139.70	158.10	153.10	148.90	209.50	180.60	154.80	0.00	243.20	262.00	65.70
TONS BURNED MSW UNIT 2		264.40	269.00	273.20	275.50	240.20	326.90	138.80	37.00	281.90	281.90	282.30	283.90	215.89	262.71	305.75	252.15	312.50
TOTAL TONS		435.40	439.70	409.80	450.40	398.10	480.60	278.50	195.10	435.00	430.80	491.80	444.50	350.89	262.71	548.95	514.15	378.20
M.S.W. RECEIVED (TONS)		474.71	293.59	340.54	415.84	254.36	92.87	453.56	503.68	345.96	367.69	465.78	216.78	80.03	500.63	524.88	142.85	290.59
TRASH RECEIVED (TONS)		120.77	156.42	176.46	139.71	44.45	8.64	177.03	128.66	133.83	219.20	159.97	57.74	13.95	168.04	136.39	176.19	204.03
M.S.W. / TRASH REJECTED (TONS)		11.49	0.00	0.00	0.00	6.74	0.00	34.06	15.90	21.64	0.00	24.26	0.00	0.00	16.92	23.31	0.00	0.00
TOTAL MSW / TRASH RECEIVED (TONS)		588.00	450.01	517.00	555.55	292.05	101.51	596.53	616.64	458.15	588.69	601.49	274.52	93.98	651.75	637.96	519.04	494.62
WOOD CHIPS RECEIVED (TONS)		0.00	0.00	46.71	86.14	0.00	12.59	62.32	150.93	97.06	35.37	143.69	0.00	0.00	79.29	154.46	118.21	203.76
TOTAL RECEIVED (TONS)		588.00	450.01	563.71	643.69	292.05	114.10	658.85	767.57	555.21	622.26	745.18	274.52	93.98	731.04	792.42	637.25	698.38
DAILY READINGS '89																		
ACTUAL DATE TAKEN		18-Aug	19-Aug	20-Aug	21-Aug	22-Aug	23-Aug	24-Aug	25-Aug	26-Aug	27-Aug	28-Aug	29-Aug	30-Aug	31-Aug	TOTAL	AVERAGE	
TONS BURNED MSW UNIT 1		135.30	154.30	156.50	160.60	139.20	156.30	171.90	120.40	155.10	147.70	139.70	147.50	157.80	163.30	4716.00	152.13	
TONS BURNED MSW UNIT 2		230.90	240.50	277.00	303.85	311.95	310.65	276.40	281.50	262.20	208.50	258.50	291.83	0.00	354.75	7951.53	256.50	
TOTAL TONS		366.20	394.80	433.50	464.45	451.15	466.95	448.30	401.90	417.30	356.20	398.20	439.33	157.80	518.05	12667.53	408.63	
M.S.W. RECEIVED (TONS)		444.47	236.23	69.69	455.94	459.78	296.08	287.47	392.28	194.12	76.13	448.80	397.43	263.87	282.34	10261.17	331.01	
TRASH RECEIVED (TONS)		123.34	65.40	9.34	175.82	141.25	143.90	199.74	108.84	42.74	7.69	182.78	122.32	175.64	169.53	3875.19	125.01	
M.S.W. / TRASH REJECTED (TONS)		28.43	0.00	0.00	30.28	11.37	23.00	0.00	6.07	0.00	17.97	22.98	6.07	0.00	0.00	300.51	9.69	
TOTAL MSW / TRASH RECEIVED (TONS)		539.33	304.63	79.23	601.48	589.66	416.98	487.21	495.05	236.86	66.05	588.62	503.69	439.51	451.87	13835.85	446.32	
WOOD CHIPS RECEIVED (TONS)		23.62	126.05	0.00	74.21	50.13	142.52	189.25	208.48	21.59	0.00	177.98	157.40	135.00	93.58	2592.32	83.62	
TOTAL RECEIVED (TONS)		562.95	430.68	79.23	675.69	639.79	559.50	676.46	703.53	258.45	66.05	766.60	661.08	574.51	545.45	16428.17	529.94	

TABLE 3

AVERAGE DAILY MATERIAL WEIGHTS - SEPTEMBER 1989
BAY RESOURCE MANAGEMENT CENTER

DAILY READINGS '89

ACTUAL DATE TAKEN	337.00 01-Sep 1	338.00 02-Sep 2	339.00 03-Sep 3	340.00 04-Sep 4	341.00 05-Sep 5	342.00 06-Sep 6	343.00 07-Sep 7	344.00 08-Sep 8	345.00 09-Sep 9	346.00 10-Sep 10	347.00 11-Sep 11	348.00 12-Sep 12	349.00 13-Sep 13	350.00 14-Sep 14	351.00 15-Sep 15	352.00 16-Sep 16	353.00 17-Sep 17
TONS BURNED MSW UNIT 1	169.50	338.80	164.50	177.60	72.00	200.00	182.10	197.90	191.30	164.10	144.20	133.80	131.80	128.60	133.10	221.90	199.40
TONS BURNED MSW UNIT 2	157.90	000	298.60	300.60	270.00	267.30	301.04	273.60	281.70	000	150.87	291.75	54.66	102.42	325.70	293.80	281.50
TOTAL TONS	326.40	338.80	463.10	478.20	342.00	467.30	483.14	471.50	473.00	164.10	295.07	415.55	186.46	231.02	458.80	515.70	480.90
M.S.W. RECEIVED (TONS)	414.09	214.19	50.06	311.89	482.36	343.68	401.54	421.13	195.24	55.96	336.24	304.78	228.78	216.20	282.80	171.48	54.25
TRASH RECEIVED (TONS)	95.41	43.41	8.81	97.92	108.14	121.92	197.03	119.11	84.08	20.87	148.81	143.45	118.60	113.25	99.60	51.04	6.40
M.S.W. / TRASH REJECTED (TONS)	6.91	11.59	12.19	0.00	11.66	7.57	0.00	21.09	0.00	5.00	0.00	0.00	22.90	0.00	5.47	0.00	12.81
TOTAL MSW / TRASH RECEIVED (TONS)	502.59	246.01	46.69	409.81	578.64	458.03	598.57	519.15	279.32	71.83	485.05	448.23	324.48	329.45	376.93	222.52	47.84
WOOD CHIPS RECEIVED (TONS)	290.04	51.39	0.00	28.64	89.22	164.11	236.37	92.46	124.04	109.79	150.91	159.25	134.73	96.83	216.20	231.21	0.00
TOTAL RECEIVED (TONS)	792.63	297.39	46.69	438.45	668.06	622.14	834.94	611.61	403.36	181.62	635.96	607.48	459.21	416.28	593.13	453.73	47.84

