

3 18 88  
Pittsburg, PA



Westinghouse  
Electric Corporation

Resource Energy Systems  
Division

Cost Building  
2400 Ardmore Boulevard  
Pittsburg, Pennsylvania 15221  
(412) 636-5800  
WIN 261 5300

ENG/MG:DSB:88-049

March 17, 1988

RECEIVED

MAR 21 1988

DER-BAQM

Mr. Clair Fancy  
Florida Department of  
Environmental Regulation  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, FL 32399

RE: Bay County Waste-to-Energy Facility  
Request for Permit Modification

Dear Clair,

Please find enclosed four copies of the additional information that you requested in your March 7, 1988 letter.

Thank you for your expeditious review of this application.

Should you have any questions regarding this matter, please don't hesitate to call.

Sincerely,

D. S. Beachler, Manager  
Environmental and Quality Engineering

Enclosures

cc: S. J. Brady  
J. J. Zebroski

/kjd  
0751MM-EN01:20

Copied: Pradeep Raval } 3-22-88  
Barry Andrews }  
Tom Rogers }  
CHF1BT

**COMMENT:**

The emissions of the PSD regulated pollutants sulfuric acid mist and fluorides need to be addressed. In addition, all toxic air pollutants need to be addressed with respect to the proposed control technology. For municipal waste combustors, the toxic air pollutants are identified in the publications entitled: "Compiling Air Toxics Emission Inventories," EPA-450/4-86-010, and "Control Technologies for Hazardous Air Pollutants," EPA-625/6-86-014. In accordance with these publications, the pollutants cadmium, chromium, copper, manganese, nickel and polycyclic organic matter need to be addressed.

**RESPONSE:**

The increase in H<sub>2</sub>SO<sub>4</sub> and HF emissions resulting from the increased processing rate will be 4 tons/yr and 0.4 tons/yr respectively (see Table A below).

TABLE A

ESTIMATED ANNUAL H<sub>2</sub>SO<sub>4</sub> AND HF EMISSIONS USING 1987 DEVELOPED EMISSION FACTORS

Pollutant	Emission Factor (Wood Chips)	Emission Factor (MSW)	Annual Emissions (tons/year)		Difference tons/year
			Based on 350 TPD (MSW) 135 TPD Wood	Based on 510 TPD (MSW)	
H <sub>2</sub> SO <sub>4</sub>	0	0.14 lb/ton	9	13	4
HF	0	0.014 lb/ton	0.9	1.3	0.4

Because metals are present in solid waste, some metals will be emitted in the flue gas from the facility. The amount emitted is a function of the quantity of metal in the waste stream, the properties of the metal, the combustion characteristics of the facility, and the characteristics and performance of the air pollution control equipment.

A significant portion of most metals vaporizes during combustion. As the exhaust gases cool (during heat recovery, in the ducting, and in air pollution control devices), many of the metals condense. Usually the condensed metals

adsorb onto the surface of particles in the gas stream and are collected by the ESP. It should be noted that mercury and mercury compounds are an exception to this rule because they exist predominantly as a vapor at common stack exit temperatures.

The estimated control efficiency for trace heavy metals is given as a range in Table B because there is a limited data base available concerning the capture of heavy metals in ESP's on resource recovery facilities. The bottom end of the range, a particulate emission control efficiency of 98.5%, represents efficiencies that have been achieved by ESP's installed on many industrial processes. The top end of the range (99%) represents a particulate emission control efficiency based on meeting a guaranteed emission limit of 0.03 gr/dscf @ 7% O<sub>2</sub> with an assumed inlet of 3.0 gr/dscf. Individual control efficiencies for certain metals may be somewhat less than the 99% level. However, since the proposed facility will be designed to achieve a guaranteed outlet grain loading of 0.030 gr/dscf corrected to 12% CO<sub>2</sub>, the actual particulate emission control efficiency should be higher than 99% (assuming an inlet loading of 3.0 gr/dscf).

Table B lists the heavy metal emission factors from typical waste-to-energy plants. Factors used to predict uncontrolled emission (Column 1) are based on test data from the O'Connor combustor installed in Gallatin, Tennessee. Tests were conducted by Cooper Engineers from February 6-12, 1983. The proposed controlled emission factors (Column 2) are based on a system collection efficiency range of 98.5 to 99%.

The bottom end of the proposed emission factor range for total chromium is  $1.94 \times 10^{-4}$  lb/ton. This emission factor is estimated from reviewing a number of sources--various consultants' data bases including Roy F. Weston, Inc., a paper presented by Wurmbrand and Atkins that lists the proposed emission factors for seven resource recovery projects in Connecticut, and the proposed emission factors in other states including projects in California. Hexavalent chromium (Cr<sup>+6</sup>) is estimated to be approximately 10% of the total chromium value. This estimate is based on tests from a utility boiler showing the contribution of Cr<sup>+6</sup> to be 1% of the total chromium and tests from a cement kiln showing the contribution to be as high as 10%.

TABLE B  
EMISSION FACTORS FOR HEAVY METALS

<u>Pollutant</u>	<u>Uncontrolled Emission<sup>(1)</sup> Factor (lb/ton MSW burned)</u>	<u>Typical<sup>(2)</sup> Emission Factor Range (lb/ton MSW burned)</u>
As	$3.18 \times 10^{-3}$	$4.77 \times 10^{-5} - 3.18 \times 10^{-5}$
Be	$4.8 \times 10^{-5}$	$7.20 \times 10^{-7} - 4.8 \times 10^{-7}$
Cd	$2.36 \times 10^{-2}$	$3.54 \times 10^{-4} - 2.36 \times 10^{-4}$
Cr	$7.86 \times 10^{-3}$	$1.18 \times 10^{-4} - 1.94 \times 10^{-4(4)}$
Cr <sup>+6</sup>	$7.86 \times 10^{-4}$	$1.18 \times 10^{-5} - 1.94 \times 10^{-5}$
Ni	$3.32 \times 10^{-4}$	$4.98 \times 10^{-6} - 3.32 \times 10^{-6}$
Cu	$3.37 \times 10^{-2}$	$5.05 \times 10^{-4} - 3.37 \times 10^{-4}$
Hg	$1.71 \times 10^{-3}$	$1.71 \times 10^{-3(3)}$
Mn	$6.04 \times 10^{-2}$	$9.06 \times 10^{-4} - 6.04 \times 10^{-4}$
Se	$1.44 \times 10^{-4}$	$2.16 \times 10^{-6} - 1.44 \times 10^{-6}$
Sn	$3.10 \times 10^{-2}$	$4.65 \times 10^{-4} - 3.10 \times 10^{-4}$
Vn	$1.36 \times 10^{-2}$	$2.04 \times 10^{-4} - 1.36 \times 10^{-4}$
Zn	$8.31 \times 10^{-1}$	$1.25 \times 10^{-2} - 8.31 \times 10^{-3}$
Pb	$2.74 \times 10^{-1}$	$4.11 \times 10^{-3} - 2.74 \times 10^{-3}$

(1) Uncontrolled metal emissions based on Gallatin test data.

(2) Control efficiency for heavy metals is estimated to range from 98.5% to 99%.

(3) Hg control estimated to be zero.

(4) Emission data for Cr in literature shows that the average controlled emissions are approximately  $1.94 \times 10^{-4}$  lb/ton and therefore the 99% control efficiency does not apply.

A number of polycyclic organic matter (POM) compounds are emitted in trace amounts from the facility; these include dioxins (PCDD), furans (PCDF), polynuclear aromatic hydrocarbons (PAH), and aldehydes (RCHO). A limited amount of testing has been conducted to measure PAH compounds and aldehydes. This test data is given in Tables 5-8 and 5-9, that were extracted from a report prepared for Westinghouse for the proposed Delaware County Resource Recovery Facility.

More testing to measure dioxins and furans has been conducted at resource recovery facilities. Testing has been done at a number of modern facilities that use automatic combustion controls to minimize formation of organic compounds (dioxins and furans) along with ESP's that collect organic compounds that have condensed on fly ash particles. This equipment is similar to that installed at the Bay County facility. Table 5-1 contains total PCDD emissions from a number of facilities throughout the world. The plants at Westchester, Tulsa, Pittsfield, Chicago N.W., Zurich, North Andover, and Sangus all use ESP's as the add-on air pollution control equipment

Table 5-9

Standardized Aldehydes Data and Calculated Emission Factors  
( $\mu\text{g}/\text{Nm}^3$  at 12 percent  $\text{CO}_2$ , dry)

Facility	Results for Tests					Average
	1	2	3	4	5	
Cattaraugus, New York <sup>a</sup>	684.8					684.8
Oneida, New York	419.9					419.9
Westchester, New York	959.4	421.8	546.8			642.7
<u>All Facilities<sup>b</sup></u>						
Geometric Mean						569.6
Plus One Standard Deviation						743.21
Minus One Standard Deviation						436.6

<sup>a</sup>Modular unit.<sup>b</sup>Mass burn (excess air and modular) facilities with data available.

Table 5-8

Standardized PAH Data and Calculated Emission Factors  
( $\mu\text{g}/\text{Nm}^3$  at 12 percent  $\text{CO}_2$ , dry)

Facility	Results for Tests						Average
	1	2	3	4	5	6	
<u>Cattaraugus, New York</u>							
<sup>c</sup> B(a)P	1.03						1.03
Total Carcinogens							1.03
<u>Hogdalen, Sweden</u>							
PAH <sup>d</sup>	0.04						0.04
Total Carcinogens							0.04
<u>Prince Edward Island, Canada<sup>c</sup></u>							
B(a)A	0.227	0.246	0.060				0.18
DBA	0.020	0 <sup>b</sup>	0.006				0.01
Ind	0.054	0 <sup>b</sup>	0.008				0.03
B (k, j) F & B(a)P	0.127	0.451	0.122				0.23
Total Carcinogens							0.45
<u>Quebec City, Canada</u>							
PAH <sup>d</sup>	0.108	0.139	0.122	0.015	0.121	0.126	0.11
Total Carcinogens							0.11
<u>All Facilities<sup>e</sup></u>							
Total Carcinogens:							
Geometric Mean							0.21
Plus One Standard Deviation (Geometric)							0.33
Minus One Standard Deviation (Geometric)							0.14

<sup>a</sup>(Ba)P - benzo(a)pyrene

DBA - dibenzo (a,h) anthracene

B(a)A - benzo(a) anthracene

Ind - Indeno(1,2,3-cd)pyrene

B(k,j)F-benzo(k,j) fluoranthene

<sup>b</sup>Value was below detection limit. It was not included in calculation of average value.

<sup>c</sup>Modular unit.

<sup>d</sup>For the purpose of this analysis it is assumed to be entirely B(a)P.

<sup>e</sup>Mass burn (excess air and modular) facilities with data available, excluding facilities with abnormal operations during testing.

**BEST AVAILABLE COPY**

WORLDWIDE PCB EMISSIONS DATA BY FACILITY TYPE  
(Tetra thru Octa Homologues)

(ng/Nm<sup>3</sup> @12% CO<sub>2</sub> ,dry)

Facility	Country	A	B	C	D	E
		All Data	Plants with Heat Recovery	Plants with Normal Conditions During Testing	Mass Burn Facilities	Mass Burn Excess Air Facilities >50 IPD
Montreal (Des Carrieres)	Canada	<1	<1	-----	-----	-----
Marion County	USA	1.3	1.3	1.3	1.3	1.3
Stockholm-Hogdalen	Sweden	6.5	6.5	6.5	6.5	6.5
Tulsa County	USA	22	22	22	22	22
Westchester RESCO	USA	24	24	24	24	24
Wurzburg	FRG	25	25	25	25	25
Pittsfield (Vicon)	USA	36	36	36	36	36
Chicago, N.W	USA	47	47	47	47	47
Stapelfeld (b)	FRG	65	65	65	65	65
Cattaraugus	USA	67	67	67	67	-----
Eksjo RDF	Sweden	75	75	75	-----	-----
Prince Edward Island (PEI)	Canada	107	107	107	107	-----
North Andover	USA	122	122	122	122	122
Oneida	USA	135	135	135	135	-----
Stellinger Moor (b)	FRG	140	140	140	140	140
Zurich	Switzerland	171	171	171	171	171
Saugus	USA	182	182	182	182	182
Borsigstrasse (b)	FRG	185	185	185	185	185
Alhany RDF (Sheridan Ave)	USA	305	305	305	-----	-----
Valmadrera	Italy	314	-----	-----	-----	-----
Italy 1	Italy	516	-----	-----	-----	-----
Toronto	Canada	612	-----	-----	-----	-----
Italy 6	Italy	675	-----	-----	-----	-----
Italy 5	Italy	746	-----	-----	-----	-----
Niagara RDF (Occidental Chemical Co)	USA	853	853	853	-----	-----
Zaanstad	Netherlands	1294	-----	-----	-----	-----
Hamilton/Wentworth SHARU	Canada	3141	3141	-----	-----	-----
Philadelphia, N.W.	USA	3350	-----	-----	-----	-----
Italy 4	Italy	5003	-----	-----	-----	-----
Italy 3	Italy	8622	-----	-----	-----	-----
Hampton (Langley Field)	USA	11138	11138	-----	-----	-----
Italy 2	Italy	33047	-----	-----	-----	-----

<sup>a</sup>Based on data collected as of June 1, 1987.

<sup>b</sup>Includes tri thru octa homologues.



COMMENT:

A cost estimate for using a dry injection system to remove acid gases needs to be included. A review of other facilities indicates that the 500 TPD Katy Seghers refuse-to-energy facility in Clearfield, Utah utilizes the dry injection control technology in conjunction with an ESP to remove SO<sub>2</sub> and HCl with 50 percent efficiency.

RESPONSE:

According to the Utah Department of Health's Bureau of Air Quality, the Katy Seghers facility has not been able to meet the 50% acid gas removal permit limitation. The facility has also not been able to meet the 0.025 gr/dscf particulate emission limitation. The dry injection system is experiencing severe plugging problems and is causing upsets in the operation of the facility.

Westinghouse has contacted a vendor that supplies dry injection systems used to control acid gas emissions. In dry injection systems where an ESP is used for controlling particulate matter and spent sorbent, the acid gas reaction must occur in a very short time period. In addition, the operating temperature of the ESP is generally greater than 430°F. Because the reaction time is short and the temperature for acid gas absorption is high, the predicted acid gas control levels are approximately 20% to 40% for HCl and 20% for SO<sub>2</sub>. The vendor indicated that an injection rate of approximately 1000 lb per hour (500 lb/train) of hydrated lime would be needed to achieve 20% SO<sub>2</sub> and 40% HCl removal.

The following tables illustrate the estimated capital costs, operating and maintenance costs, lost revenue and equivalent uniform annual cost (EUAC) for retrofitting a dry injection system. The lime use was estimated to be 1000 lb/hr at an annual cost of \$328,000. The amount of residue produced (unreacted reagent and reacted salts) is estimated to be 6000 tons per year. This reflects an increase in disposal cost of \$120,000.

TABLE 1  
ADD-ON DRY INJECTION SYSTEM CAPITAL COST ESTIMATE

Capital Cost:	\$ 800,000	-	Spray Dryers
	<u>\$ 475,000</u>	-	Drag Conveyors
TOTAL:	\$1,275,000		

Cost Breakdown Includes:

- Engineering
- Foundations and Supports
- 2 Rotary Screw Feeders
- Mixing Vanes
- 2 Drag Conveyors
- Lime Storage Silo
- Shipping to the Site
- Installation
- Start-up Services

TABLE 2  
ANNUAL OPERATING AND MAINTENANCE COST

	<u>Each Train</u>	<u>Cost</u>	<u>Cost per Year For Both Trains</u>
Lime	500 lb/hr	\$75/ton	\$328,500
Power for Rotary Feeder	30 kw	\$0.05/kwh	\$ 26,280
Power for Delta P (fan cost)	Delta P=2.0 in H <sub>2</sub> O (see below) Gas Flow-55,000 acfm for each unit (@ 0.05/kwh)		\$ 17,400

63,958

$$\text{Fan Power} = Q \times \frac{0.7456}{6356 \times E} \times \text{Delta P} \times H$$

- where: P = fan power (kwh)  
 Q = gas volume (acfm)  
 E = fan efficiency (assumed 0.65)  
 Delta P = pressure drop  
 H = annual operating rate (8760 hr/yr)

Water Cost	\$ - 0 -
Routine Maintenance 220 hr per injection system @ \$20/hr	\$ 8,800
Spare Parts	\$ 10,000
Increase Disposal Costs 6000 tpy Residue @ \$20/ton	\$120,000
<b>TOTAL:</b>	<b>\$510,980</b>

23,264

**TABLE 3**  
**LOST REVENUES BECAUSE OF PLANT SHUTDOWN**  
**DURING DRY INJECTION SYSTEM INSTALLATION**

Assume: 4 weeks shutdown per train

Lost Electrical Revenue:	\$ 403,200
By-Pass Waste Costs:	\$ <u>98,000</u>
(350 TPD x 28 days x \$10/ton)	
	\$ 501,200

**TABLE 4**  
**EQUIVALENT UNIFORM ANNUAL COST (EUAC) FOR**  
**ADDITION OF A DRY INJECTION SYSTEM**  
*(i=10%, N=20 yrs)*

Capital Cost:	\$1,275,000	(Table 1)
Lost Revenue:	<u>\$ 501,200</u>	(Table 8)
Total Cost:	\$1,776,200	

Operation & Maintenance: \$ 510,890 (Table 2)

EUAC = \$1,776,200 (A/P, 10%, 20) + \$510,980  
 EUAC = \$ 719,684

*149,702*

The additional annual SO<sub>2</sub> emissions that would be emitted when burning 510 TPD MSW instead of burning 350 TPD MSW would be a maximum of 90 tons. EPA or other State Agencies have not required any W-T-E facilities to retrofit their plants with acid gas control equipment. The high capital cost (\$1,275,000), lost revenue (\$501,000), annual operating cost (\$510,980) and high EUAC (\$719,684) for retrofitting a dry injection system cannot be justified for removing a small incremental amount of SO<sub>2</sub> (90 tons per year) and HCl (170 tons per year), that would be emitted if the facility were permitted at the original design capacity. In addition, the dry injection system with its low removal efficiency and its lack of known operational success when placed in front of an ESP should not be considered as BACT. Therefore, BACT for this facility should be the same as approved by the Florida DER in 1984, and no add-on acid gas control equipment should be required.

**COMMENT:**

Although the emissions data for HCl appears to be complete, please verify the accuracy of the emission limit expressed in both pounds per ton and tons per year.

**RESPONSE:**

The emission factor for HCl should be corrected to 5.8 lb HCl/ton of MSW (instead of 0.58 lb/ton). The resulting annual HCl emissions would be 370 tons and 540 tons when processing 350 TPD and 510 TPD of MSW, respectively. This reflects a yearly increase in HCl emissions of 170 tons.

# Board of County Commissioners

## Bay County

POST OFFICE BOX 1818  
PANAMA CITY, FLORIDA 32402  
PHONE: (904) 784-4000



RECEIVED

JUN 10 1988

DER-BAQM

June 9, 1988

- COMMISSIONERS:
- JOHN B. HUTT, JR.  
DISTRICT I
  - RALPH BURGESS  
DISTRICT II
  - S. RICHARD SELTZER  
DISTRICT III
  - HAROLD T. PHILLIPS  
DISTRICT IV
  - TOMMY LOFTIN  
DISTRICT V

Mr. C. H. Fancy, P.E.  
Deputy Chief  
Bureau of Air Quality Management  
Twin Towers Office Building  
Florida Department of Environmental Regulation  
2600 Blair Stone Road  
Tallahassee, FL 32399-2400

Re: Permits

Dear Mr. Fancy:

The purpose of this letter is to set forth the reasons that the Board of County Commissioners of Bay County ("the Board") believes that the State of Florida Department of Environmental Regulation ("DER") should issue the necessary operational permits to allow the Bay Resource Management Center ("the Facility") to operate at its designed capacity of 510 tons per day of municipal solid waste ("MSW").

The Board has a long history of administrative proceedings, consent orders and enforcement action with regard to the inadequacy of the Board's landfill to dispose of MSW generated in Bay County. Because of the substantial numbers of bays, bayous, creeks, inlets and marsh areas, the County has a high water table which combined with a geology favoring the formation of limestone sink holes, and a large public potable surface water supply in the form of Deerpoint Lake, the Board was unable to locate an adequate site for a new landfill. The efforts of the Board to locate a site spawned numerous citizens groups all opposing the various proposed sites and resulted in several formal administrative hearings involving the Board, DER and citizens groups.

While the County was experiencing problems with its existing landfill, the Florida Legislature developed a legislative policy that designated 19 counties in Florida as having a responsibility for developing a comprehensive solid waste resource recovery and management program that included consideration of incinerators, particularly those able to provide service on a regional basis. (See Fla. Admin. Code Rule §17-7.020(16)) Bay County was the least populated of the 19 counties and was also located in the most economically depressed area of the State. Through a government

grant, the County was able to obtain the necessary funds to do a preliminary feasibility study which concluded that incineration was the best course for the Board to pursue. (Municipal Solid Waste to Energy, Feasibility for Bay County, Florida, dated September 22, 1981, prepared by Stock Equipment Company, a unit of General Signal)

While the public at large was generally opposed to landfills, there was a general public acceptance of the concept of incineration including the formation of a citizens group named PIC for "Protect, Incinerate and Conserve". Because of the Board's desire to plan for the future growth of the County, to provide an opportunity for service on a regional basis and in order to secure better project economics, the Board contracted with Westinghouse Electric Corporation ("Westinghouse") for the development of a two train (each train having a capacity of 255 tons per day), 510 ton per day incinerator named the Bay Resource Management Center.

The feasibility studies with regard to the Facility contemplated that the initial needs of Bay County itself would be approximately 350 tons per day and that the additional capacity of 160 tons per day would be available for use by other counties until Bay County's needs had increased. Because definitive contracts were not in place with other counties, the feasibility of the Facility was further based on a supplementation of MSW by waste wood which was plentiful in area forest lands.

The Board has paid Westinghouse for a 510 ton per day Facility for which Westinghouse has the responsibility for obtaining appropriate environmental permits. Westinghouse was advised by DER that the only permits that could be obtained were permits based upon the actual projected start-up use of the Facility and not on projected future uses of the Facility. Therefore, the initial operational permits were for a capacity of 350 tons per day of MSW with the balance being waste wood. The Board and Westinghouse always contemplated that DER would increase the operational permit as the amount of MSW processed by the Facility increased.

As stated above, public acceptance of the concept of incineration and the Facility in particular has generally been good with the exception of public complaints with regard to cost. While the public appears willing to pay the cost of incineration as a preferable method of disposing of MSW, the cost is substantially more than the cost of running an inadequate, non-permitted landfill and therefore the Board has been under public pressure to clearly account for the cost of the Facility.

One item that has received considerable focus is the cost of purchasing waste wood to supplement the MSW so that the Facility can run at its designed capacity of 510 tons per day. Even though the Facility is economically better off to burn waste wood and generate the additional electricity produced thereby and sell that electricity to Florida Power Company, it is obvious to the public that the County would be much better off if it could avoid

paying for waste wood and instead be paid to dispose of MSW. Since all surrounding counties have inadequate landfills and there is in general no shortage of MSW, the Board and the public believe that the excess capacity of the Facility should be filled with MSW.

Of course, Secretary Twachtman has shared this view and has encouraged surrounding counties to use the Facility but to date, the Board has not been in a position to finalize any arrangements for additional MSW because of a concern about the permitted capacity of the Facility.

Also, as DER is aware, Bay County is a substantial tourist destination and during the summer months the population of the area and consequently the MSW produced increases substantially. Therefore, even without securing MSW from surrounding areas, during the summer months the County will approach or perhaps even exceed 350 tons per day of MSW processed through the Facility.

Thus the failure of DER to issue the 510 ton per day operation permit is costing the public of Bay County and increasing their concern about the cost of incineration.

In addition, DER has also raised the possibility that before issuing the permit to use the Facility up to its designed capacity for the disposal of MSW, additional expensive equipment in the form of acid gas scrubbers should be added to the Facility.

Of course, this only further compounds the cost associated with incineration. The contract between the Board and Westinghouse provides that if there are changes in law, regulation or policy after August 1, 1984, the expense of making such additions to the Facility will be borne by the County rather than by Westinghouse.

Westinghouse has estimated that the cost of adding the acid gas scrubbers and other equipment (including all direct or indirect costs) suggested by DER would be in the range of \$11,328,500 including 176 day shutdown period for required retrofitting and that this would be an expense of the Board and not Westinghouse. This obviously has a substantial negative impact on the County.

As with most public bodies, the method Bay County would use to pay for the costs of retrofitting the incinerator would be to borrow additional money. Bay County presently has outstanding a \$60,000,000 uninsured bond issue that is secured solely by the revenues of the solid waste system. Although we do not know for certain, it is doubtful that the revenues of the System are sufficient to secure additional parity bonds or even junior in lien bonds in the amount necessary to finance the retrofitting expenses.

Actually, estimates of the cost of (i) not allowing the processing of additional MSW (approximately 50,000 tons per year) in lieu of waste wood cost the public of Bay County an additional fifty



percent (50%) over the present operation and management cost (in other words, if the revenue collected from other counties is \$25 per ton and the cost of wastewood is \$12 per ton, then the additional expense of not being able to burn MSW will result in a loss of \$1,250,000 per year in out-of-county tipping fee revenues and an expense of \$600,000 per year for wastewood which translates into an additional expense of \$17 per ton to the Bay County citizens and (ii) the cost of adding acid gas scrubbers is estimated to add at least \$10 per ton to the cost of disposing of MSW at the Facility.

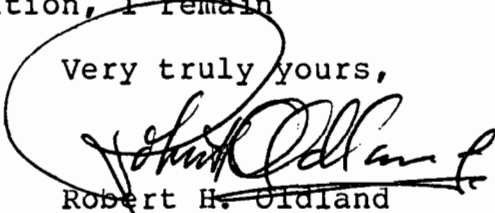
The Board does not believe that there is an adequate cost benefit ratio involved in requiring the addition of acid gas scrubbers and further believes that the Board should not be penalized for its foresight in implementing existing State policy through the development of a Facility sized for the future needs of Bay County and for interim use on a regional basis.

One final point, the Board understands that EPA is presently in the process of developing its policy with regard to pollution control devices such as acid gas scrubbers on incinerators and that this policy should be finalized in the near future. It appears to be unwise and unfair to make Bay County take some action at the present time before this final policy is established since whatever Bay County does may or may not be in compliance with the final policy. It appears to be a much wiser and sounder course to follow to issue the appropriate operational permit to Bay County at this time and then treat Bay County the same as other similarly situated when EPA's policy is finally determined.

The Board hopes that DER will agree that the 510 ton per day operational permit should be issued at the earliest possible date and will follow through to so issue the necessary permit.

Thanking you for your cooperation, I remain

Very truly yours,

  
Robert H. Oldland  
County Manager

RHO:mdg

Copies: Pradeep Rawal  
CHF  
Barry Andrews  
Tom Rogers  
Ed Middlewait  
Wayne Alanson  
Miguel Jares } 6.13.88



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

*Miller*

DEC 1 1987

DEC 7 1987  
OFFICE OF  
AIR AND RADIATION  
EPA-REGION IV  
ATLANTA, GA.

MEMORANDUM

SUBJECT: Improving New Source Review (NSR) Implementation

FROM: J. Craig Potter  
Assistant Administrator  
for Air and Radiation (ANR-443)

TO: Regional Administrator  
Regions I-X

On June 27, 1986, I established a special task force to address growing concerns about the consistency and certainty of permits issued under the Clean Air Act's prevention of significant deterioration and nonattainment area NSR programs. Based on the findings and recommendations of the task force, I am today establishing certain program initiatives designed to improve the timeliness, certainty, and effectiveness of these programs.

A great deal of effort will be required to overcome the problems which have developed, but it is my belief that these problems, with your full cooperation and assistance, can be resolved so that these essential air management programs can fulfill their intended roles. Therefore, I urge each of you to provide the maximum priority and resource commitments available to the task.

The outstanding concern we now face in these programs is inadequate implementation. The Office of Air and Radiation intends to apply its resource commitments so as to enhance its ability to provide technical support and guidance, training, workshops, auditing, and enforcement support to the Regions and delegated programs. The Regional Offices must make a corresponding resource commitment for these efforts to succeed. Accordingly, I am requesting that you initiate a self-evaluation of current NSR activities and, to the extent necessary, refocus Regional attention on these programs in an effort to improve and enhance NSR program implementation.

To ensure that we maintain the flexibility to make this effort a dynamic one, capable of sensing and adjusting to the needs of the program, I intend to establish an informal group of our colleagues to report to me on progress in implementing the initiatives discussed below. The mission of the group is to provide the feedback necessary to maximize the effectiveness of NSR implementation and to make NSR reflective of air program needs.