DAILY READINGS '89

ACTUAL DATE TAKEN	354.00 18-Sep 18	355.00 19-Sep 19	356.00 20-Sep 20	357.00 21-Sep 21	358.00 22-Sep 22	359.00 23-Sep 23	360.00 24-Sep 24	361.00 25-Sep 25	362.00 26-Sep 26	363.00 27-Sep 27	364.00 28-Sep 28	365.00 29-Sep 29	366.00 30-Sep 30	TOTAL	AVERAGE
TONS BURNED MSW UNIT 1	210.50	189.00	190.50	190.30	160.50	153.60	178.50	172.50	206.00	190.10	182.50	195.70	184.90	5345.40	178.18
TONS BURNED MSW UNIT 2	225.40	275.25	265.20	249.40	249.60	270.20	196.60	10.70	0.00	230.20	265.60	257.10	246.30	6374.39	212.48
TOTAL TONS	435.90	464.25	456.70	429.70	410.30	423.80	365.10	183.60	206.00	420.30	448.30	452.80	431.20	11719.79	390.66
M.S.W. RECEIVED (TONS)	449.97	393.96	251.20	323.01	365.78	166.06	59.31	414.44	446.53	292.18	354.75	338.67	233.37	8573.59	285.80
TRASH RECEIVED (TONS)	162.43	169.56	144.75	174.16	124.94	46.57	23.70	146.61	153.18	119.14	133.09	131.59	38.97	3135.54	104.52
M.S.W. / TRASH REJECTED (TONS)	4.94	0.00	0.00	17.05	0.00	12.19	13.09	19.85	0.00	20.05	0.00	14.90	4.71	223.95	7.47
TOTAL MSW / TRASH RECEIVED (TONS)	467.46	562.52	395.95	480.12	490.72	209.44	69.92	541.29	599.71	391.27	487.84	445.36	267.63	11485.48	382.85
WOOD CHIPS RECEIVED (TONS)	64.35	140.15	154.74	105.82	352.25	66.02	0.00	191.86	187.24	169.57	46.75	0.00	0.00	3535.93	117.86
TOTAL RECEIVED (TONS)	671.81	702.67	550.69	585.94	742.97	266.46	69.92	723.06	786.95	560.84	536.59	445.36	267.63	15021.41	500.71

TABLE 3

AVERAGE-DAILY-MATERIAL WEIGHTS - SEPTEMBER 1989
BAY RESOURCE MANAGEMENT CENTER

DAILY READINGS '89

ACTUAL DATE TAKEN	337.00 01-Sep 1	338.00 02-Sep 2	339.00 03-Sep 3	340.00 04-Sep 4	341.00 05-Sep 5	342.00 06-Sep 6	343.00 07-Sep 7	344.00 08-Sep 8	345.00 09-Sep 9	346.00 10-Sep 10	347.00 11-Sep 11	348.00 12-Sep 12	349.00 13-Sep 13	350.00 14-Sep 14	351.00 15-Sep 15	352.00 16-Sep 16	353.00 17-Sep 17
TONS BURNED MSW UNIT 1	169.59	339.89	164.50	177.60	72.00	200.00	182.10	197.90	191.30	164.10	144.20	133.80	131.80	128.60	133.10	221.90	199.40
TONS BURNED MSW UNIT 2	157.90	000	298.60	300.60	270.00	267.30	301.04	273.60	281.70	000	150.87	291.75	54.66	102.42	325.70	293.80	281.50
TOTAL TONS	326.40	339.80	463.10	478.20	342.80	467.30	483.14	471.50	473.00	164.10	295.07	415.55	186.46	231.02	458.80	515.70	480.90
M.S.W. RECEIVED (TONS)	414.09	214.19	50.06	311.89	489.36	343.68	401.54	421.13	195.24	55.96	336.24	304.72	228.78	216.20	292.80	171.48	54.25
TRASH RECEIVED (TONS)	55.41	43.41	8.91	97.92	109.14	121.92	197.03	119.11	84.08	20.87	148.81	143.45	118.60	113.25	99.60	51.04	6.40
M.S.W. / TRASH REJECTED (TONS)	6.91	11.59	12.19	0.00	11.66	7.57	0.00	21.09	0.00	5.00	0.00	0.00	22.90	0.00	5.47	0.00	12.81
TOTAL MSW / TRASH RECEIVED (TONS)	502.59	246.01	46.69	409.81	576.84	458.03	598.57	519.15	279.32	71.83	485.05	448.23	324.48	329.45	376.93	222.52	47.84
WOOD CHIPS RECEIVED (TONS)	290.64	51.38	0.00	28.64	89.32	164.11	236.37	72.46	124.04	109.79	150.91	159.25	134.73	86.83	216.20	231.21	0.00
TOTAL RECEIVED (TONS)	792.63	297.39	46.69	438.45	666.06	622.14	834.94	611.61	403.36	181.62	635.96	607.48	459.21	416.28	593.13	453.73	47.84

DAILY READINGS '89

ACTUAL DATE TAKEN	354.00 18-Sep 18	355.00 19-Sep 19	356.00 20-Sep 20	357.00 21-Sep 21	358.00 22-Sep 22	359.00 23-Sep 23	360.00 24-Sep 24	361.00 25-Sep 25	362.00 26-Sep 26	363.00 27-Sep 27	364.00 28-Sep 28	365.00 29-Sep 29	366.00 30-Sep 30	TOTAL	AVERAGE
TONS BURNED MSW UNIT 1	210.50	199.00	190.50	180.30	160.50	153.60	178.50	172.50	206.60	190.10	132.50	195.70	184.90	5345.40	178.18
TONS BURNED MSW UNIT 2	225.40	275.25	266.20	249.40	249.60	270.20	196.60	10.70	0.00	230.20	265.60	257.10	246.30	6374.39	212.48
TOTAL TONS	435.90	474.25	456.70	429.70	410.10	423.80	375.10	183.20	206.60	420.30	448.10	452.80	431.20	11719.79	390.66
M.S.W. RECEIVED (TONS)	448.05	393.96	251.20	323.01	365.78	166.06	59.31	414.44	446.53	292.18	354.75	338.67	233.37	8573.89	285.80
TRASH RECEIVED (TONS)	162.43	168.56	144.75	174.16	124.94	46.57	23.70	146.61	153.12	119.14	133.09	121.59	38.97	3135.54	104.52
M.S.W. / TRASH REJECTED (TONS)	4.94	0.00	0.00	17.05	0.00	12.19	13.09	19.85	0.00	20.05	0.00	14.90	4.71	223.95	7.47
TOTAL MSW / TRASH RECEIVED (TONS)	407.46	542.52	395.95	480.12	490.72	200.44	69.92	541.29	599.71	391.27	487.84	445.36	267.63	11485.42	382.85
WOOD CHIPS RECEIVED (TONS)	64.35	140.15	154.74	105.82	250.25	66.02	0.00	191.96	187.24	169.57	48.75	0.00	0.00	3535.93	117.86
TOTAL RECEIVED (TONS)	471.81	702.67	550.69	535.94	742.97	266.46	69.92	723.06	786.95	560.84	536.59	445.36	267.63	15021.41	500.71