The following is a list of the specific program initiatives I am hereby instituting to bring about improvements in NSR implementation:

Tracking Permit Actions--Initially and until such time as permit quality can be assured, I am requiring that each Regional Office establish (if not already in place) a program to ensure a timely and comprehensive review of all State and local agency-issued major source permits and certain minor source permits. Implementation of the program will be made part of the Regional Office Management System and will require the "real time" exchange and review of information between the Regional Office and the State and local agencies when a key milestone is reached during the permitting process.

Effective communication between the permitting agency and the Regional Office is essential to improving program implementation. Therefore, the Regional Offices will need to ensure that State and local permitting agencies follow certain notification procedures such as:

- Notify the Regional Office and other affected parties (e.g., the Federal land manager if Class I areas are impacted), within a reasonable time, of the receipt of a new major source permit application. This can take the form of a complete copy of the application itself or a brief description of the proposed project. Notification can be made as each application is received or the information may be submitted to the Regional Office in a periodic report.

- Submit to the Regional Office a complete public notification package at the beginning of the public notice period. The package must contain the public notice language, the proposed permit, and a technical analysis demonstrating how the proposed project complies with the technical review requirements of the regulations [e.g., best available control technology (BACT) or lowest achievable emission rate (LAER), air quality impacts or offsets].

- Submit to the Regional Office a copy of the final preconstruction permit when issued, including a response to any appropriate comments submitted during the public comment period.

- Submit to the Regional Office a copy of the operating permit when issued.

Likewise, when informed of a permit action, the Regional Office is responsible for the timely review of the information, specifically:

- Screen incoming information on permit applications for potential issues or concerns and, if warranted, communicate them to the permitting agency.

- Perform a timely and comprehensive review of the public notice package and, if warranted, provide comment during the public comment period. To aid in this task, I have directed the Office of Air Quality

Planning and Standards (OAQPS) to start work on the development of a permit review checklist for use by the Regional Office during the public comment period. The checklist will also be useful to State and local agencies as a tool for self-audit and to understand what the Environmental Protection Agency (EPA) emphasizes when reviewing a proposed permit.

- Review any response to comments and the final permit to ensure that any outstanding concerns have been resolved satisfactorily.

- Review the permit to operate to ensure that it is consistent with the preconstruction permit.

- Take prompt and appropriate action to deter the issuance or use of permits which fail to meet minimal Federal requirements. I have directed OAQPS to work with the Office of General Counsel and the Office of Enforcement and Compliance Monitoring to develop guidance for the Regional Offices on the appropriate legal mechanisms and procedures for handling deficient permit actions.

- To the extent practicable, prior to permit issuance, review potential minor permit actions which exempt an otherwise major source or modification from a major review (e.g., "synthetic" minor sources, major sources netting out of review, and 99.9 or 249.9 tons per year sources).

The most critical element of these initiatives is the Regional Office review of proposed permit actions during the public comment period. The FY 1985 national air audit showed widespread serious permit deficiencies, many of which could have been corrected without interfering with State and local agency processing if dealt with by EPA during the public comment period. By uniformly reviewing all major source permit actions during the comment period, EPA is able to address deficient reviews or permits before the final permit is issued. This not only promotes more consistency in the permitting process among the States, but also provides the highest degree of certainty to the applicant that the permit will not be challenged by EPA at a later date. Moreover, if the permit is not reviewed and commented on prior to issuance, the possibility of successfully challenging the action is greatly diminished, as is the opportunity to improve the enforceability of the permit.

BACT Determinations--Of all the NSR processes, BACT (and LAER) determinations are perhaps the most misunderstood and the least correctly applied. The BACT alternatives, if presented by the applicant at all, are often poorly documented or biased to achieve the decision the applicant desires.

To bring consistency to the BACT process, I have authorized OAQPS to proceed with developing specific guidance on the use of the "top-down" approach to BACT. The first step in this approach is to determine, for the emission source in question, the most stringent control available for a similar or identical source or source category. If it can be shown that this level of control is technically or economically infeasible for

the source in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections. Thus, the "top-down" approach shifts the burden of proof to the applicant to justify why the proposed source is unable to apply the best technology available. It also differs from other processes in that it requires the applicant to analyze a control technology only if the applicant opposes that level of control; the other processes required a full analysis of all possible types and levels of control above the baseline case.

The "top-down" approach is essentially already required for municipal waste combustors pursuant to the June 22, 1987, Administrator's remand to Region IX of the H-Power BACT decision and the OAQPS June 26, 1987, "Operational Guidance on Control Technology for New and Modified Municipal Waste Combustors (MWC's)." It is also currently being successfully implemented by many permitting agencies and some of the Regional Offices for all sources. I have therefore determined that it should be adopted across the board.

In the interim, while OAQPS develops specific guidance on the "top-down" process, I am requesting the Regional Office to apply it to their BACT determinations and to strongly encourage State and local agencies to do likewise. Moreover, when a State agency proposes as BACT a level of control that appears to be inconsistent with the "top-down" concept, such as failure to adequately consider the more stringent control options, the Regional Office is to provide comment to that agency. A final BACT determination which still fails to reflect adequate consideration of the factors that would have been relevant using a "top-down" type of analysis shall be considered deficient by EPA.

Training—No formal training workshops specific to NSR have been held since 1980. Many State and local agencies, as well as the Regional Offices, have experienced a high rate of NSR personnel turnover since then. Many of the basic problems that are occurring in NSR implementation can be traced to the lack of comprehensive, continuing training for new Regional Office and State agency personnel.

To rectify this situation, in FY 1988, OAQPS will work on developing materials for a comprehensive training program in the form of Regional workshops to be conducted in FY 1989.

Commencing in FY 1989, biannual Headquarters-sponsored NSR workshops will be conducted at each Regional Office with State and local agencies attendance encouraged. Workshop topics will cover the NSR rules and policy, BACT and LAER determinations, effective permit writing, how to review a proposed permit and audit a permit file, and other program areas as needed. Appropriately trained Regional staff are to then hold these workshops at their respective State agencies. The NSR experts from Headquarters or NSR experts from other Regions will be available to assist.

In addition, Regional Offices should reserve the funds necessary to send at least one EPA staff representative to the NSR workshops (for EPA only) held semiannually at Denver, Colorado (February), and Southern Pines, North Carolina (July). Attendance at these workshops plays a vital role in keeping the Regions up to date on program implementation and new and emerging policy.

Policy and Guidance--Continuous litigation and regulatory changes have combined with the complexity of NSR rules to create a log jam of the policy and guidance needed to help interpret and effectively apply these rules. Therefore, I am directing that in FY 1989 OAQPS dedicate at least one staff person to ensuring a timely response to policy and guidance requests. In the interim, I intend to continue OAQPS's efforts to compile and organize NSR reference and guidance materials, such as the NSR electronic bulletin board.

I realize that the initiatives discussed above constitute only the first steps of a continuing process to address concerns and needs relating to NSR program implementation. In recognition of the possible need to maintain flexibility in managing and improving the NSR process I will, as indicated earlier, establish a group to monitor our progress under this new policy. The group will be comprised of representatives from EPA Headquarters and Regional Offices and we will consult with State and local agency officials as part of our effort to obtain timely feedback as we implement these initiatives.

Additional specific guidance on improvements in the program areas discussed above will be issued in the near future. In the meantime, each Regional Office is directed to work closely with its State and local agencies to ensure that all aspects of the NSR permit programs comply with all applicable State and Federal program requirements.

Your comments and suggestions are welcome. Please direct them to Gary McCutchen, Chief, New Source Review Section, MD-15, Research Triangle Park, North Carolina 27711 (FTS 629-5592).

cc: Air Division Directors, Regions I-X



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Office of Air Quality Planning and Standards  
Research Triangle Park, North Carolina 27711

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*Barry Andrews*  
FYI

RECEIVED *Wayne*

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DER - BAQM.

MEMORANDUM

SUBJECT: Request for Determination on Best Available Control Technology (BACT) Issues--Ogden Martin Tulsa Municipal Waste Incinerator Facility

FROM: Gary McCutchen, Chief  
New Source Review Section, SIB, CPDD (MD-15) *AM*

Michael Trutna, Chief  
Air Toxics Program Section, SIB, CPDD (MD-15) *MAT by TKRC*

TO: J. David Sullivan, Chief  
ALO Enforcement Section, Region VI (6T-EA)

This is in response to your October 20, 1987, memorandum requesting assistance in clarifying BACT issues for a modification to the existing prevention of significant deterioration (PSD) permit for the Ogden Martin Tulsa municipal waste incineration facility.

As you are aware, no final Agency policy exists as yet on the more general issue of PSD permit modifications regardless of the status of the source (operating, under construction, etc.) or of the type or magnitude of the change requested. However, we currently plan to have a permit modifications package available by the end of this fiscal year. It will more comprehensively address the issue of permit modifications, including the group of issues dealing with BACT. In the interim, this memorandum addresses only BACT changes for this source and operating sources in similar situations.

First and most important, the source and permitting agency must understand that the source is obligated to meet all applicable permit conditions. Conditions in the existing permit remain in effect and are enforceable until such time as relief may be granted (as in the case of a revised permit being issued). Accordingly, it is important to recognize that enforcement actions have and will serve as the primary mechanism in ensuring compliance. The BACT guidance described in this memorandum is applicable only if EPA finds that the BACT determination in the original permit is inappropriate. Any questions on what constitutes appropriate grounds for enforcement actions should be referred to Rich Biondi, Stationary Source Compliance Division.

The information that you have submitted indicates that on December 23, 1982, a PSD permit was issued for the construction and operation of three municipal waste incinerator/boiler units, each rated at 230 tons per day of municipal waste. Prior to construction, in February 1984 and again in May 1984, permit modifications were issued to the source resulting in a final permit for the construction of two 375 tons per day incinerator units. The units were constructed in conformity with the modified permit and subjected to compliance testing in 1986. Measured nitrogen oxides (NO<sub>x</sub>), sulfuric acid mist (H<sub>2</sub>SO<sub>4</sub>) and mercury emissions exceed the permit limit by a "significant" amount as defined in 40 CFR 52.21(b)(23)(i). The source has requested that the permit be revised to reflect the actual measured emissions of these pollutants.

You have requested a determination on whether the exceedance of permitted emissions by "significant" amounts, or the determination of a new "significant" pollutant by performance testing triggers the reopening of the BACT review process for the Ogden Martin facility. If BACT review is reopened, which pollutant(s) would be subject, to what degree should the limitations and economics of the existing facility come into play, and would the June 26, 1987, "Operational Guidance on Control Technology for New and Modified Waste Combustors" apply to this facility?

Based on the information presented, this response assumes that errors, faulty data, or incorrect assumptions contained in the original or modified permit applications have resulted in what may be inappropriate BACT emission levels and unpermitted significant emissions, and there is no indication that the applicant intentionally acted to misrepresent or conceal data in their original and modified permit applications and BACT analysis. This guidance does not apply to any other type of noncompliance scenario.

Any time a permit limit founded in BACT is being considered for revision, a corresponding reevaluation (or reopening) of the original BACT determination is necessary. This is necessary even if the permit limit is exceeded by less than a "significant" amount. The significance levels in the PSD regulations define applicability cutoffs and are not to be used when evaluating source compliance with PSD permit limits.

As discussed above, and prior to any attempt to revise or readjust an existing BACT limit, the source has an initial obligation to comply with the permit. At a minimum the source should be required to investigate and report to the permitting agency all available options to reduce emissions to a lower (if not the permitted) level. If compliance with the permit can be reasonably achieved, the source should be required to take steps to reduce emissions. If sufficient emission reductions down to the permitted level cannot be reasonably achieved, then a reevaluation of the permit may be warranted. In the process of reevaluating BACT, current BACT technology and requirements must be considered. For municipal waste combustors, the June 26, 1987, "Operational Guidance on Control Technology for New or Modified Municipal Waste Combustors" would apply; however, in this case, where the source is already operating, certain retrofit costs and other costs associated with an already existing facility may be considered.



For H<sub>2</sub>SO<sub>4</sub>, if potential emissions cannot be reduced below the significance level, a PSD review is required and the results must be incorporated in the source's PSD permit. As with NO<sub>x</sub> and mercury emissions, the BACT analysis considers current technology and requirements while weighing the additional retrofit costs and other costs associated with an already existing facility.

If a revision to the permit is determined to be appropriate, the revision must also address all other PSD requirements which may be affected by an allowable increase in permitted or newly regulated emissions (e.g., protection of the standards and increments, additional impacts, monitoring). The control of emissions of toxic air pollutants is an important aspect of PSD review. This memorandum does not address potential air toxics issues. Questions on those matters may be addressed to Mike Trutna at FTS 629-5345 or Kirt Cox at FTS 629-5399, of the Air Toxics Programs Section.

The revised permit, just like the initial permit, must also go through a public review period before it may be issued.

If you have any questions regarding this matter, please have your staff contact David Solomon of the New Source Review Section at 629-5375.

cc: Richard Biondi  
Judith Katz  
Greg Foote



10-21-87  
Atlanta, GA

Barry

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET  
ATLANTA, GEORGIA 30365

OCT 21 1987

4APT-APB/aes

Mr. C. H. Fancy, P.E., Deputy Chief  
Bureau of Air Quality Management  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

DER  
OCT 23 1987  
BAQM

Re: Bay County Resource Recovery Facility (PSD-FL-099)

Dear Mr. Fancy:

This is in response to your September 16, 1987, letter regarding the requested municipal solid waste throughput increase at the above facility. In your letter you requested guidance on how BACT analysis should be performed for a significant increase in sulfur dioxide emissions given the circumstances of this particular facility.

The Bay County Resource Recovery Facility was permitted by the Florida Department of Environmental Regulation (FDER) on September 26, 1984, for the construction of two 175 ton per day (TPD) municipal solid waste (MSW) incinerators which employ electrostatic precipitators for the control of particulate emissions. Although the facility was designed to accommodate 510 TPD of MSW, the original PSD permit conditions reflected its potential to emit based on the anticipated supply of MSW (350 TPY) projected by the applicant (Westinghouse Electric Corporation). A permit modification allowing the source to increase the use of MSW to the design rate (510 TPD) will increase the emissions of sulfur dioxide by 76 tons per year and subject the emission units to PSD review. Since the incinerators are the units subject to review, the total emissions of sulfur dioxide will need to be accounted for in performing the BACT analysis. In addition, the implementation of EPA's "Operational Guidance on Control Technology for New and Modified Municipal Waste Combustors (MWCs)," dated June 26, 1987 (enclosed), and the most recent guidance dated September 22, 1987 (enclosed), will require that the control of hazardous, yet unregulated pollutants be considered in the analysis. This would indicate that the facility will have to be retrofitted with acid gas pollution controls under a current BACT determination. However, the installation of minimal acid gas controls will most likely reduce the potential increase in sulfur dioxide emissions to below the PSD significant level, therefore negating a PSD BACT review. This would allow the FDER to permit the facility for the increased MSW throughput without having to meet the stringent BACT emission limits now in place for MSW incinerators.

I hope this addresses your inquiry. If you should have any further questions, please contact me or Wayne Aronson of my staff at (404) 347-2864.

Sincerely,

*Bruce P. Miller*

Bruce P. Miller, Chief  
Air Programs Branch  
Air, Pesticides, and Toxics  
Management Division

Enclosures: 2

Copied: BT/CHF

*Pradeep Raval*

*Barry Andrews*

*10/26/87*

*(m)*



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Office of Air Quality Planning and Standards  
Research Triangle Park, North Carolina 27711

26 JUN 1987



MEMORANDUM

**SUBJECT:** Operational Guidance on Control Technology for New and Modified Municipal Waste Combustors (MWCs)

**FROM:** Gerald A. Emison, Director *Gerald A. Emison*  
Office of Air Quality Planning and Standards (MD-10)

**TO:** Air Management Division Directors  
Regions I, III, V and IX

Air and Waste Management Division Director  
Region II

Air, Pesticides, and Toxics Management Division Directors  
Regions IV and VI

Air and Toxics Division Directors  
Regions VII, VIII and X

As you know, numerous questions regarding the selection of appropriate pollution control requirements for MWCs have arisen during recent years in major source permitting proceedings under the prevention of significant deterioration (PSD) provisions of Part C of the Clean Air Act and the nonattainment new source review (NSR) provisions of Part D of the Act. Accordingly, the attached operational guidance is being issued to promote consistency in making best available control technology (BACT) determinations under PSD and lowest achievable emission rate (LAER) determinations under nonattainment NSR, and to reduce delay and confusion in the permitting process. This guidance requires reviewing authorities, in considering the range of potential control options during the BACT determination process for MWCs, to consider a dry scrubber and a fabric filter or electrostatic precipitator as BACT for sulfur dioxide (SO<sub>2</sub>) and particulate matter (PM), and combustion controls as BACT for carbon monoxide (CO).

The Administrator remanded to Region IX on June 22, 1987, their previous concurrence on a PSD permit for the H-Power MWC to be constructed in Honolulu, Hawaii. Petitioners had argued that, (a) BACT for this facility did not adequately justify the failure to require the use of an acid gas scrubber, and (b) the permitting authority did not evaluate the effectiveness of acid gas scrubbers in reducing emissions of unregulated pollutants, as required

by the June 1986 North County Resource Recovery Associates PSD Appeal decision (or North County remand). In remanding the H-Power permit application to Region IX for further proceedings, the Administrator made it clear that the Agency considers acid gas scrubbers to be an available technology for excess air MWCs that fire refuse-derived fuel (RDF) such as the H-power facility. The attached operational guidance states that this type of post-combustion control is one component of available technology for modular, starved air MWCs and massburn, excess air MWCs, in addition to RDF-fired, excess air MWCs.

As stated above, the operational guidance includes a second component of available technology, which is combustion control for the criteria pollutant CO. Since the effectiveness of the two components of available technology in controlling unregulated pollutants is an important consideration in individual BACT determinations (per the North County remand), the attached guidance states that (a) acid gas scrubbers followed by fabric filters or electrostatic precipitators are effective in controlling potentially toxic organic and metal pollutants, as well as acid gases other than sulfur dioxide, and (b) combustion controls are effective in controlling potentially toxic organic pollutants.

The technical basis for the operational guidance is documented in five reports which are a part of the Agency's comprehensive study of MWC. These volumes are listed in the References section of the guidance. You will note that the guidance indicates "specified values" should be selected on a site specific basis for several design and operating parameters of the facility and for emissions of criteria pollutants. A thorough discussion of the factors to be considered in choosing the "selected values" is included in the five reports from the comprehensive MWC study.

As noted under Section V, this guidance should be transmitted to all State and local agencies to which PSD permitting authority has been delegated under 40 CFR Section 52.21(u). The transmittal letter should specify that the delegation agreement is amended to include this guidance. States which have received SIP approval of a PSD program under 40 CFR Section 51.166 (formerly Section 51.24) should also be informed of this guidance and of EPA's expectation that it be followed.

#### Attachment

cc: James DeMocker (ANR-443)  
Gregory Foote (LE-132A)  
Steve Greene (WH-565)  
Joseph E. Lees (ANR-443)  
J. Craig Potter (ANR-443)  
John C. Ulfelder (A-101)  
Marcia Williams (WH-562)

6/26/87

OPERATIONAL GUIDANCE ON CONTROL  
TECHNOLOGY FOR NEW AND MODIFIED  
MUNICIPAL WASTE COMBUSTORS

I. The Need for Guidance.

The combustion of municipal waste represents an increasingly important element of the solid waste disposal problem in the U.S. However, the operation of municipal waste combustors (MWCs) releases potentially harmful pollutants to the air. Human exposure can occur directly or indirectly, and there is also concern that the environment could be vulnerable to long-term accumulation of emitted pollutants. EPA is addressing these issues in a comprehensive, integrated Municipal Waste Combustion Study and with this operational guidance.

Numerous questions regarding the selection of appropriate pollution control requirements have arisen during recent years in major source permitting proceedings under the prevention of significant deterioration (PSD) provisions of Part C of the Act and the nonattainment new source review (NSR) provisions of Part D of the Act. Uncertainty over these questions has led to conflict over minimum legal requirements and consequent delay in the permitting and construction of MWCs. Hence, there is a need for guidance to resolve controversies which may arise as to facilities seeking permits. Accordingly, EPA is issuing this operational guidance for use in making best available control technology (BACT) determinations under PSD and lowest achievable emission rate (LAER) determinations under nonattainment NSR. EPA believes that this guidance will promote consistency in control requirements, and reduce delay and confusion in the permitting

process. At the same time it will allow permitting authorities to give appropriate consideration to local factors in making case-by-case BACT determinations as required under law.

## II. Administrative History.

Section 169(3) of the Act provides that BACT determinations in PSD permits must be "based on the maximum degree of reduction of each pollutant subject to regulation under this [Act] . . . which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable." EPA's regulations track this language. See 40 C.F.R. 52.21(b)(12), 40 C.F.R. 51.166(b)(12). In addition, in two administrative appeals involving resource recovery facilities, EPA has further refined the analysis which permitting authorities must conduct in making BACT determinations.

In North County Resource Recovery Associates, PSD Appeal No. 85-2 (June 3, 1986), the Administrator issued a Remand Order which held that, in making BACT determinations for a regulated air pollutant, the permitting authority must consider the effect of that decision on emissions of pollutants not regulated under the Clean Air Act. North County provided that the final BACT decision should address these environmental impacts, and that the permitting authority may ultimately choose more stringent emissions limitations for the regulated pollutant than it would otherwise have chosen if it would have the collateral benefit of restricting emissions of the unregulated pollutant. In the North County case, the permitting authority had required the use of a dry scrubber and fabric filter as BACT for sulfur dioxide, but had failed to consider the effect of that decision on emissions

of certain unregulated pollutants -- dioxins and furans, heavy metals, and acid gases -- on the grounds that it lacked authority to do so. Various persons petitioned the Administrator under 40 C.F.R. Part 124. In response to the Administrator's subsequent remand order, the permitting authority analyzed the effect of various control options on these three classes of pollutants, and found that no other controls on regulated pollutants would be more effective in reducing emissions of the unregulated pollutants. The Administrator then ruled that the permitting authority had satisfied the requirements of the remand order, and denied the petitions. See North County Resource Recovery Associates, PSD Appeal No. 85-2, Order Denying Review (September 4, 1986).

The Administrator ruled in Honolulu Resource Recovery Facility ("H-Power"), PSD Appeal No. 86-6, Remand Order (June 22, 1987), that a PSD permitting authority has the burden of demonstrating that adverse economic impacts justify the failure to require as BACT the most effective control technology which is available. He also found that acid gas scrubbers are an available control technology for sulfur dioxide (SO<sub>2</sub>). The H-Power decision also provided that the economic impacts must be specific to the source in question and substantial. Thus, because the Administrator agreed with EPA Region IX that Hawaii had not adequately demonstrated the basis for its conclusion that economic factors justified the absence of flue gas treatment as BACT for SO<sub>2</sub>, he remanded the matter for further proceedings.



EPA today also draws upon the technical data referenced below, and its experience in issuing, reviewing, and enforcing PSD permits for MWCs. Recent emission test data have demonstrated that particulate matter (PM), SO<sub>2</sub>, and other air pollutants (including organics, heavy metals, and acid gases) can be controlled effectively by acid gas scrubbing devices (dry scrubbers) equipped with efficient particulate collectors. Over 20 MWC facilities in Europe are known to be operating with dry scrubbers and particulate collectors, and at least 37 such facilities are known to exist in Japan. In the United States, three facilities currently are in operation and at least 15 have been permitted to construct with dry scrubbing and particulate control devices as the specified technology. Thirteen of these facilities are expected to be operating by December 1988.

Based on this information, it is clear that a dry scrubber followed by either a fabric filter or electrostatic precipitator are "available" technologies for effective control of the SO<sub>2</sub> and PM emitted by MWCs, and that these technologies also are effective in controlling emissions of potentially toxic organic and heavy metal pollutants, and acid gases other than SO<sub>2</sub>. In addition, the data show that these technologies are reliable and reasonably affordable. Similarly, combustion controls are an available technology for the control of carbon monoxide (CO) emitted by MWCs, and are effective in controlling that criteria pollutant and potentially toxic organic pollutants. EPA's information indicates that this technology also is reliable and reasonably affordable.

### III. BACT Guidance for SO<sub>2</sub>, PM, and CO.

Accordingly, in considering the range of potential control options during the BACT determination process for MWCs, the reviewing authority must consider a dry scrubber and a fabric filter or electrostatic precipitator as BACT for SO<sub>2</sub> and PM, and combustion controls as BACT for CO. In order to justify a BACT determination calling for a lesser degree of emissions control than can be achieved using these technologies, the permitting authority must demonstrate, based on information contained in the permit file, that significant technical defects, or substantial adverse economic, energy, or environmental impacts or other costs would arise that are specific to the MWC in question. Permitting authorities remain free to make case-by-case judgments in accordance with today's guidance. However, based on the above-referenced information regarding legal requirements and the availability, effectiveness, and cost of these technologies, EPA expects that proper application of this guidance will result in few, if any, BACT determinations entailing application of pollution control technologies less effective than those called for herein.

Today's guidance is general; it is limited to describing types of post-combustion control equipment and to establishing general criteria for combustor design, combustor operating practices, emission monitoring, and operator training. It does not set specific emission limits. Detailed information regarding the maximum degree of emissions control achievable with these technologies is available in the referenced technical documents, the BACT/LAER Clearinghouse, or from EPA. Such information should be used by applicants and permitting authorities setting specific emissions

limits for PSD permits. In addition, today's guidance only addresses control technologies currently in widespread use for MWCs, and establishes minimum criteria for BACT determinations. Permitting authorities are not relieved of their responsibility to consider, on a case-by-case basis, whatever available technologies may be anticipated to provide a greater degree of control than those addressed today. Similarly, because control technologies and the other factors in forming BACT determinations are constantly evolving, the technology providing the greatest degree of emissions control taking economic, energy, and environmental impacts into account may likewise change over time. As one example, flue gas treatment technology for the criteria pollutant nitrogen oxides (NO<sub>x</sub>) is in operation at one MWC in the U.S., and this technology should be considered by permitting authorities in making BACT determinations. In addition, emerging technologies in flue gas cleaning may develop which can attain the level of multipollutant control currently demonstrated by dry scrubbing/particulate matter controls, and technologies such as these should be considered in future BACT determinations. Permitting authorities and applicants must keep abreast of new developments. Of course, EPA will assist in this endeavor.

#### IV. LAER Guidance for Nonattainment Areas.

The technologies discussed herein for control of SO<sub>2</sub>, PM, CO, and NO<sub>x</sub> have all been successfully implemented, and thus have been "achieved in practice" by MWCs within the meaning of section 171(3) of the Act. Hence, in nonattainment areas where NSR requirements apply and major new sources and modifications must apply LAER, no less effective pollution control technologies may be imposed as LAER.

## V. Implementation.

Today's guidance applies to all ongoing PSD and NSR proceedings, as well as to all new permit applications. In consideration of the needs for program stability and equity to sources which have in good faith relied on pre-existing permitting guidelines, this guidance does not apply to PSD and NSR permit proceedings for which, as of June 26, 1987, final permits have already been issued and, with respect to PSD permits issued by EPA, agency review procedures under 40 C.F.R. Part 124 have been exhausted.

This operational guidance applies to PSD permits issued by EPA directly through its Regional offices and indirectly through State and local agencies pursuant to delegation agreements made under 40 C.F.R. 52.21(u). Such agencies will be notified by letter of this guidance. It will constitute an amendment to the pre-existing delegation agreements. EPA Regional offices will review all draft permits for MWCs issued by delegate agencies during the public comment period to insure proper application. Further program evaluation will take place under the National Air Audit System (NAAS). If delegate agencies should fail to adhere to this guidance, EPA staff may initiate administrative appeal proceedings under 40 C.F.R. Part 124 in appropriate cases. Such action would be appropriate where, for example, failure to follow the guidance results in a finding of fact or conclusion of law which is clearly erroneous, or involves an exercise of discretion or an important policy consideration which the Administrator should review. See 40 C.F.R. 124.19(a). Action would also be appropriate where failure to follow the guidance resulted in an inability to determine,

based on the record, whether a clear error occurred. If necessary, EPA may also revoke the delegation of PSD authority to the State or local agency.

With respect to State PSD permits issued pursuant to a State implementation plan (SIP) program approved by EPA under 40 C.F.R. 51.166 (formerly 51.24), and State NSR programs approved under Part D of the Act and 40 C.F.R. 51.165 (formerly 51.18(j)), EPA expects States to follow today's guidance in generally the same fashion as delegate agencies. EPA will use the guidance as a reference point in its oversight of State MWC permit actions. As with delegated permits EPA will participate in permit proceedings and conduct NAAS evaluations. If agencies processing NSR permits or PSD permits under approved State programs should fail to adhere to this guidance, EPA may initiate administrative and/or judicial action under sections 113 and/or 167 of the Act in appropriate cases. Such action would be appropriate where, for example, failure to follow the guidance results in a finding of fact or conclusion of law which is clearly erroneous, or in an inability to determine whether a clear error occurred. If necessary, EPA may also call for SIP revisions under section 110(a)(2)(H).