TABLE 4

AVERAGE MONTHLY MATERIAL WEIGHTS - 10/88 - 9/89
BAY RESOURCE MANAGEMENT CENTER

MONTHLY (1989) OPERATIONAL DATA													YTD	MONTHLY	DAILY	MONTHLY
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	TOTAL	AVERAGE	AVERAGE	AVERAGE
WOOD RECEIVED TONS	2,817.41	7,268.84	5,572.35	5,822.04	2,808.43	4,176.58	815.26	3,488.27	1,843.27	1,252.92	2,592.32	3,535.95	41,293.82	4,578.18	150.38	
MSW RECEIVED TONS	7,394.14	7,231.39	6,761.42	3,046.25	2,075.39	9,542.95	8,967.48	10,375.53	11,082.53	11,093.95	10,261.17	8,575.89	166,497.11	11,823.01	398.35	
TRASH RECEIVED TONS	3,192.87	3,188.16	2,565.45	3,182.51	2,785.85	4,885.71	3,769.43	3,917.92	4,160.91	3,940.41	3,875.19	3,135.54	41,999.95	4,666.65	153.28	
WHITE GOODS TONS	252.24	226.87	166.73	229.44	258.43	224.17	325.69	298.87	227.93	216.37	300.51	223.95	2,956.15	329.60	10.53	
WHITE GOODS	2.55%	2.12%	2.00%	2.03%	2.57%	1.64%	2.56%	2.09%	1.50%	1.46%	2.13%	1.91%	0.00%	2.00%	2.00%	2.00%
TOTAL FUEL RECEIVED	13,152.18	17,467.52	14,910.49	16,822.36	12,610.19	17,569.18	13,227.57	17,482.55	16,958.78	15,926.91	16,428.17	15,021.41	185,642.52	20,738.06	681.18	
TONS BURNED - UNIT #1	5,919.20	9,382.80	4,423.09	5,661.90	4,045.50	2,916.70	6,145.50	5,027.60	5,004.20	4,520.90	4,716.00	5,345.40	63,048.70	7,005.41	230.16	
TONS BURNED - UNIT #2	3,754.50	5,195.50	5,507.40	5,527.70	2,203.90	4,051.20	5,992.30	6.00	1,753.42	2,296.91	2,951.53	6,374.39	55,919.75	6,213.31	204.09	
TOTAL BURNED	9,673.70	14,578.30	9,930.49	11,189.60	6,249.40	6,967.90	12,137.80	5,027.60	6,757.62	11,828.81	12,667.53	11,719.79	118,968.45	13,218.72	434.19	
TOTAL ASH TONS	4,233.66	4,247.14	4,623.97	4,928.23	4,295.59	5,597.52	5,976.79	5,396.93	5,063.16	5,424.32	5,165.35	4,736.61	60,319.32	6,702.15	220.14	
ASH/TON (TRUCK SCALE)	0.37	0.24	0.31	0.29	0.34	0.32	0.45	0.31	0.32	0.34	0.31	0.31	0.32			
ASH/TON (INCLINE SCALE)	0.59	0.29	0.47	0.43	0.59	0.89	0.49	1.07	0.75	0.45	0.41	0.41	0.51			
GROSS GENERATION MWH	7,595.54	7,700.82	7,886.10	8,740.64	6,290.94	8,041.85	7,841.18	8,684.12	6,569.64	6,856.75	7,447.77	7,173.55	89,828.90	9,980.99	327.84	13.66
GROSS KW/TON (TRUCK SCALE)	577.51	439.87	532.47	495.81	498.39	457.44	592.72	462.49	409.10	429.11	453.35	477.56	481.29			
GROSS KW/TON (INCLINE SCALE)	265.17	528.31	724.14	719.74	1,006.65	1,152.47	646.91	1,697.95	972.18	580.06	587.94	512.09	755.06			
NET GENERATION MWH	6,864.65	6,945.32	7,114.93	7,545.44	5,592.72	7,258.02	7,083.28	7,262.62	5,895.00	6,110.25	6,629.07	6,392.15	80,603.45	8,955.94	294.17	12.26
NET KW/TON (TRUCK SCALE)	521.74	397.61	480.40	449.54	443.44	412.85	535.49	415.41	361.49	382.39	403.52	425.54	431.86			
NET KW/TON (INCLINE SCALE)	269.62	476.43	716.48	657.17	894.92	1,040.14	583.57	1,444.55	859.03	516.91	523.31	545.42	677.52			
AVAILABILITY UNIT #1	91.39%	93.61%	77.20%	92.44%	77.37%	96.37%	99.82%	91.40%	92.99%	96.99%	96.51%	98.66%	90.34%			
AVAILABILITY UNIT #2	83.35%	91.39%	76.35%	96.41%	75.29%	93.51%	90.56%	96.72%	74.31%	80.66%	89.39%	84.96%	86.58%			
TOTAL PLANT AVAILABILITY	87.37%	92.50%	77.28%	94.44%	76.53%	94.94%	94.69%	94.09%	83.65%	86.63%	92.35%	91.46%	83.46%			
CAPACITY FACTOR:																
GROSS CAPACITY FACTOR (11.5MW)	66.77%	93.91%	92.17%	97.48%	78.60%	93.99%	94.70%	94.46%	79.34%	80.14%	87.05%	86.64%	88.93%			
NET CAPACITY FACTOR (110.3MW)	69.58%	93.65%	92.85%	98.46%	78.01%	94.71%	95.51%	94.72%	76.28%	79.72%	86.51%	86.19%	89.09%			
INSURFMENT RECEIVED (510 tons)	33.19%	114.17%	93.68%	106.40%	65.27%	111.26%	86.45%	119.36%	104.96%	101.07%	103.91%	93.18%	99.99%			
INSURFMENT BURNED (510 tons)	61.19%	95.27%	62.81%	72.39%	42.25%	44.14%	79.37%	31.38%	44.17%	34.77%	40.12%	76.69%	63.74%			
RAINFALL													5.08			5.08

BAY COUNTY, FLORIDA WASTE-TO-ENERGY FACILITY

EMISSION COMPLIANCE TEST

SUBMITTED TO THE FLORIDA
DEPARTMENT OF ENVIRONMENTAL RESOURCES

JUNE 1987

Prepared by: David S. Beachler
Manager, Environmental and Quality Engineering

Signature: David S Beachler

Jill Weldon
Senior Engineer

Signature: Jill Weldon

BAY COUNTY, FLORIDA WASTE-TO-ENERGY FACILITY
EMISSION COMPLIANCE TEST REPORT

1.0 INTRODUCTION

In April 1987, Westinghouse contracted ETS, Inc. of Roanoke, Virginia to conduct stack sampling of the Bay County Resource Recovery Facility. These tests were conducted over a 1-1/2 month period during the start-up and equipment fine-tuning stages, the plant 72-hour acceptance test, and the Florida DER emission compliance tests. The DER offices were notified that tests were being conducted during the time periods of May 12-14, May 18-21, and June 4-5, 1987.

Westinghouse submits this test report to the Florida Department of Environmental Regulations as part of the Certificate of Completion of Construction.

2.0 FACILITY DESCRIPTION

The Bay County Resource Recovery Facility is located on Highway 231, 10 miles Northeast of Panama City, Florida. The facility processes 510 tons per day of municipal solid wastes (MSW) and waste wood. Heat generated by the combustion of waste in the combustor produces steam to drive a turbine generator. A process flow diagram of the Bay County facility is shown in Figure 1.

The plant consists of two combustor/boiler units, a turbine-generator, a truck scale, tipping floor, front end loaders, conveyors, air emission control equipment, a stack, ash handling equipment, a central control room, and all required ancillary equipment. The facility also includes administration offices, change rooms, parking areas, roadways, and security fencing.

basin. The fly ash, siftings, and bottom ash mixture are water quenched, dewatered, and removed by the bottom ash drag conveyor into trucks that are disposed of at a landfill.