Insofar as today's guidance addresses minimum legal requirements for BACT determinations, it simply implements existing regulations and policy, including Agency actions already made by the Administrator in the North County and H-Power cases. To the extent the guidance addresses the technical issues of availability, effectiveness, and cost of control technologies for MWCs, it expresses EPA's view regarding the proper usage, in permit proceedings under existing EPA regulations and SIP programs, of the factual data contained

in the five documents referenced below. Those documents present information on the alternative controls available for MWCs, the performance capabilities and costs of those controls, and the methods for monitoring and measuring emissions from MWCs. Factors to be considered in choosing the "specified values" to be included in permits, as noted in the guidance, such as maximum concentration of CO in emissions and minimum value of furnace temperature, are contained in these references. Thus, the guidance does not constitute rulemaking within the meaning of section 307(d) of the Act or under the Administrative Procedure Act. Accordingly, it is not necessary to implement this guidance, as to EPA permits issued by Regional offices or State and local agencies, through changes in the PSD regulations at 40 C.F.R. 52.21. Likewise, regarding approved State PSD programs, it is not necessary to revise 40 C.F.R. 51.166 and require corresponding SIP revisions.

#### VI. Technical Guidance.

Today's operational guidance applies to three types of MWCs: massburn, excess air MWCs; excess air MWCs that fire refuse-derived fuel; and modular, starved air MWCs. It applies to those MWCs that operate with energy recovery and those that operate without energy recovery. It applies to both major new and major modified facilities of these types. The guidance requires that values for emission limits and operating parameters be specified in MWC permitting decisions.

One component of control technology for MWCs is the application of the appropriate post-combustion control equipment. The EPA has identified this equipment as a dry scrubber with fabric filter or with electrostatic

precipitator. The concentration of particulate emissions in the exhaust gases from the post-combustion control equipment shall not exceed a specified maximum value; and the SO<sub>2</sub> emissions in the exhaust gases shall not exceed a specified maximum concentration value or the percent reduction in SO<sub>2</sub> emissions across the post-combustion control equipment shall not be less than a specified value. Performance of the dry scrubber and fabric filter or electrostatic precipitator in controlling acid gases, potentially toxic metals, and potentially toxic organic pollutants is affected significantly by the reduction in flue gas temperature which occurs in the dry scrubber. The control system shall be designed and operated such that the flue gas temperature at the outlet from the dry scrubber does not exceed a specified value.

A second component of control technology for MWCs is proper design and operation of the combustion system, which controls CO and potentially toxic organic pollutants. Minimum concentrations of CO in emissions from MWCs are associated with the implementation of several good combustion practices. These practices are also related to the effective destruction of potential emissions of toxic organic pollutants, including dioxins and furans. Concentrations of CO in furnace exhaust gases shall not exceed a specified maximum value, and CO and O<sub>2</sub> concentrations in the exhaust gases shall be monitored continuously. In addition, furnace operating temperatures shall be no lower than a specified minimum value, and a procedure for continuous monitoring shall be established to ensure that the specified temperature is maintained.

The capabilities to control flow rates and distributions of underfire (primary) and overfire (secondary) air, to monitor continuously CO concentration and furnace temperature, to maintain thermal load within a specified range, and to control the process to maintain CO and temperature of the furnace at appropriate levels are all important to good combustion. Detailed information regarding the numerical values to be assigned to the emission levels and equipment design and operating parameters associated with good combustion are provided in the documents cited under References.

References:

Municipal Waste Combustion Study: Emission Data Base for Municipal Waste Combustors.  
EPA/530-SW-87-021B

Municipal Waste Combustion Study: Combustion Control of Organic Emissions.  
EPA/530-SW-87-021C

Municipal Waste Combustion Study: Flue Gas Cleaning Technology.  
EPA/530-SW-87-021D

Municipal Waste Combustion Study: Cost of Flue Gas Cleaning Technologies.  
EPA/530-SW-87-021E

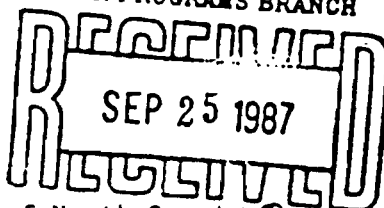
Municipal Waste Combustion Study: Sampling and Analysis.  
EPA/530-SW-87-021F





## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Office of Air Quality Planning and Standards  
 Research Triangle Park, North Carolina 27711  
 AIR PROGRAMS BRANCH



SEP 25 1987

MEMORANDUM

**SUBJECT:** Implementation of North County Resource Recovery PSD Remand  
 EPA REGION IX  
 ATLANTA, GA

**FROM:** Gerald A. Emison, Director  
 Office of Air Quality Planning and Standards (MD-10)

**TO:** Director, Air Management Division, Regions I, III, V, and IX  
 Director, Air and Waste Management Division, Region II  
 Director, Air, Pesticides, and Toxics Division, Regions IV and VI  
 Director, Air and Toxics Division, Regions VII, VIII, and X

On June 3, 1986, the Administrator remanded a prevention of significant deterioration (PSD) permit decision, involving the North County Resource Recovery project, to Region IX for their reconsideration. The permit was for a 33-megawatt, 1000 tons-per-day facility to be located in San Marcos, California. At issue was whether appropriate consideration had been given, within the best available control technology (BACT) determination, to the environmental effects of pollutants not subject to regulation under the Clean Air Act (Act).<sup>\*</sup> The remand strongly affirms that the permitting authority should take the toxic effects of unregulated pollutants into account in making BACT decisions for regulated pollutants. This obligation arises from section 169(3) of the Act, which defines BACT as the maximum degree of emissions decrease which the permitting authority determines is achievable, taking into account "environmental . . . impacts." Essential to this process is the notification to the public of how the effects of toxic air pollutants, including those that are unregulated, have been considered in the PSD review and the subsequent consideration of the comments in making the final BACT decision. The purpose of this memorandum is to advise you of the impact of the remand on PSD permitting and to provide implementation guidance. This document builds upon and makes final the draft guidance of August 1986.

Coverage

Although the Act has given us the authority to review directly the considerable range of regulated pollutants, the remand clearly indicates that the Environmental Protection Agency (EPA) should incorporate consideration of all pollutants within its PSD determinations for all sources subject to PSD. This result is consistent with the fact that the PSD permitting process is charged . . . to protect public health and welfare from any

<sup>\*</sup>A "regulated pollutant," or "pollutant subject to regulation under the Clean Air Act," is one which is addressed by a national ambient air quality standard, a new source performance standard, or is listed pursuant to the national emission standards for hazardous air pollutants program.

actual or potential adverse effect . . . from air pollution . . . ." and that increases in air pollution should be permitted ". . . only after careful evaluation of all the consequences . . . ." [section 160(1) and (2)].

Revisions to State implementation plans (SIP's), to comport with the Administrator's decision, should not be necessary. State or local agencies with delegated PSD programs automatically track this change in policy. Agencies implementing their own SIP-approved programs are also unlikely to need any regulatory changes. This is because the remand is based on an interpretation of Act language, notably the definition of BACT, that is in most cases already contained in the plan. I ask that you confirm this with your States and applicable local agencies,

### Transition

As with any change in the way EPA does business, we have developed a transition plan for its implementation. The situations can be addressed most logically by dividing all PSD sources into three groups based on phase of permitting activity: those sources for which permit applications had not been filed, those for which permits had already been granted, and those for which applications had been filed but permits not yet granted.

First, all PSD sources for which complete applications had not been filed as of the Administrator's June 3, 1986, decision are fully subject to the remand's requirements. Earlier applications present more complex policy considerations.

One could argue, since the Administrator's decision is an interpretation of existing Act provisions, rather than a new requirement, that all PSD permits issued under the terms of the 1977 Amendments to the Act should be subject to the remand. However, program stability and equity to sources, in this second group, that have relied upon properly issued PSD permits militate strongly against such an approach. For these reasons, I have decided to exempt from the requirements of the remand all sources holding finally issued permits as of June 3, 1986. (Subsequent major modifications to such existing sources are, of course, subject to PSD review, including the application of the requirements of this remand.)

The third group of sources consists of those for which PSD permits were in the pipeline (i.e., complete application filed but permits not yet issued) as of the date of the remand. It is appropriate that these sources also be subject to the terms of the remand. However, for permit applications which have successfully passed through the public comment period without environmental effects concerns being raised, the Regional Office may, at its discretion, issue these in final without further delay.

The above enunciated transition policy applies directly to all EPA permit issuance procedures and also to those used by State agencies issuing PSD permits under a delegation of authority agreement pursuant to 40 CFR 52.21(u). This transition policy does not automatically apply to PSD

permit decisions by States under SIP-approved PSD programs, except to the extent that environmental effects issues are raised by commenters. The policy does apply prospectively in a uniform fashion to all applications filed after June 3, 1986. States with SIP-approved PSD programs are, of course, responsible for enunciating reasonable transition schemes and I ask that you encourage them to adopt policies consistent with this one. These transition schemes, as with the substantive program itself, are unlikely to require rulemaking; however, the policies should be set forth in formal statements so as to further the goals of public awareness and consistent application. These policies and their implementation will be reviewed within the National Air Audit System to assess the need to require greater conformance.

### Required Analyses

The BACT requirement outlined in section 169(3) of the Act contemplates a decision process in which the best available controls are defined for each regulated pollutant that a PSD source would emit in significant amounts. This case-by-case process is to take into account energy, environmental, and economic impacts and other costs. The toxic effects of unregulated pollutants are to be accounted for in deciding if the BACT otherwise being prescribed for regulated pollutants still represents the appropriate level and type of control. If the reviewing authority judges the potential environmental effects of such unregulated pollutants to be of possible concern to the public, then the final BACT decision for regulated pollutants should in all cases address these effects and reflect, as appropriate, control beyond what might otherwise have been chosen.

A recent remand determination made by the Administrator in another case provides further elucidation of the BACT process. In that case, Honolulu Program of Waste Energy Recovery (H-Power), PSD Appeal No. 86-6, Remand Order (June 23, 1987), the Administrator ruled that a PSD permitting authority has the burden of demonstrating that adverse economic impacts are so significant as to justify the failure to require the most effective pollution controls technologically achievable as BACT.

The broad mandate with respect to toxics that is presented by the remand is not readily amenable to highly detailed national guidance that provides the appropriate permitting requirement in each case. There is no specific formula for making BACT decisions; this is a case-by-case process involving the judgment of the reviewing authority. While it may be possible to develop a framework of guidance based upon such factors as risk assessment and reference doses, this would entail a large effort that seems inappropriate at this time. It is more practical, however, for EPA to develop guidance for specific source categories that are of particular importance. The EPA has recently provided such BACT guidance with respect to municipal waste combustors. See memorandum entitled "Operational Guidance on Control Technology for New and Modified Municipal Waste Combustors," from Gerald A. Emison, Director, Office of Air Quality Planning and Standards, dated June 26, 1987. Guidance on other source categories may be issued from time to time as appropriate.

Today's policy charges the PSD review authority with analyzing at the outset the environmental impacts of proposed construction projects with respect to air toxics which might be of concern, even if such matters are not initially raised by the public. Other types of environmental effects should also be addressed in response to public concerns, within the limits of the ability to do so. For PSD reviews consistent with this policy, each applicable permitting authority should initiate an evaluation of toxic air pollutants (unregulated as well as regulated) which the proposed project would emit in amounts potentially of concern to the public. The review authority should evaluate unregulated pollutants for both carcinogenic and noncarcinogenic effects. The National Air Toxics Information Clearinghouse (NATICH) data base contains considerable information relevant to evaluating the effect, sources, and control techniques available for unregulated pollutants. I encourage you to urge permitting authorities to use NATICH as a source of information as they conduct the analyses. Further information may be obtained by calling the NATICH staff at 629-5519.

The response to the Administrator made by EPA Region IX in its analysis of the North County permitting decision is attached. Although this example illustrates only one of several acceptable approaches, it is a well thought out analysis that provides a useful example to consider for future permitting exercises.

Headquarters has several other mechanisms in effect to support analyses with respect to toxics. These include a recent report which helps to estimate toxic air emissions from various sources (Compiling Air Toxics Emission Inventories, EPA-450/4-86-010). The burden of proof regarding emissions estimates, of course, rests with the applicant, but the techniques discussed in the document should be useful in determining if the applicant's estimates are reasonable and address appropriate pollutants. In addition, the Office of Research and Development (ORD) has released a control technology manual which is valuable in evaluating how control devices for particulate matter and volatile organic compounds differ in their abilities to control various toxic species of these criteria pollutants (Control Technologies for Hazardous Air Pollutants, EPA-625/6-86/014).

Support will also be available on a case-by-case basis from the Office of Air Quality Planning and Standards (OAQPS) and ORD. In particular, we have formed a control technology center to provide assistance to the review authority in determining BACT. This center can offer a range of activities, including evaluation of source emissions, identification of control techniques, development of control cost estimates, identification of operation and maintenance procedures, and, in a few situations, in-depth engineering assistance on individual problems. Other planned activities include the publication of technical guidance to assist in the evaluation of selected types of sources. Contact points for the control technology center are Lee Beck in OAQPS (629-0800) and Sharon Nolen in ORD (629-7607). We expect this support to limit the effort required of PSD reviewing authorities.

## Public Participation

One of the most important features of this policy is the requirement that the affected public be fully informed of the potential toxic emissions from a proposed project and of what the reviewing authority has done to minimize this potential within the BACT decision. A specific discussion of toxics concerns in a technical support document might be helpful in accomplishing this information transfer. Additional concerns related to the environmental effects of unregulated pollutants raised by commenters must then be addressed in the final BACT determination. This process is of central importance to PSD permitting and comments received must be adequately addressed in the final decision. Strong public participation is consistent with the PSD goals contained in section 160 of the Act, which relate to informing the public of increased air pollution, including that due to unregulated pollutants.

It should be noted that although these analyses are used in the BACT decision, they will not be used as the basis for disapproving a project that has agreed to apply BACT. In other words, today's policy requires that toxics be considered in the control of the proposed project only to the extent that the level of control chosen as BACT is achievable.

## Enforcement

In the case of delegated (as opposed to SIP-approved) PSD programs, EPA has various enforcement tools. Pursuant to 40 CFR 124.19, any party that participated in the public proceedings with respect to a proposed permit may, within 30 days of the final permit decision, petition the Administrator of EPA to review any condition of that permit decision. The Administrator may also seek to review any such permit condition on his own initiative. Should this appeals procedure be unavailable in a particular case, EPA has the authority, depending upon the facts of the case, to withdraw the delegation with respect to an individual permit that is being or has been issued inconsistently with the terms of that delegation. Thus, EPA may be able to directly intervene in the issuance of a PSD permit to ensure implementation of today's policy. This withdrawal of delegation is not the preferred course of action but it may be available if needed.

The consideration of air toxics in PSD permitting is a requirement of the Act and, through the definition of BACT, is incorporated in the SIP's. Therefore, violation of this policy would constitute a SIP violation and be enforceable by EPA. Section 113(a) of the Act provides for Federal issuance of a notice of violation in the case of a violation of a SIP. If the violation continues for more than 30 days, section 113(b) provides that the Administrator shall commence an action for injunction or civil penalty, or both. In addition, section 167 of the Act specifically provides that EPA take legal action to prevent the construction of a major emitting facility that does not conform to the requirements of PSD. Under section 167, EPA can issue an administrative order or commence a civil action. Since no

notice of violation would be necessary, in this case, EPA can use section 167 to order immediate cessation of construction or operation. Note also that this section has been construed as providing EPA with authority to take enforcement action against sources out of compliance with PSD even if they have already been constructed. These remedies are more likely to be used in the case of SIP-approved programs than with delegated programs, for which an appeal under 40 CFR Part 124 would generally be the preferred course of action.

Enforcement actions are pursued after reviewing a range of factors relevant to each particular case. For this reason, I am not setting forth detailed provisions as to required enforcement measures. There are, however, certain situations in which enforcement action is generally appropriate. These include procedural deficiencies, such as failure to solicit public comment on air toxics issues for applicable permits, and failure to address the air toxics concerns raised by public comment. Enforcement with respect to permits already in the pipeline should follow the transition scheme in today's policy for delegated programs and the State or local agreement established with EPA for SIP-approved programs.

The Act and the PSD regulations require that States submit a copy of the public notice for proposed permits to EPA. I urge the Regional Offices to ensure that such notices are submitted and are reviewed for conformance with the criteria contained in this document. Although enforcement mechanisms are available to address noncomplying sources, our efforts to implement today's policy will be much more effective if taken prospectively and in coordination with the State permitting process.

### Conclusion

Today's guidance summarizes the broad ranging impact of the June 3, 1986, remand and provides some insight into the analyses and public disclosure that now should take place. We will continue to support and monitor subsequent decisions and to assess the need for more detailed or expansive guidance. Questions on today's guidance should be addressed to Michael Trutna (629-5345) or Kirt Cox of OAQPS (629-5399).

### Attachment

cc: C. Potter  
A. Eckert  
D. Clay  
Regional Administrator, Regions I-X  
Air Branch Chiefs, Regions I-X



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

215 Fremont Street  
San Francisco, Ca. 94105

MEMORANDUM

DATE: August 15, 1986

SUBJECT: North County Resource Recovery Associates  
PSD Appeal No. 85-2

FROM: *David E. Houdekamp*, Director  
Air Management Division, Region 9

TO: Lee M. Thomas, Administrator  
U.S. Environmental Protection Agency

This is in response to the June 3, 1986 remand of Region 9's April 2, 1985 determination to issue a Prevention of Significant Deterioration (PSD) permit to the North County Resource Recovery Associates for the construction of a 1000 ton per day resource recovery facility. The remand charged Region 9 with reconsidering the effects of unregulated pollutants when making PSD determinations.

Region 9 has reviewed the relevant BACT decisions and has prepared a response to the Administrator's remand, as recommended in the July 21, 1986 guidance memo from Gerald A. Emison, Director, Office of Air Quality Planning and Standards. Our response with supporting materials is attached.

If you have any questions regarding the enclosed materials please contact me at 454-8201 (FTS) or have your staff contact Wayne A. Blackard, Chief of our New Source Section at 454-8249 (FTS).

Enclosures

RESPONSE TO PSD REMAND  
NORTH COUNTY RECYCLING AND ENERGY RECOVERY CENTER  
(PSD Appeal No. 85-2)

On April 2, 1985 the Director of the Air Management Division, EPA Region 9, made a determination to issue a Prevention of Significant Deterioration (PSD) permit to the North County Resource Recovery Associates (NCRRA) for the construction and operation of a 33 megawatt, 1000 ton per day resource recovery facility. During the following appeal period EPA received three petitions filed pursuant to 40 CFR 124.19 requesting the Administrator to review Region 9's decision to issue the PSD permit. The Office of the Administrator reviewed the petitioners' comments and Region 9's responses to the comments and determined that Region 9 had satisfactorily addressed all of the petitioners' allegations with the exception of Region 9's assertion that EPA lacked the authority to "consider" pollutants not regulated by the Clean Air Act when making a PSD determination. The Administrator felt that Region 9's assertion was overly broad and that when making a PSD determination, in particular a best available control technology (BACT) decision, a permitting agency must consider not only the environmental impact of the controlled regulated pollutant but must also consider the environmental impacts of any unregulated pollutants that might be affected by the choice of control technology. For this reason the Administrator remanded the PSD determination to Region 9 for reconsideration and action consistent with the above interpretation of EPA authority.

In response to the above, Region 9 has reviewed the BACT decisions made for the NCRRA PSD permit. Under the PSD regulations NCRRA must apply BACT to control emissions of SO<sub>2</sub>, NO<sub>x</sub>, lead, mercury, and fluorides from their proposed resource recovery facility. BACT is defined in the Clean Air Act as "...an emission limitation based on the maximum degree of reduction of each pollutant subject to regulation under this Act...on a case-by-case basis, taking into account energy, environmental and economic impacts and other costs..." Under environmental impacts our review of the original BACT determination included the impacts from both regulated and affected unregulated pollutants. The control of particulates, CO, and VOC emissions are not directly subject to the federal PSD BACT review, but are subject to the nonattainment permitting regulations which are administered by the San Diego Air Pollution Control District.

NCRRA is proposing to use a dry scrubber with a baghouse to control emissions of SO<sub>2</sub>, acid gases, and particulate matter from the proposed resource recovery project. The dry scrubber consists of a spray dryer and a baghouse. The spray dryer injects an atomized lime slurry sorbent into the flue gas stream. The baghouse removes the dried sorbent and flyash (particulate matter) from the flue gas. The dry scrubber will be designed for a flue gas flow of 225,000 acfm at an inlet temperature of



340 degrees F and a maximum outlet temperature of 265 degrees F. NCRRA expects the dry scrubber system to provide 83% removal of SO<sub>2</sub> and 95% removal of acid gases as well as 99.5% removal of particulates.

Recent tests of emissions control devices for waste fired boilers (the latest being the Quebec City Test Program) have shown that properly designed and operated control devices can significantly reduce emissions from resource recovery facilities. In particular, an acid gas scrubbing system operating at optimal stoichiometric ratios, at low temperature, in tandem with a baghouse can achieve very high removal efficiencies of particulates, SO<sub>2</sub>, HCl, organics, and heavy metals. The tests indicate that the NCRRA's proposed emission control system (lime slurry spray dryer, baghouse, low temperature flue gas) is the most efficient for controlling the unregulated pollutants from a resource recovery facility. While certain technologies may have the potential for greater removal of regulated pollutants (e.g. a wet scrubber may yield greater SO<sub>2</sub> removal), available data suggests that greater control of unregulated pollutants will not result. Region 9 believes that the NCRRA's proposed control technology will have very high collection efficiencies of dioxins, furans, and heavy metals, with collection efficiencies of 95% for HCl, and greater than 90% for mercury. We conclude that a lime slurry spray dryer with a baghouse provides the greatest degree of control currently achievable for the relevant air toxics concerns and therefore, emission limitations based on the operation of a lime slurry spray dryer with a baghouse and continuous emission monitors constitute BACT for the control of SO<sub>2</sub>, lead, mercury, and fluorides from the NCRRA facility.

In addition to the proposed acid gas BACT, Region 9 also reviewed the BACT decisions made for controlling NO<sub>x</sub> emissions from the NCRRA facility. NCRRA has proposed to control NO<sub>x</sub> emissions with low excess air and staged combustion. After reviewing all of the available control technologies, Region 9 believes that the alternate NO<sub>x</sub> control technologies currently available for resource recovery do not offer any better control of the affected pollutants (organics such as dioxins and furans) than do the controls proposed for the NCRRA facility. Our review included staged combustion, selective non-catalytic reduction, selective catalytic reduction, wet flue gas denitrification, and the different categories of source separation. Our review also took into account the effects of the district permit requirements designed to reduce organic toxic pollutants (minimum 1800° F furnace temperature and minimum 2 second residence time in the combustion zone). We conclude that an emission limitation based on the use of low excess air and staged combustion and with continuous emission monitors is BACT (considering the effect of unregulated pollutants) at this time for the control of NO<sub>x</sub> emissions from the NCRRA facility.

As part of our BACT review of the NCRRA PSD permit, Region 9 prepared several charts listing the available SO<sub>2</sub> and NO<sub>x</sub> control options for the NCRRA facility, ranked in order of control

effectiveness, with the estimated impacts of the controls on the projects' other air pollutants. The charts were prepared using data from existing Region 9 PSD permits, permit applications, district permits, emission control technology reports from the California Air Resources Board and the New York City Department of Sanitation, and from reports on the Quebec City Test Program. The impacts on other pollutants were estimated using our best engineering judgement based on the available data. We have included these charts with this report for your review.

After reviewing the above facts, Region 9 has concluded that no greater controls for the regulated pollutants can be applied that would be more effective in reducing the emissions of unregulated pollutants. Therefore, the BACT proposed by NCRRA and the BACT decisions made by Region 9 in the April 2, 1985 PSD determination are reaffirmed as BACT for controlling SO<sub>2</sub>, NO<sub>x</sub>, lead, mercury, and fluoride emissions from NCRRA's proposed North County Recycling and Energy Recovery Center.

REFERENCES

1. Air Pollution Control at Resource Recovery Facilities,  
California Air Resources Board, May 24, 1984.
2. Clarke, Marjorie J., Emission Control Technologies for  
Resource Recovery, New York City Department of Sanitation,  
March 15, 1986.
3. Hay, D.J., Finkelstein, A., Klicuis, R., Masentette, L.,  
"The National Incinerator Testing and Evaluation Program:  
An Assessment of A) Two-Stage Incineration B) Pilot  
Scale Emission Control", Presented at the 79th Annual  
Meeting of the Air Pollution Control Association,  
June 22-27, 1986, Minneapolis, Minnesota.

EPA Region 9 - New Source Section  
 BACT ANALYSIS  
 (Ranked in Decreasing Order of Control Effectiveness)

Project: North County RR  
 Project Category: Resource Recovery  
 Project Type: 113 TPD, RDF, 36 MW  
 Pollutant: SO<sub>2</sub>  
 Date: Aug 15, 1986  
 Project Engineer: Bob Baker

Control Options	% Control	Emission Rates lbs/ton (ppm) (1)	Emissions (tons/yr)	Control Effectiveness on Other Pollutants				
				Heavy Metals	Dioxin Furans	HCl	Hg	Lead
Spray Dryer, Alkaline Slurry, Baghouse	80-95	0.26-1.04 (9-35)	53-212	Exc	Exc	Exc	Good	Exc
Spray Dryer, Lime Slurry, Baghouse	75-90	0.52-1.30 (18-44)	106-265	Exc	Exc	Exc	Good	Exc
Spray Dryer, Alkaline Slurry, ESP	75-90	0.52-1.30 (18-44)	106-265	good	good	Exc	Fair	Good
Dry Injection, Sodium Sorbent, Baghouse	70-85	0.78-1.56 (26-53)	159-318	Exc	Poor	Exc	Poor	Good
Spray Dryer, Lime Slurry, ESP	65-85	0.78-1.82 (26-62)	159-371	Good	Good	Exc	Fair	Good
Dry Injection, Lime, Baghouse	65-80	1.04-1.82 (35-62)	212-371	Good	Poor	Exc	Poor	Good
Wet Scrubbing, Alkaline	50-90+	0.52-2.61 (18-88)	106-530	Poor	Poor	Exc	Fair	Fair
Dry Injection, Sodium Sorbent, ESP	50-75	1.30-2.61 (44-88)	265-530	Fair	Poor	Exc	Poor	Fair
Dry Injection, Lime, ESP	40-70	1.56-3.13 (53-106)	318-636	Fair	Poor	Good	Poor	Fair

(1 Corrected to 12% CO<sub>2</sub>, 24 hour average

EPA Region 9 - New Source Section  
 BACT ANALYSIS  
 (Ranked in Decreasing Order of Control Effectiveness)  
 Page 2

Project: North County RRK  
 Project Category: Resource Recovery  
 Project Type: 1113 TPD, RDF, 36 MW  
 Pollutant: SO<sub>2</sub>  
 Date: Aug 15, 1986  
 Project Engineer: Bob Baker

Control Options	% Control	Emission Rates lbs/ton (ppm) (1)	Emissions (tons/yr)	Control Effectiveness on Other Pollutants				
				Heavy Metals	Dioxin Furans	HCl	Hg	Lead
Dry Injection, Limestone, ESP	25-40	3.13-3.91 (106-132)	636-795	Fair	Poor	Good	Poor	Fair
Wet Scrubbing, Water	20-30	3.65-4.17 (124-141)	742-848	Poor	Poor	Fair	Poor	Fair
Source Separation	5-10	4.69-4.95 (159-168)	954-1007	Poor	Fair	Fair	Poor	Poor

(1 Corrected to 12% CO<sub>2</sub>, 24 hour average.

EPA Region 9 - New Source Section  
 BACT ANALYSIS  
 (Ranked in Decreasing Order of Control Effectiveness)

Project: North County RRF  
 Project Category: Resource Recovery  
 Project Type: 1113 TPD, RDF, 36 MW  
 Pollutant: NO<sub>x</sub>  
 Date: Aug 15, 1986  
 Project Engineer: Bob Baker

Control Options	% Control	Emission Rates	Emissions (tons/yr)	Control Effectiveness on Other Pollutants			
		lbs/ton (ppm) (1)		Dioxin Furans	VOC	CO	Heavy Metals
Selective Catalytic Reduction (SCR) (2)	90-95	0.31-0.61 (15-30)	65-129	Unk	Poor	Poor	None
Wet Flue Gas Denitrification (FGD <sub>n</sub> ) (2)	80-90	0.61-1.21 (30-60)	129-258	None	None	None	Poor
Selective Non-Catalytic Reduction (SNCR)	30-60	2.43-4.25 (110-200)	473-860	None	None	None	None
Low Excess Air/Staged Combustion	30-35	3.94-4.25 (185-200)	795-860	Unk	Unk	Unk	None
Flue Gas Recirculation	10-15	5.16-5.46 (240-260)	1032-1118	Worsen	Worsen	Worsen	None
Source Separation	Minimal	-	-	Fair	Poor	Poor	Poor

(1) Corrected to 12% CO<sub>2</sub>, 24 hour average.