Heat from the combustion of MSW is absorbed in the combustor barrel, boiler, and superheater to produce steam to drive the turbine-generator. Boiler feedwater moves through the boiler tubes by natural circulation as it is transformed into a mixture of saturated steam and water. Pumps circulate water through the rotary combustor by drawing water from the lower drum of the boiler through the rotary joint and into one of the combustor barrel's ring headers. The water passes through the combustor tubes and returns to the boiler steam drum as a mixture of saturated water and steam. Steam leaves the drum and passes through the primary and secondary tubes of the superheater section where the steam is heated to the design steam condition for the turbine (750°F).

The steam flows from the superheater to the turbine-generator where a portion of its energy is converted to electricity. The generator produces 3-phase, 60 Hz electrical power. Transformers provide power at reduced voltage for in-plant use, and at increased voltage for distribution to the utility grid.

3.0 PLANT CAPACITY

Plant capacity is based on the boiler steam flow rate. The facility is designed to process 510 tons per day of 4500 Btu/lb MSW in two units to produce a total of 136,000 lb/hr of steam at 600 psig and 750°F. The steam flow rate per ton of MSW is proportional to the heating value of the garbage. As the heating value fluctuates, the feed rate of MSW is adjusted to maintain a constant steam rate to the turbine. Because one cannot continuously predict the heating value of MSW, the measured steam flow rate is used to determine the capacity of each unit. During compliance testing, plant operators maintained the steam rate of each unit as close to the design condition of 68,000 lb/hr as practical.

↳ 2 UNITS = 136,000 lb/hr

TABLE 1 EMISSION COMPLIANCE TEST RESULTS FROM BAY COUNTY ENERGY RESOURCES

BAY COUNTY COMPLIANCE TEST RESULTS UNIT 1

DATE	TIME	FLUE GAS FLOW KDFCFM	FLUE GAS FLOW KACFM	STACK TEMP DEG F	STEAM FLOW KLB/HR	PERCENT OF RATED CAPACITY	PARTICULATE GR/DSCF @12%CO ₂
6/5	959	25.8	52.4	425.0	71.1	104.5	0.0140
6/5	1140	27.9	55.1	429.0	66.5	97.8	0.0240
6/5	1307	25.8	52.8	427.0	65.0	95.6	0.0200
AVERAGE					67.5	99.3	0.0193

BAY COUNTY COMPLIANCE TEST RESULTS UNIT 2

6/4	945	27.7	52.6	429.0	69.7	102.5	0.0250
6/4	1310	28.4	58.1	449.0	62.7	92.2	0.0190
6/4	1525	29.2	59.0	451.0	62.3	91.6	0.0290
AVERAGE					64.9	95.4	0.0243

TABLE 2 ADDITIONAL TEST RESULTS FROM BAY COUNTY ENERGY RESOURCES

BAY COUNTY ADDITIONAL TEST RESULTS UNIT 1

DATE	TIME	FLUE GAS FLOW KDSCFM	FLUE GAS FLOW KACFM	STACK TEMP DEG F	STEAM FLOW KLB/HR	PERCENT OF CAPACITY	PARTICULATE GR/DSCF @12% CO2
4/22	1436	25.0	45.5	373.0	58.6	86.2	0.0176
4/22 (1)	1652	25.9	50.3	387.0	70.4	103.5	0.0279
4/27	1505	24.9	48.1	441.0	68.9	101.3	0.0265
4/29	1214	19.9	39.0	441.0	61.1	89.9	0.0252
5/20 (2)	1542	29.8	49.8	426.0	70.4	104	0.0255
6/1	1903	25.5	51.2	426.0	64.0	94.1	0.0177
6/1	2029	23.7	52.3	436.0	57.2	84.0	0.0195
AVERAGE					64.4	94.7	0.0229

BAY COUNTY ADDITIONAL TEST RESULTS UNIT 2

4/23	925	28.9	56.8	422.0	64.0	94.1	0.0161
4/23	1148	24.3	48.2	422.0	65.6	96.5	0.0215
4/23	1356	23.4	45.4	405.0	62.6	92.1	0.0192
4/30	957	27.4	51.7	427.0	NO DATA	NO DATA	0.0157
5/12 (3)	1350	25.7	54.2	437.0	76.0	112	0.0246
5/13 (3,4)	1635	23.7	48.2	408.0	72.0	106	0.0355
5/14 (3)	826	25.3	51.3	421.0	80.0	118	0.0157
5/21	1016	34.1	57.3	431.0	72.6	107	0.0172
5/21 (5)	1705	30.6	50.2	411.0	69.9	103	0.0184
6/1	927	25.9	54.5	436.0	64.5	94.8	0.0164
6/1	1045	24.3	52.3	428.0	60.8	89.4	0.0173
6/1	1215	25.2	55.4	426.0	57.8	85.0	0.0177
6/3	1023	25.8	52.0	438.0	59.8	87.9	0.0191
AVERAGE					67.1	98.7	0.0196

- (1) TEST DISCONTINUED AFTER 1/2 HOUR DUE TO PLANT SHUTDOWN
- (2) WITNESSED BY CONSULTANT FROM ROY F. WESTON
- (3) DER EMISSION COMPLIANCE TEST WITNESSED BY WESTON CONSULTANT
- (4) FURNACE WENT POSITIVE FOR A FEW MINUTES WHILE CONDUCTING THIS TEST WHEN AN AIR ACTUATOR VALVE WAS BEING REPAIRED.
- (5) INCINERATOR WAS FIRED WITH MUNICIPAL WASTE AND WOOD CHIP MIXTURE.

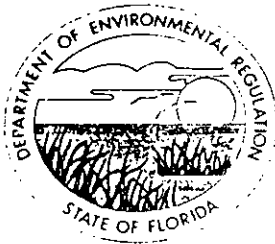
from Weston witnessed these tests for Bay County. Additional Method 5 particulate testing was conducted before and between compliance runs to evaluate whether the ESP was meeting its performance guarantees and to assist in plant troubleshooting. Table 2 contains the results from some of those tests which show an average particulate emission level of 0.0229 gr/dscf at 12% CO₂ for Unit 1 and 0.0196 gr/dscf at 12% CO₂ for Unit 2. Appendix C of this report contains the computer calculation sheets for each of the test runs listed in Table 2. This data is supplied to reinforce the compliance data and demonstrate overall reliability of the particulate removal system.

The results of Method 9 opacity measurements which were conducted during the June 4-5 compliance tests are contained in the report in Appendix A. Additional opacity measurements for the May compliance tests are contained in Appendix B. Visual measurements of opacity were continuously between 5 and 10% and confirm the low particulate levels measured by Method 5. The measurements meet, in all cases, the Florida DER requirements of less than 10% opacity and no more than 20% opacity for up to three minutes.