(2) This control technology has not yet been applied to refuse combustion, and has not been considered as a transferable technology due to as yet unresolved technological problems.

EPA Region 9 - New Source Section  
 BACT ANALYSIS  
 (Ranked in Decreasing Order of Control Effectiveness)

Project: North County RRF  
 Project Category: Resource Recovery  
 Project Type: 1113 TPD, RDF, 36 MW  
 Pollutant: NO<sub>x</sub>  
 Date: Aug 15, 1986  
 Project Engineer: Bob Baker

Control Options	% Control	Emission Rates lbs/ton (ppm) (1)	Emissions (tons/yr)	Control Effectiveness on Other Pollutants			
				Dioxin Furans	VOC	CO	Heavy Metals
Selective Catalytic Reduction (SCR) (2)	90-95	0.31-0.61 (15-30)	65-129	Unk	Poor	Poor	None
Wet Flue Gas Denitrifica- tion (FGD <sub>n</sub> ) (2)	80-90	0.61-1.21 (30-60)	129-258	None	None	None	Poor
Selective Non-Catalytic Reduction (SNCR)	30-60	2.43-4.25 (110-200)	473-860	None	None	None	None
Low Excess Air/Staged Combustion	30-35	3.94-4.25 (185-200)	795-860	Unk	Unk	Unk	None
Flue Gas Recirculation	10-15	5.16-5.46 (240-260)	1032-1118	Worsen	Worsen	Worsen	None
Source Separation	Minimal	-	-	Fair	Poor	Poor	Poor

(1) Corrected to 12% CO<sub>2</sub>, 24 hour average.

(2) This control technology has not yet been applied to refuse combustion, and has not been considered as a transferable technology due to as yet unresolved technological problems.



Westinghouse  
Electric Corporation

ENG/MG:DSB:87-115

Resource Energy Systems  
Division

DER

OCT 15 1987

BAQM

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

October 12, 1987

Mr. Tom Moody  
Florida Department of Environmental Resources  
Northwest District  
160 Government Center  
Pensacola, FL 32501

Dear Tom,

Enclosed are the completed Certificates of Completion of Construction, DER Form 17-1.202(3) for DER Permits No. AC-03-84703 and AC-03-84704. Mr. Bill Thomas of the Tallahassee office stated that we should complete these forms and send them to your office to obtain the operating permits for the Bay County Resource Management Center. We will apply for a new construction permit to operate the facility at its maximum rated capacity (510 TPD MSW) within the next few weeks.

As you know, we previously sent the emission compliance test report to your office on July 20, 1987. The report verified that the facility is operating in compliance with the issued permit conditions.

If you have any questions, please call me at (412) 636-5806.

Sincerely,

D. S. Beachler, Manager  
Environmental and Quality Engineering

Enclosures

cc: G. Pennington, Bay County Resource Management Center  
W. Thomas, DER, Tallahassee, FL  
N. Zimmerman, Bay County Attorney  
J. J. Ludwig, Westinghouse

/kjd Copied: Bill Thomas /CHF  
0691MM-EN01:9 Pradyep Rawal } 10/16/87  
Barry Andrews }





STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION  
AIR POLLUTION SOURCES  
CERTIFICATE OF COMPLETION OF CONSTRUCTION\*

PERMIT NO. AC03-84703 DATE: June 30, 1987

Company Name: Bay County, Florida County: Bay

Source Identification(s): Bay Resource Management Center (O'Connor Incinerator)

Actual costs of serving pollution control purpose: \$ 1,532,000.

Operating Rates: 150-175 TPD MSW, 178 wood chips (1) Design Capacity: 255 tons per day

Expected Normal 175 tons per day MSW (1) During Compliance Test 255 tons/day

Date of Compliance Test: 6/4-5 1987 (Attach detailed test report)

Test Results:	Pollutant	Actual Discharge	Allowed Discharge
	<u>Report sent under separate cover.</u>		

Date plant placed in operation: May 1, 1987

This is to certify that, with the exception of deviations noted\*\*, the construction of the project has been completed in accordance with the application to construct and Construction Permit No. SC03-091036 dated March 11, 1985.

A. Applicant:  
J. J. Zebroski PROJECT MANAGER  
Name of Person Signing (Type) Signature of Owner or Authorized Representative and Title

Date: 8/1/87 Telephone: 412-636-5742

B. Professional Engineer:  
Charles B. Speicher, P.E. (Civil)  
Name of Person Signing (Type) Signature of Professional Engineer

Westinghouse Electric Corporation  
Company Name ~~XXXXX~~ Registration No. 15472-E

Resource Energy Systems Division  
Date: 8/18/87

2400 Ardmore Boulevard

Cost Building (Seal)

Pittsburgh, PA 15221

Mailing Address

(412) 636-5840

Telephone Number

\*This form, satisfactorily completed, submitted in conjunction with an existing application to construct permit and payment of application processing fee will be accepted in lieu of an application to operate.

\*\*As built, if not built as indicated include process flow sketch, plot plan sketch, and updates of applicable pages of application form.

(1) Each combustor capable of burning 255 TPD MSW at 4500 Btu/lb or 175 TPD MSW and 89 TPD wood chips.



STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION  
AIR POLLUTION SOURCES  
CERTIFICATE OF COMPLETION OF CONSTRUCTION\*

PERMIT NO. AC03-84704 DATE: June 30, 1987

Company Name: Bay County, Florida County: Bay

Source Identification(s): Bay Resource Management Center (O'Connor Incinerator)

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Date: 8/1/87 Telephone: 412-636-5742

B. Professional Engineer:  
Charles B. Speicher, P.E. (Civil) Signature of Professional Engineer  
Name of Person Signing (Type)

Westinghouse Electric Corporation Penna. ~~XXXX~~ Registration No. 15472-E  
Company Name

Resource Energy Systems Division Date: 8/18/87  
2400 Ardmore Boulevard

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Best Available Copy



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET  
ATLANTA, GEORGIA 30365

OCT 03 1988

RECEIVED

4APT/APB-aes

OCT 11 1988

DER-BAQM

Mr. Clair H. Fancy, Deputy Chief  
Bureau of Air Quality Management  
Florida Department of Environmental  
Regulation  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399

Re: Bay County Waste-to-Energy Facility (PSD-FL-129)

Dear Mr. Fancy:

We have reviewed the preliminary determination and draft permit for the Bay County Waste-to-Energy Facility as well as the letter to you from Westinghouse. The permit was reviewed under the Region IV Overview of State Programs Policy. Our comments were discussed in a conversation on September 22, 1988, between Bill Thomas of your staff and Karrie-Jo Shell of my staff; our comments are:

Emission Limits

In order to effectively limit potential emissions of regulated pollutants, all emission limits must be tied to enforceable operating restrictions such as production, hours of operation, or materials processed per unit of time. These limitations must be shown to effectively limit the source's potential to emit for each pollutant. These requirements in limiting potential to emit are a result of a recent court decision, U.S. v. Louisiana-Pacific Corporation, which concluded that EPA can no longer recognize limits on actual emissions as being adequate for limiting a source's potential to emit unless the emission limits are also tied to other enforceable restrictions. For further explanation, refer to our May 13, 1988, letter to you which included an EPA memorandum entitled "Opinion in U.S. v. Louisiana-Pacific Corporation" dated December 23, 1987. Additionally, an emission limit for PM<sub>10</sub> should be included in the discussion of the projected pollutant emissions for this facility.

Compliance Testing

When designating the test method to be used for compliance testing, include which versions of 40 CFR Parts 60 and 61 to be used. Also, for pollutants not subject to testing provisions contained in 40 CFR Parts 60 or 61, specify a testing protocol, including each pollutant's sample volume, sampling time and the number of test runs for each test method specified.

Letter from Westinghouse Electric Corporation

Concerning item 4 in the letter, we object to using wood instead of fuel oil during start-up operations for the auxiliary fuel burners. Using wood would not ensure minimal particulate emissions prior to energizing the ESP.

In item 8, the word "average" must be defined. We recommend the average be determined by using the throughput for each municipal waste combustor over a three hour period.

Thank you for allowing us the opportunity to provide comments. If you have any questions, please contact Wayne Aronson or Karrie Shell of my staff at (404) 347-2864.

Sincerely yours,

*Bruce P. Miller*

Bruce P. Miller, Chief  
Air Programs Branch  
Air, Pesticides, and Toxics  
Management Division

cc: Bay County Waste-to-Energy Facility Contact

*copied: Pradeep Rawal  
Mary Andrews  
Tom Rogers  
Ed Middewant  
CHF/BT*

WESTINGHOUSE ELECTRIC CORPORATION  
RESOURCE ENERGY SYSTEMS DIVISION  
2400 ARDMORE BOULEVARD  
PITTSBURGH, PENNSYLVANIA 15221

(412) 636-5990  
(WIX) 261-5990

RECEIVED

OCT 5 1988

DER-BAQM

PLEASE DELIVER THE FOLLOWING PAGE(S) TO:

NAME: PRADDEEP RAVAL

AT: FLA-DER TELEPHONE 904/488-6579

FROM: D. Beachler

NUMBER OF PAGE(S): 3 (including cover page)

DATE: 10/4/88 TIME: 10:30 am

If you do not receive all of the above pages  
as soon as possible, please call us back  
at: (412) 636-

*Copied: Praddeep Raval  
Barbara Andrews  
Tom Rogers  
Ed Middlebrook, NW Dist  
Tom Moody, NW Dist  
Stacye Anderson, EPA  
Miguel Flores, NPS  
CHF/BT*

# RECEIVED

OCT 5 1988

**BAY COUNTY RESOURCE RECOVERY FACILITY  
POLLUTANT EMISSIONS PER MSW HIGH HEATING VALVES**

DER - BAQM

(PER UNIT)

MSW HHV Btu/lb	3600	4000	4500	5000	5500	6000
Feed Rate TPD	319	287	255	229	209	191
Thermal Input Btu/hr	95.6	95.6	95.6	95.6	95.6	95.6
PM @ 0.03gr/dscf @ 12% CO <sub>2</sub>						
lb/ton	0.51	0.57	0.64	0.71	0.78	0.85
lb/MMBtu	0.071	0.071	0.071	0.071	0.071	0.071
lb/hr	6.80	6.80	6.79	6.78	6.81	6.78
TPY	29.8	29.8	29.8	29.7	29.8	29.7
SO <sub>2</sub> 150 ppm @ 12% CO <sub>2</sub>						
lb/ton	2.70	2.99	3.37	3.74	4.12	4.49
lb/MMBtu	0.375	0.374	0.374	0.374	0.374	0.374
lb/hr	35.8	35.8	35.8	35.7	35.8	35.7
TPY	157.0	157.0	157.0	156.0	157.0	156.0
HCl @ 500 ppm @ 12% CO <sub>2</sub>						
lb/ton	4.64	5.15	5.79	6.44	7.08	7.72
lb/MMBtu	0.644	0.644	0.644	0.644	0.644	0.643
lb/hr	61.6	61.6	61.6	61.4	61.6	61.5
TPY	270.0	270.0	270.0	269.0	270.0	269.0

DATE: 10/03/88  
 TIME: 02:00 PM

PROGRAM: WASTE COMPOSITION

ASSUMPTIONS:

START WITH BAY CO WASTE AT 4500 BTU/LB  
 VARY THE COMPOSITION ASSUMING THE RATIO BETWEEN MOISTURE AND INERTS IS CONSTANT  
 THE RATIO AMONG CARBON, HYDROGEN, AND OXYGEN IS CONSTANT  
 NITROGEN AND CHLORINE REMAIN THE SAME

HHV BTU/LB	CARBON % WT.	HYDROGEN % WT.	OXYGEN % WT.	NITROGEN	SULFUR	CHLORINE	WATER % WT.	INERTS % WT.	TOTAL % WT.
4500.00	23.92	3.33	17.30	0.47	0.09	0.22	31.02	23.65	100.00
3600.00	19.14	2.66	13.84	0.47	0.07	0.22	39.09	27.51	100.00
3700.00	19.67	2.74	14.22	0.47	0.07	0.22	35.52	27.08	100.00
3800.00	20.20	2.81	14.61	0.47	0.07	0.22	34.96	26.66	100.00
3900.00	20.73	2.89	14.99	0.47	0.08	0.22	34.40	26.23	100.00
4000.00	21.26	2.96	15.38	0.47	0.08	0.22	33.84	25.80	100.00
4100.00	21.79	3.03	15.76	0.47	0.08	0.22	33.27	25.37	100.00
4200.00	22.33	3.11	16.15	0.47	0.09	0.22	32.71	24.94	100.00
4300.00	22.86	3.18	16.53	0.47	0.08	0.22	32.15	24.51	100.00
4400.00	23.39	3.26	16.91	0.47	0.09	0.22	31.59	24.08	100.00
4500.00	23.92	3.33	17.30	0.47	0.09	0.22	31.02	23.65	100.00
4600.00	24.45	3.40	17.68	0.47	0.09	0.22	30.46	23.22	100.00
4700.00	24.98	3.48	18.07	0.47	0.09	0.22	29.90	22.79	100.00
4800.00	25.51	3.55	18.45	0.47	0.09	0.22	29.33	22.36	100.00
4900.00	26.05	3.63	18.84	0.47	0.09	0.22	28.77	21.94	100.00
5000.00	26.58	3.70	19.22	0.47	0.10	0.22	28.21	21.51	100.00
5100.00	27.11	3.77	19.61	0.47	0.10	0.22	27.65	21.08	100.00
5200.00	27.64	3.85	19.99	0.47	0.10	0.22	27.08	20.65	100.00
5300.00	28.17	3.92	20.37	0.47	0.10	0.22	26.52	20.22	100.00
5400.00	28.70	4.00	20.76	0.47	0.10	0.22	25.96	19.79	100.00
5500.00	29.24	4.07	21.14	0.47	0.11	0.22	25.39	19.36	100.00
5600.00	29.77	4.14	21.53	0.47	0.11	0.22	24.83	18.93	100.00
5700.00	30.30	4.22	21.91	0.47	0.11	0.22	24.27	18.50	100.00
5800.00	30.83	4.29	22.30	0.47	0.11	0.22	23.71	18.07	100.00
5900.00	31.36	4.37	22.69	0.47	0.11	0.22	23.14	17.64	100.00
6000.00	31.89	4.44	23.07	0.47	0.12	0.22	22.58	17.22	100.00
6100.00	32.42	4.51	23.45	0.47	0.12	0.22	22.02	16.79	100.00
6200.00	32.96	4.59	23.83	0.47	0.12	0.22	21.45	16.36	100.00
6300.00	33.49	4.66	24.22	0.47	0.12	0.22	20.89	15.93	100.00
6400.00	34.02	4.74	24.60	0.47	0.12	0.22	20.33	15.50	100.00
6500.00	34.55	4.81	24.99	0.47	0.13	0.22	19.77	15.07	100.00
6700.00	35.61	4.96	25.76	0.47	0.13	0.22	18.64	14.21	100.00
6800.00	36.15	5.03	26.14	0.47	0.13	0.22	18.08	13.78	100.00
6900.00	36.68	5.11	26.53	0.47	0.13	0.22	17.51	13.35	100.00
7000.00	37.21	5.18	26.91	0.47	0.14	0.22	16.95	12.92	100.00

Barry

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

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



BOB MARTINEZ  
GOVERNOR  
DALE TWACHTMANN  
SECRETARY

September 16, 1987

Mr. Bruce P. Miller, Chief  
Air Programs Branch  
U.S. EPA - Region IV  
345 Courtland Street  
Atlanta, Georgia 30365

Dear Mr. Miller:

The Bureau of Air Quality Management has received notification that Westinghouse Electric Corporation would like to increase the municipal solid waste (MSW) throughput at their facility (Bay County Resource Recovery Facility) near Panama City, Florida. The request would involve increasing the throughput from the presently permitted value of 350 TPD to 510 TPD in order to handle additional tonnage that would originate from adjacent counties (see attached news release).

As a result of this MSW throughput increase, the emissions of NO<sub>x</sub> and SO<sub>2</sub> would increase by 14 and 76 tons per year respectively. This increase would result in a major modification for SO<sub>2</sub>, thereby requiring a BACT review. In accordance with this request, the Bureau is seeking your guidance.

Although the Bureau is well aware of EPA's feelings regarding BACT for new resource recovery facilities, we are uncertain as to how a BACT determination should be evaluated for SO<sub>2</sub> emissions from this existing facility. The manner in which this request should be handled is difficult to ascertain based on the permitting history of the facility. In order to better understand this situation it is well to provide some background information.

The Bay County Resource Recovery Facility (RRF) was designed to process a total of 510 TPD MSW. However, in accordance with the guaranteed amount of MSW that was available in Bay County, the applicant requested that the facility be permitted to burn 350 TPD of MSW and 178 TPD of wood wastes as a supplemental fuel.

On, August 3, 1987 the Bureau received Westinghouse's request to increase the MSW throughput at their facility. This request was based on the possibility of the Bay County RRF becoming a regional RRF, thereby requiring that the facility would need to




operate at full capacity (510 TPD) with MSW thus eliminating the need for supplementing with wood waste. This change in the quantity of MSW burned results in the SO<sub>2</sub> increase since the emission rate of SO<sub>2</sub> from MSW is much greater than that of wood wastes (3.37 and 0.3 pounds per ton respectively).

Upon evaluating this situation, the Bureau believes that the facility should be allowed to increase the MSW throughput to 510 TPD without having to take additional measures to control SO<sub>2</sub> emissions than were determined in the original BACT determination. It is clearly evident that Westinghouse requested a MSW throughput level which was below maximum capacity only because the County did not have an MSW generation rate which would necessitate operating at full capacity. In addition, the Bureau believes that if Westinghouse did initially apply to operate at full MSW capacity, the BACT determination would have been completed exactly as it stands today.

As you know, the permitting of resource recovery facilities has been subject to much controversy. As is the case, the Bureau does not want to proceed with this request without receiving Region IV's input.

Seeing that a MSW throughput increase for the Bay County Facility would do much to alleviate the present solid waste disposal problems in the area around Bay County, the Bureau would appreciate receiving your input as soon as possible. For your information, I have enclosed a summary of the recent stack testing results. If you have any questions, please contact Barry Andrews at (904) 488-1344.

Sincerely,

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

CF/BA/ss

Enclosures

cc: D. Beachler  
T. Moody

AUG 13 1981



Westinghouse Public Relations

Westinghouse Electric Corporation  
Westinghouse Building, Gateway Center  
Pittsburgh, Pennsylvania 15222

Contact: Kit Newton  
Telephone: (412) 642-3348

For Use: Immediate

#### OUT-OF-COUNTY GARBAGE EYED FOR BAY COUNTY RESOURCE RECOVERY PLANT

PANAMA CITY, Fla., Aug. 12 -- Westinghouse Electric Corporation is looking to Florida's Gulf and Jackson Counties for up to 160 tons per day of supplemental garbage to fuel the Bay Resource Management Center here.

The plant is capable of burning 510 tons of Bay County municipal solid waste per day to fuel a 12-megawatt power plant. Westinghouse, which operates the facility, presently processes about 310 tons of Bay County garbage each day. About 200 tons of wood waste is burned daily as a supplemental fuel.

"Our goal is to eliminate the use of wood waste," said John Zebroski, Westinghouse project manager. "Until the plant's entire waste capacity can be met from within Bay County, we hope to contract with nearby Gulf and Jackson Counties to each supply 80 tons of municipal solid waste daily," he said.

Under the corporation's plan, garbage from both counties would be compacted and brought to the plant by truck and/or rail.

-more-

Out-of-County Garbage Eyed  
For Bay Resource Recovery Plant

- 2 -

Elimination of the use of wood waste at the plant would have positive benefits to Bay County and its residents, Mr. Zebroski said.

"First, traffic in and out of the plant would be reduced. About 15 truckloads of wood waste now arrive and leave the plant each day. Compacted garbage brought to the plant from outside the county would reduce that traffic by half. Rail transportation would reduce the traffic even further."

The corporation also estimates that processing out-of-county wastes could lower "tipping fees" at the plant -- the prices garbage haulers pay to unload their cargo at the facility -- by between \$3 and \$4 per ton. "That would mean savings to Bay County residents on their garbage collection bills beginning in 1988," Mr. Zebroski said.

##F43-67##

-887-

TABLE 5  
 EMISSION FACTORS<sup>1</sup> FOR THE BAY COUNTY  
 FACILITY BURNING 510 TPD OF MSW THAT HAS A  
 HEATING VALUE OF 4500 BTU/LB (365 DAYS PER YEAR)

Pollutant	Emission Test Results 4/87-5/87 Per Train	Typical Emission Factors Concentration Corrected to 12% CO		6 lb/10 Btu	lb/ton	Total TPY
		2				
Particulate Matter	<0.03 gr/dscf	0.03 gr/dscf		0.06	0.54	50
CO	<400 ppm <sub>wv</sub>	<400 ppm (max 4 day ave)		0.398	3.58	666
NOx	148 ppm <sub>dv</sub> - 171 ppm <sub>dv</sub>	150 ppm (annual)		0.267	2.41	223
SO <sub>2</sub>	187 ppm <sub>dv</sub>	150 ppm (annual)		0.373	3.37	314
HC	---	35 ppm (annual)		0.0218	0.196	18.24
HCl	648 ppm <sub>dv</sub>	500 ppm (annual)		0.648	5.83	542

<sup>1</sup>Based on emission test data from Bay County and other facilities.

9/13/87  
Pittsburg, PA



Barry

Westinghouse  
Electric Corporation

Resource Energy Systems  
Division

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

ENG/MG:DSB:87-099

September 3, 1987

DER

SEP 4 1987

BAQM

Barry Andrews  
Florida DER  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, FL 32301

Dear Barry:

Per our conversation on September 3, 1987 I am enclosing a copy of a news release describing the current negotiations with Gulf and Jackson Counties for additional waste to be burned in the Bay County Resource Management Center. As I stated in my letter to Clair Fancy dated August 13, 1987 (and carbon copy to you), the county originally submitted permit applications that reflected the committed waste contracts at the time of the permit application submission.

We would like you to request a ruling from the EPA to burn the additional waste when it becomes available.

If you have any questions, please call me at (412) 636-5806.

Thank you for your assistance in this matter.

Sincerely,

A handwritten signature in black ink that reads "D. S. Beachler". The signature is written in a cursive style with a large, sweeping flourish at the end.

D. S. Beachler, Manager  
Environmental & Quality Engineering

/tlb  
0676MM-3  
(F0058)

cc: J. J. Ludwig  
J. J. Zebroski  
W. G. Collins

Copied: B. Andrews } 9/14/87  
CH Jancy }

AUG 13 1987



Westinghouse Public Relations

Westinghouse Electric Corporation

Westinghouse Building, Gateway Center  
Pittsburgh, Pennsylvania 15222

Contact: Kit Newton  
Telephone: (412) 642-3348

For Use: Immediate

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-more-

Out-of-County Garbage Eyed  
For Bay Resource Recovery Plant

- 2 -

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##F43-67##

-887-

913187  
Pittsburg, PA



Westinghouse  
Electric Corporation

Resource Energy Systems  
Division

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

ENG/MG:DSB:87-099

September 3, 1987

DER

SEP 4 1987

BAQM

Barry Andrews  
Florida DER  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, FL 32301

Dear Barry:

Per our conversation on September 3, 1987 I am enclosing a copy of a news release describing the current negotiations with Gulf and Jackson Counties for additional waste to be burned in the Bay County Resource Management Center. As I stated in my letter to Clair Fancy dated August 13, 1987 (and carbon copy to you), the county originally submitted permit applications that reflected the committed waste contracts at the time of the permit application submission.

We would like you to request a ruling from the EPA to burn the additional waste when it becomes available.

If you have any questions, please call me at (412) 636-5806.

Thank you for your assistance in this matter.

Sincerely,

A handwritten signature in dark ink that reads "D. S. Beachler".

D. S. Beachler, Manager  
Environmental & Quality Engineering

/tlb  
0676MM-3  
(F0058)

cc: J. J. Ludwig  
J. J. Zebroski  
W. G. Collins

Copied: B. Andrews } 9/14/87  
CH Jancy }



AUG 13 1987



Westinghouse Public Relations

Westinghouse Electric Corporation  
Westinghouse Building, Gateway Center  
Pittsburgh, Pennsylvania 15222

Contact: Kit Newton  
Telephone: (412) 642-3348

For Use: Immediate

OUT-OF-COUNTY GARBAGE EYED FOR BAY COUNTY RESOURCE RECOVERY PLANT

PANAMA CITY, Fla., Aug. 12 -- Westinghouse Electric Corporation is looking to Florida's Gulf and Jackson Counties for up to 160 tons per day of supplemental garbage to fuel the Bay Resource Management Center here.

The plant is capable of burning 510 tons of Bay County municipal solid waste per day to fuel a 12-megawatt power plant. Westinghouse, which operates the facility, presently processes about 310 tons of Bay County garbage each day. About 200 tons of wood waste is burned daily as a supplemental fuel.

"Our goal is to eliminate the use of wood waste," said John Zebroski, Westinghouse project manager. "Until the plant's entire waste capacity can be met from within Bay County, we hope to contract with nearby Gulf and Jackson Counties to each supply 80 tons of municipal solid waste daily," he said.

Under the corporation's plan, garbage from both counties would be compacted and brought to the plant by truck and/or rail.

-more-

Out-of-County Garbage Eyed  
For Bay Resource Recovery Plant

- 2 -

Elimination of the use of wood waste at the plant would have positive benefits to Bay County and its residents, Mr. Zebroski said.

"First, traffic in and out of the plant would be reduced. About 15 truckloads of wood waste now arrive and leave the plant each day. Compacted garbage brought to the plant from outside the county would reduce that traffic by half. Rail transportation would reduce the traffic even further."

The corporation also estimates that processing out-of-county wastes could lower "tipping fees" at the plant -- the prices garbage haulers pay to unload their cargo at the facility -- by between \$3 and \$4 per ton. "That would mean savings to Bay County residents on their garbage collection bills beginning in 1988," Mr. Zebroski said.

##F43-67##

-887-

14 Aug 87  
Pittsburg, PA



Westinghouse  
Electric Corporation  
ENG/MG:DSB:87-089

Resource Energy Systems  
Division

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

August 13, 1987

Clair Fancy  
Florida DER  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, FL 32301

State Permit: AC 03-84703 & 84704  
PSD #: PSD-FL-103

Dear Clair:

We have been talking recently with Barry Andrews and Bill Thomas of the Florida DER concerning the Bay County Resource Recovery Facility. Permit applications were submitted to your office in March 1984 to obtain permission to construct a resource recovery facility consisting of 2 combustor/boiler trains capable of processing 255 TPD MSW each (510 TPD total). The original application stated that the likely total waste to be processed at the facility would be 300 to 350 TPD MSW and 135 to 178 TPD wood waste. These values were based on the guaranteed amount of MSW that was available in Bay County and from the local waste haulers. The facility maximum rated capacity (MCR) is 510 TPD MSW and it appears that additional MSW is now available from adjacent counties so that this facility could now operate at the maximum rate.

The emission compliance test report and a separate emission factor report for SO<sub>2</sub>, NO<sub>x</sub>, HCl, and CO emissions were mailed in late July to Tom Moody and Bill Thomas. These reports indicate that the facility is operating in compliance with the permit conditions at its maximum rated capacity.

DER  
AUG 17 1987  
BAQM

Florida DER permit numbers AC 03-84703 and AC 03-84704 state that the facility can process a maximum of 350 TPD MSW along with 135 TPD wood waste. The County had hoped to be permitted to operate the facility at the maximum capacity once the waste was available. Now, because of the recent availability of MSW, the facility would like to obtain permission to burn 510 TPD MSW and operate the facility continuously at this rate.

If you have any questions, please call me at (412) 636-5806.

Sincerely,



David S. Beachler, Manager  
Environmental & Quality Engineering

/t1b  
0675MM-087E-2

cc: Barry Andrews, Florida DER  
Bill Thomas, Florida DER  
Tom Moody, Florida DER Pensacola Office  
Greg Pennington, Bay County Resource Recovery Facility

copied: CHFIRT

Wayne Aronson - EPA

Pradeep Raval

Barry Andrews

} 8/17/87 (mr.)

14 Aug 87  
Pittsburg, PA



Westinghouse  
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Sincerely,

*David S Beachler*

David S. Beachler, Manager  
Environmental & Quality Engineering

/tlb  
0675MM-087E-2

cc: Barry Andrews, Florida DER  
Bill Thomas, Florida DER  
Tom Moody, Florida DER Pensacola Office  
Greg Pennington, Bay County Resource Recovery Facility

copied: CHFI/RT

*Wayne Aronson-EPA  
Pradeep Raval  
Barry Andrews*

*8/17/87 (mr)*