8.0 CONCLUSION

The results of scheduled testing indicate that Units 1 and 2 of the Bay County Resource Recovery Facility are in compliance with the particulate and visual emission levels required by the State of Florida Department of Environmental Regulations. The Method 5 particulate measurements conducted on June 4-5 at the design capacity of 255 ton per day per unit averaged 0.0193 gr/dscf at 12% CO₂ for Unit 1 and 0.0243 gr/dscf at 12% CO₂ for Unit 2. Method 9 opacity measurements were consistently at or less than 10% for both units during the test runs. Additional testing, conducted at the plant for verification and troubleshooting purposes, confirmed the low emission levels measured during the compliance test runs with average Unit 1 emissions of 0.0229 gr/dscf at 12% CO₂ and Unit 2 emissions of 0.0196 gr/dscf at 12% CO₂. The performance of the plant from an air quality standpoint is clearly within the acceptable range of less than 0.03 gr/dscf

particulate and less than 10% opacity required by the State of Florida Department of Environmental Regulations. Westinghouse (RESO) submits this report for the Bay County Resource Recovery Facility to the Florida DER and to request the issuance of an operating permit to burn MSW at the maximum plant design capacity rate of 190×10^6 Btu/hr or an equivalent of 510 TPD MSW with a heating value of 4500 Btu/lb.



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399

Bob Martinez, Governor

Dale Twachtman, Secretary

John Shearer, Assistant Sec

PERMITTEE:
Bay Resource Mgmt. Center
c/o Westinghouse RESD
Cost Building
2400 Ardmore Blvd.
Pittsburg, PA 15221

Permit Numbers: AC 03-145061
03-152196
County: Bay
Expiration Date: June 1, 1989
Latitude/Longitude: 30° 15' 54"N
85° 30' 08"W
Project: Bay County Waste-Energy
Facility, Units 1 & 2.

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawings, plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

For the increase in municipal solid waste (MSW) facility charging rate from 350 TPD (tons per day) to 510 TPD at the Bay County Waste-to-Energy facility, Bay County, Florida.

Construction shall be in accordance with the attached permit application and additional information except as otherwise noted in the General and Specific Conditions.

The PSD Number for the permits is PSD-FL-129.

Attachments are as Follows:

1. Westinghouse application package received February 5, 1988.
2. DER's letter of incompleteness dated March 7, 1988.
3. Westinghouse response received March 21, 1988.
4. U.S. EPA's letter dated March 21, 1988.
5. Fish & Wildlife Service letter received April 11, 1988.
6. DER's letter requesting additional information dated April 19, 1988.
7. Westinghouse response received April 27, 1988.
8. DER's letter dated May 26, 1988.
9. Westinghouse letter received June 10, 1988.
10. Board of Commissioners, Bay County, letter received June 16, 1988.
11. Bay County Audubon Society letter received July 22, 1988.
12. DER letter dated August 2, 1988.
13. Westinghouse letter received August 12, 1988.
14. Bay County Audubon Society letter received September 20, 1988.
15. EPA letter received October 11, 1988.
16. Final Determination dated October 12, 1988.

PERMITTEE: Bay Resource
Management Center

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GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. Municipal Waste Combustor

- a. The maximum charging rate of each municipal waste combustor (MWC) shall not exceed 255 tons of municipal solid waste (MSW) per day (a total of 510 TPD for the facility); 95.6 million Btu heat input per hour, assuming a heating value of 4,500 Btu per pound; and a steam production rate of 68,000 lbs/hr (design capacity).
- b. The wood waste utilization rate shall not exceed 160 TPD for the facility. Wood waste shall be used when sufficient MSW is not available to maintain a steady heat rate.

PERMITTEE: Bay Resource
Management Center

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03-152196

SPECIFIC CONDITIONS:

Compliance with the permit emission limits shall be determined by EPA reference method tests included in 40 CFR Parts 60 and 61 (1987 version) and listed in Condition No. 4 of this permit or by equivalent methods approved by Florida DER.

For the purpose of establishing specific increment consumption for TSP and SO₂ at the facility, an hourly emission rate shall be established for each pollutant at the time of performance testing.

The combustors are subject to 40 CFR Part 60, Subpart E; and Subpart Db, when heat input per unit exceeds 100 MMBtu/hr; except that where requirements within the permit are more restrictive, the requirements of the permit shall apply.

4. Compliance Tests

- a. Initial compliance tests for particulate matter, SO₂, nitrogen oxides, CO, VOC, lead, fluorides, mercury and beryllium shall be conducted in accordance with 40 CFR 60.8 (a), (b), (d), (e), and (f).
- b. Annual compliance tests for particulate matter, sulfur dioxide, and nitrogen oxides shall be performed.
- c. Initial and annual visible emissions compliance tests shall be determined in accordance with 40 CFR 60.11(b) and (e).
- d. The compliance tests shall be conducted within 10% of the maximum capacity and firing rate of each permitted fuel.
- e. The following test methods and procedures of 40 CFR Parts 60 and 61 or other DER approved methods with prior DER approval shall be used for compliance testing:
 - (1) Method 1 for selection of sample site and sample traverses.
 - (2) Method 2 for determining stack gas flow rate.
 - (3) Method 3 or 3A for gas analysis for calculation of percent O₂ and CO₂.

PERMITTEE: Bay Resource
Management Center

Permit Numbers: AC 03-145061
03-152196

SPECIFIC CONDITIONS:

- c. A malfunction means any sudden and unavoidable failure of air pollution control equipment or process equipment to operate in a normal or usual manner. Failures that are caused entirely or in part by poor maintenance, careless operation or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions.
- d. The procedures under 40 CFR 60.13 shall be followed for installation, evaluation and operation of all CEMS.
- e. Opacity monitoring system data shall be reduced to 6-minute averages, based on 36 or more data points, and gaseous CEMS data shall be reduced to 1-hour averages, based on 4 or more data points, in accordance with 40 CFR 60.13(h).
- f. CO emissions, corrected to 7% O₂, shall be recorded. A CO value of 400 ppmvd shall indicate good combustion (800 ppm corresponds to the emission limitation in Condition No. 3).
- g. For purposes of reports required under this permit, excess emissions are defined as any calculated average emission concentration, as determined pursuant to Condition No. 5 herein, which exceeds the applicable emission limit in Condition No. 3.

6. Operations Monitoring

- a. Devices shall be installed to continuously monitor and record steam production, furnace exit gas temperature (FEGT) and flue gas temperature at the exit of the control equipment. An FEGT to combustion zone correlation shall be established to relate furnace temperature at the temperature monitor location to furnace temperature in the overfire air fully mixed zone.
- b. The furnace heat load shall be maintained between 80% and 100% of the design rated capacity during normal operations. The lower limit may be extended provided compliance with the carbon monoxide emissions limit and the FEGT within this permit at the extended turndown rate are achieved.

7. Reporting

- a. A minimum of fifteen (15) days prior notification of compliance test shall be given to DER's Northwest District office.

PERMITTEE: Bay Resource
Management Center

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03-152196

SPECIFIC CONDITIONS:

8. The construction shall reasonably conform to the plans and schedule submitted in the application. If the permittee is unable to complete construction on schedule, the Department must be notified in writing a minimum of 60 days prior to the expiration of the construction permit and submit a new schedule and request for an extension of the construction permit, (Rule 17-2, F.A.C.).

To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit a complete application for an operating permit, including the application fee, compliance test results, and Certificate of Completion to the Department's Northwest District office a minimum of 90 days prior to the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until its expiration date. Operation beyond the construction permit expiration date requires a valid permit to operate, (Rules 17-2 and 17-4, F.A.C.).

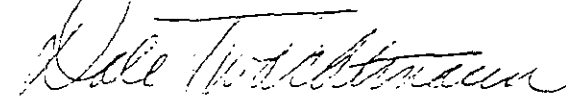
If the construction permit expires prior to the permittee requesting an extension or obtaining a permit to operate, then all activities at the project must cease and the permittee must apply for a new permit to construct which can take up to 90 days to process a complete application, (Rule 17-4, F.A.C.).

9. Any change in the method of operation, fuels, equipment or operating hours shall be submitted for approval to the Department's Northwest District office.

10. This permit shall supercede previous permits issued for the Bay County Waste-to-Energy Facility.

Issued this 14 day of Oct, 1988

STATE OF FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION


Dale Twachtmann, Secretary

Best Available Control Technology (BACT) Determination
Bay Resource Management Center
Bay County

The applicant has constructed a resource recovery facility (RRF) located near Panama City, Florida. The RRF is capable of burning up to 510 tons per day (TPD) of municipal solid waste (MSW).

When the application was submitted to construct the facility in 1984, it was proposed to supplement the available MSW with wood waste to operate at a level which was equivalent in heat input to burning 510 TPD of MSW. At that time, the applicant proposed burning 350 TPD of MSW and supplementing with 135 TPD of wood, since there were insufficient quantities of MSW available to operate at the 510 TPD capacity level. In accordance with this request, the applicant was restricted to burning only 350 TPD of MSW as a condition of the construction permit.

On February 5, 1988, the applicant requested that the construction permit be modified to increase the permitted level of 350 TPD of MSW to a level of 510 TPD. This increase in the MSW operating level will allow the facility to operate as a regional resource recovery facility for Bay County and the surrounding counties.

In accordance with the increase in MSW operating capacity, the resulting air emissions from the facility will also increase. The applicant has indicated the increases in emissions resulting from the modification as shown in Table 1.

Rule 17-2.500(2)(f)3 of the Florida Administrative Code (F.A.C.) requires a BACT review for all regulated pollutants emitted in an amount equal to or greater than the significant emission rates listed in FAC Rule 17-2, Table 500-2, Regulated Air Pollutants. The facility is located in an area classified as attainment for all air pollutants, in accordance with F.A.C. Rule 17-2.420.

BACT Determination Requested by the Applicant

A review of Table 1 indicates that sulfur dioxide (SO₂) is the only pollutant that is subject to BACT. The applicant's review indicates that BACT for the modification should be the same as the BACT approved by the Florida DER in 1984 (i.e. no acid gas control requirement). Based on test results from Bay County and other facilities, the SO₂ emission rate proposed is equivalent to 3.36 pounds per ton of MSW charged.

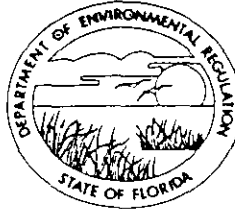
Date of Receipt of a BACT Application

February 5, 1988

DEPARTMENT OF ENVIRONMENTAL REGULATION

V# 691151
\$500.00

DER PC 03-145061

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400FEB 05 1988 BOB MARTINEZ
GOVERNORDALE TWACHTMANN
SECRETARY

BAQM

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Resource Recovery Facility
with 2 combustor/boiler units [] New¹ [X] Existing¹

APPLICATION TYPE: [] Construction [] Operation [X] Modification

COMPANY NAME: Bay Resource Management Center COUNTY: Bay

Identify the specific emission point source(s) addressed in this application (i.e. Lime
Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) 2 MSW-fired combustor/
boilers w/ESP & separate
flues.

SOURCE LOCATION: Street U.S. Highway 231 City Panama City

UTM: East 644.1 North 3348.9

Latitude 30 ° 15 ' "N Longitude 85 ° 30 ' "W

APPLICANT NAME AND TITLE: Bay Resource Management Center

APPLICANT ADDRESS: c/o Westinghouse RESD, Cost Bldg., 2400 Ardmore Blvd.,
Pittsburgh, PA 15221; Attention: David S. Beachler

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Bay County

I certify that the statements made in this application for a modification permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: D. S. BeachlerD. S. Beachler, Manager, Environmental Eng.
Name and Title (Please Type)Date: 1/18/88 Telephone No. (412)636-5806

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

¹ See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.



Signed Charles B. Speicher, P.E.
 C. B. Speicher

 Name (Please Type)

Westinghouse RESD

 Company Name (Please Type)

Cost Bldg., 2400 Ardmore Blvd.,
 Pittsburgh, PA 15221

 Mailing Address (Please Type)

Penna. Registration No. 15472-E Date: 1-18-88 Telephone No. (412)636-5840

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

See Attachment A

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction NA Completion of Construction NA

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Two Electrostatic Precipitators \$1,046,000

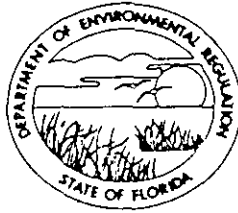
D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

AC-03-84703 Jan. 31, 1988

AC-03-84704 Jan. 31, 1988

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400



DER
FEB 5
BAQM

BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

Resource Recovery Facility
SOURCE TYPE: with 2 combustor/boiler units [] New¹ [X] Existing¹

APPLICATION TYPE: [] Construction [] Operation [X] Modification

COMPANY NAME: Bay Resource Management Center COUNTY: Bay

Identify the specific emission point source(s) addressed in this application (i.e. Lime
Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) 2 MSW-fired combustor/
boilers w/ESP & separate
flues.

SOURCE LOCATION: Street U.S. Highway 231 City Panama City

UTM: East 644.1 North 3348.9

Latitude 30 ° 15 ' ____ "N Longitude 85 ° 30 ' ____ "W

APPLICANT NAME AND TITLE: Bay Resource Management Center

c/o Westinghouse RESD, Cost Bldg., 2400 Aramore Blvd.,
APPLICANT ADDRESS: Pittsburgh, PA 15221 Attention: David S. Beachler

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I agree to maintain and operate the pollution control source and pollution control
facilities in such a manner as to comply with the provision of Chapter 403, Florida
Statutes, and all the rules and regulations of the department and revisions thereof. I
also understand that a permit, if granted by the department, will be non-transferable
and I will promptly notify the department upon sale or legal transfer of the permitted
establishment.

*Attach letter of authorization

Signed: David S. Beachler

D.S. Beachler, Manager, Environmental Eng.
Name and Title (Please Type)

Date: 2/3/88 Telephone No. (412) 636-5806

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have
been designed/examined by me and found to be in conformity with modern engineering
principles applicable to the treatment and disposal of pollutants characterized in the
permit application. There is reasonable assurance, in my professional judgment, that

¹ See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed 

Alan F. Richter

Name (Please Type)

STV ENGINEERS, INC.

Company Name (Please Type)

11 Robinson Street, Pottstown, PA 19464

Mailing Address (Please Type)

Florida Registration No. 13826 Date: 2-1-88 Telephone No. 215/326-4600

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

See Attachment A

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction NA Completion of Construction NA

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Two Electrostatic Precipitators \$1,046,000

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

AC-03-84703 Jan. 31, 1988

AC-03-84704 Jan. 31, 1988

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ;
 if power plant, hrs/yr 8760 if seasonal, describe: This facility is expected to be in
continuous operation except for maintenance outages. Full capacity of the plant is
510 TPD MSW. Wood waste and bark will be burned as supplemental fuel.

F. If this is a new source or major modification, answer the following questions.
 (Yes or No)

- | | |
|---|------------|
| 1. Is this source in a non-attainment area for a particular pollutant? | <u>NO</u> |
| a. If yes, has "offset" been applied? | <u>N/A</u> |
| b. If yes, has "Lowest Achievable Emission Rate" been applied? | <u>N/A</u> |
| c. If yes, list non-attainment pollutants. _____ | <u>N/A</u> |
| 2. Does best available control technology (BACT) apply to this source?
If yes, see Section VI. | <u>YES</u> |
| 3. Does the State "Prevention of Significant Deterioration" (PSD)
requirement apply to this source? If yes, see Sections VI and VII. | <u>YES</u> |
| 4. Do "Standards of Performance for New Stationary Sources" (NSPS)
apply to this source? | <u>YES</u> |
| 5. Do "National Emission Standards for Hazardous Air Pollutants"
(NESHAP) apply to this source? | <u>NO</u> |
| H. Do "Reasonably Available Control Technology" (RACT) requirements apply
to this source? | <u>NO</u> |

- a. If yes, for what pollutants? _____
- b. If yes, in addition to the information required in this form,
 any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justifi-
 cation for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable: N/A

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 42,500 lb/hr MSW total (21,250 lb/hr each)

2. Product Weight (lbs/hr): 136,000 lb/hr total steam (68,000 lb/hr per unit)

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

FOR EACH UNIT - SEE ATTACHMENT B

Name of Contaminant	Emission ¹		Allowed Emission ² Rate per Rule 17-2	Allowable ³ Emission lbs/hr	Potential ⁴ Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/	T/yr	
Particulate Matter	6.76	29.5	0.03 gr/dscf*	6.76	676	2962	
SO ₂	35.8	157			35.8	157	
CO	38.0	167			38.0	167	
NO _x	25.6	112			25.6	112	
HC	2.1	9			2.1	9	
Pb	0.041	0.18			4.23	18.5	

¹See Section V, Item 2.

²Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

³Calculated from operating rate and applicable standard.

⁴Emission, if source operated without control (See Section V, Item 3).

*Per permit conditions AC-03-84703 and AC-03-84704.

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Electrostatic Precipitator	particulate/lead	99+	1 to 20 microns	manufacture guarantee
Environmental Elements Corp.				and stack test 6/87.

E. Fuels FOR EACH UNIT

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Municipal Solid Waste	21,250	23,375	95.6
Wood Waste and Bark	--	9,201	48.2
NO. 2 Fuel Oil	Start-up & Shutdown 200 gph		30

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

Percent Sulfur: 0.16 Percent Ash: 27.58
 Density: N/A lbs/gal Typical Percent Nitrogen: 0
 Heat Capacity: 4500 BTU/lb N/A BTU/gal

Other Fuel Contaminants (which may cause air pollution): Primary fuel is MSW. Small quantities of lead are present. No hazardous waste will be accepted for burning.

F. If applicable, indicate the percent of fuel used for space heating. N/A

Annual Average _____ Maximum _____

G. Indicate liquid or solid wastes generated and method of disposal.

Bottom ash and fly ash are comingled and transported to Bay County landfill. All sanitary waste water, boiler blowdown, building washdown, and some cooling tower blowdown flow through the sanitary sewer to the Bay County Sewage Treatment Plant.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 2 flues, 1 stack, 125 ft. Stack Diameter: 4.5 ft.
 Gas Flow Rate: 54,800 ACFM 26,300 DSCFM Gas Exit Temperature: 435 °F.
 Water Vapor Content: 16 % Velocity: 66 FPS

SECTION IV: INCINERATOR INFORMATION

PER UNIT

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq. & Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated	638	--3	188--	17425			
Uncontrolled (lbs/hr)	---	372 lb/hr	max ---	---			

Description of Waste MSW occasionally supplemented by wood waste
 Total Weight Incinerated (lbs/hr) 21,250 per unit Design Capacity (lbs/hr) 21,250 per unit
 Approximate Number of Hours of Operation per day 24 day/wk 7 wks/yr. 52
 Manufacturer Westinghouse/O'Connor Corporation
 Date Constructed 1986 Model No. RC-120 (two units)

N/A	Volume (ft) ³	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: 125 ft. Stack Diameter: 4.5 ft each flue Stack Temp. 435°
 Gas Flow Rate: 54,800 ACFM 26,300 DSCFM* Velocity: 66 FPS

*IF 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: Cyclone Wet Scrubber Afterburner
 Other (specify) ESP

Brief description of operating characteristics of control devices: Electrostatic precipitator with approximately 99+% particulate emission removal efficiency and designed to meet 0.02 gr/dscf corrected to 12% CO₂ and guaranteed to meet 0.03 gr/dscf corrected to 12% CO₂.

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

Bottom ash and fly ash are co-mingled and transported to Bay County landfill. All sanitary wastewater, boiler blowdown, building washdown, and some cooling tower blowdown flow into the sanitary sewer and are treated in the Bay County Sewage Treatment plant.

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]
SEE ATTACHMENT C
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
SEE ATTACHMENT B
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
SEE ATTACHMENT D
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)
SEE ATTACHMENT J
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).
SEE ATTACHMENTS D AND E
6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
SEE ATTACHMENT F
7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
SEE ATTACHMENT G
8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.
SEE ATTACHMENT G

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation. Check for \$1000 (\$500 per combustor/boiler) to be submitted later.
10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit. Previously submitted application for "Operation Permit" to district office in October 1987.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

- A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

Yes No

Contaminant	Rate or Concentration
Particulate Matter	0.08 grams per dscf, corrected to 12%
	CO ₂ from 40 CFR Part 60.52

- B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

Yes No

Contaminant	Rate or Concentration

- C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration
Particulate Matter	0.03 gr/dscf, corrected to 12% CO ₂
CO	38.0 lb/hr
NO _x	25.6 lb/hr
SO ₂	35.8 lb/hr

- D. Describe the existing control and treatment technology (if any).

- | | |
|---------------------------------|--|
| 1. Control Device/System: ESP's | 2. Operating Principles: electrostatic precipitation |
| 3. Efficiency: * 99+% | 4. Capital Costs: \$1,046,000 |

*Explain method of determining Stack Test 6/87, see Attachment 3.

- 5. Useful Life: 20 years
- 7. Energy: 60 kw
- 9. Emissions: Less than 0.03 gr/dscf

- 6. Operating Costs: \$30,000/yr
- 8. Maintenance Cost: \$30,000/yr

Contaminant	Rate or Concentration
Particulate Matter	Less than 0.03 gr/dscf
Lead	0.041 lb/hr
Visible Emissions	Less than 10% opacity and up to 20% for 3 minutes in any hour according to permit conditions

10. Stack Parameters

- a. Height: 125 ft, 2 flues ft.
- b. Diameter: 4.5 ft.
- c. Flow Rate: 54,800 ACFM
- d. Temperature: 435 °F.
- e. Velocity: 66 FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary). See BACT analysis as provided as Attachment E.

1.

- a. Control Device:
- b. Operating Principles:
- c. Efficiency:¹
- d. Capital Cost:
- e. Useful Life:
- f. Operating Cost:
- g. Energy:²
- h. Maintenance Cost:
- i. Availability of construction materials and process chemicals:
- j. Applicability to manufacturing processes:
- k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

- a. Control Device:
- b. Operating Principles:
- c. Efficiency:¹
- d. Capital Cost:
- e. Useful Life:
- f. Operating Cost:
- g. Energy:²
- h. Maintenance Cost:
- i. Availability of construction materials and process chemicals:

¹Explain method of determining efficiency.

²Energy to be reported in units of electrical power - KWH design rate.

- j. Applicability to manufacturing processes:
- k. Ability to construct with control device, install in available space, and operate within proposed levels:

- 3.
- a. Control Device:
 - b. Operating Principles:
 - c. Efficiency:¹
 - d. Capital Cost:
 - e. Useful Life:
 - f. Operating Cost:
 - g. Energy:²
 - h. Maintenance Cost:
 - i. Availability of construction materials and process chemicals:
 - j. Applicability to manufacturing processes:
 - k. Ability to construct with control device, install in available space, and operate within proposed levels:

- 4.
- a. Control Device:
 - b. Operating Principles:
 - c. Efficiency:¹
 - d. Capital Costs:
 - e. Useful Life:
 - f. Operating Cost:
 - g. Energy:²
 - h. Maintenance Cost:
 - i. Availability of construction materials and process chemicals:
 - j. Applicability to manufacturing processes:
 - k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

- 1. Control Device:
- 2. Efficiency:¹
- 3. Capital Cost:
- 4. Useful Life:
- 5. Operating Cost:
- 6. Energy:²
- 7. Maintenance Cost:
- 8. Manufacturer:
- 9. Other locations where employed on similar processes:
- a. (1) Company:
- (2) Mailing Address:
- (3) City:
- (4) State:

¹Explain method of determining efficiency.

²Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:¹

Contaminant

Rate or Concentration

(8) Process Rate:¹

b. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:¹

Contaminant

Rate or Concentration

(8) Process Rate:¹

10. Reason for selection and description of systems:

¹Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data No preconstruction monitoring was required.

1. _____ no. sites _____ TSP _____ () SO₂* _____ Wind spd/dir

Period of Monitoring _____ / _____ / _____ to _____ / _____ / _____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

*Specify bubbler (B) or continuous (C).

2. Instrumentation, Field and Laboratory

- a. Was instrumentation EPA referenced or its equivalent? Yes No
- b. Was instrumentation calibrated in accordance with Department procedures?
 Yes No Unknown

B. Meteorological Data Used for Air Quality Modeling See Attachment H.

- 1. _____ Year(s) of data from _____ / _____ / _____ to _____ / _____ / _____
month day year month day year
- 2. Surface data obtained from (location) _____
- 3. Upper air (mixing height) data obtained from (location) _____
- 4. Stability wind rose (STAR) data obtained from (location) _____

C. Computer Models Used See Attachment H.

- 1. _____ Modified? If yes, attach description.
- 2. _____ Modified? If yes, attach description.
- 3. _____ Modified? If yes, attach description.
- 4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
TSP	_____ NA _____ grams/sec
SO ₂	_____ _____ grams/sec

E. Emission Data Used in Modeling See Attachment H.

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review. See Attachment H.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources. See Attachment E.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology. See Attachment E.

ATTACHMENT B-1

BAY COUNTY, FLORIDA WASTE-TO-ENERGY FACILITY
AIR EMISSION TESTS

DAVID S. BEACHLER, JILL WELDON, D. MICK POMPELIA
WESTINGHOUSE ELECTRIC CORPORATION
RESOURCE ENERGY SYSTEMS DIVISION (RESO)
PITTSBURGH, PA 15221

Air emissions were measured at the Bay County Waste-to-Energy Plant in Panama City, Florida. Concentrations for particulate and gaseous emissions were measured using test methods established by the U.S. Environmental Protection Agency (EPA) or by using continuous emission monitors.

The Bay County Facility is a 510-ton per day facility that uses two Westinghouse-O'Connor combustors and boiler trains to recover energy to generate approximately 11.5 MW of electricity. Each water-walled rotary combustor is designed to mass burn 255 tons of municipal solid waste (MSW) per day or a mixture of MSW and wood chips.

The plant began burning MSW during the spring of 1987. Emission compliance tests conducted in May and June, 1987 showed that the facility met the permit requirements of the Florida Department of Environmental Regulations.

Introduction

The Bay County Resource Management Center is located 10 miles Northeast of Panama City, Florida. Panama City is a resort community approximately 100 miles east of Pensacola, Florida, on the northwest coast of Florida's panhandle. The average population of this area is approximately 115,000. The average quantity of municipal solid (MSW) waste generated in Bay County during most of the year is 300 tons per day. However, during the summer months when the population increases to more than 150,000, the community must handle in excess of 350 tons of MSW per day. The County decided to design the facility to ultimately burn 510 tons of MSW to allow additional waste to be processed as the population and quantity of waste increased.

The facility began initial start-up equipment check-out, and instrument calibration in February 1987. Equipment start-up and adjustment was done from February through May. Emission testing was conducted from late April through early June. The emission compliance tests were completed on June 4-5, 1987. The facility acceptance test and emission compliance test were completed five months ahead of the original projected schedule.

Facility Description

The Bay County Resource Management Facility uses two Westinghouse-O'Connor water-walled rotary combustors to mass burn up to 510 tons per day of MSW. The combustors can also burn a mixture of MSW and wood waste. Heat generated by the combustion of waste produces steam to drive a turbine generator. A process flow diagram of the Bay County facility is shown in Figure 1.

The plant consists of two combustor/boiler units, a turbine-generator, a truck scale, tipping floor, front end loaders, conveyors, air emission control equipment, a stack, ash handling equipment, a central control room, and all required ancillary equipment. The facility also includes administration offices, change rooms, parking areas, roadways, and security fencing.

All MSW received at the plant enters through an automatic gate system and is unloaded on the tipping floor. Solid waste collection vehicles hauling the material to be processed are weighed at the scale prior to entering the plant and are then directed to a specific bay on the tipping floor. The weight is automatically entered into a computer system that records and files all pertinent data for each transaction. The vehicles enter the designated bay and discharge their load on the floor. The tipping floor accommodates approximately 1500 tons of waste while allowing room for maneuvering the incoming trucks and front end loaders.

A man-operated front-end loader disperses MSW on the tipping floor to separate large and unprocessable objects. Large items are separated from MSW; the large combustible items are processed through a shear shredder; the large noncombustible items are removed and stored temporarily for landfill disposal. After sorting, the MSW is thoroughly mixed and then pushed onto the horizontal apron conveyor by the front-end loader. The horizontal apron conveyor transfers the MSW to the inclined apron conveyor and then into the combustor charging chute. The inclined apron conveyor contains a weigh scale that continuously measures the weight of MSW being fed into the charging hopper. When one line of apron feed conveyors is