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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30365

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

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

Dear Mr. Fancy:

We have reviewed the final determination and final permit for the modification of the Bay County Waste-to-Energy Facility. We concur with Florida's evaluation of this project.

Sincerely yours,

Bruce P. Miller

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

cc: Bay Resource Management Center
Westinghouse RESD
Cost Building
2400 Ardmore Blvd.
Pittsburgh, PA 15221

copied: Pradeep Raval
Barry Andrews
Tom Rogers
Ed Middlesworth, NW Dist
CHF/BT

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

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CHAPTER 8

MEASURING, RECORDING, AND REPORTING REQUIREMENTS

8.1 Introduction

The development of a continuous emissions monitoring system extends beyond the choice of a set of opacity and gas analyzers. The analyzers, themselves, must measure emissions within specified time periods. The measurements, however, then must be recorded in some manner. After the data are recorded, they must be converted into units of the emissions standard, such as lbs/10^6 Btu.

Calculated emission values that are in excess of the standard must then be reported on a quarterly basis to the EPA Administrator. In addition, the EPA regulations of 40 CFR 60.7 require the reporting of the following:

- Time and magnitude of excess emissions
- Nature and/or cause of excess emissions
- Corrective and/or preventative action taken to prevent their recurrence
- Zero/span calibration values
- Normal measurement data
- Log of inoperative periods
- Repair and maintenance logs
- Performance, test, calibration data

A complete emissions monitoring system, therefore, requires some means of recording the analyzer data. Strip-chart recorders have been used most often, but data loggers and computer systems are beginning to become popular. Data processors have been developed specifically to reduce the time necessary to evaluate and report excess emissions. A summary of the process of measuring-recording-reporting is given in Figure 8-1.

A data reporting system may encompass anything from the manual reduction of raw strip chart data and compilation of associated data to the near fully automatic preparation of complete excess emission reports, including most of the mentioned data requirements. The choice of the data reduction and reporting system may be the most important factor in the overall emission monitoring system, since it greatly affects the amount of manual effort involved in meeting the NSPS requirements.

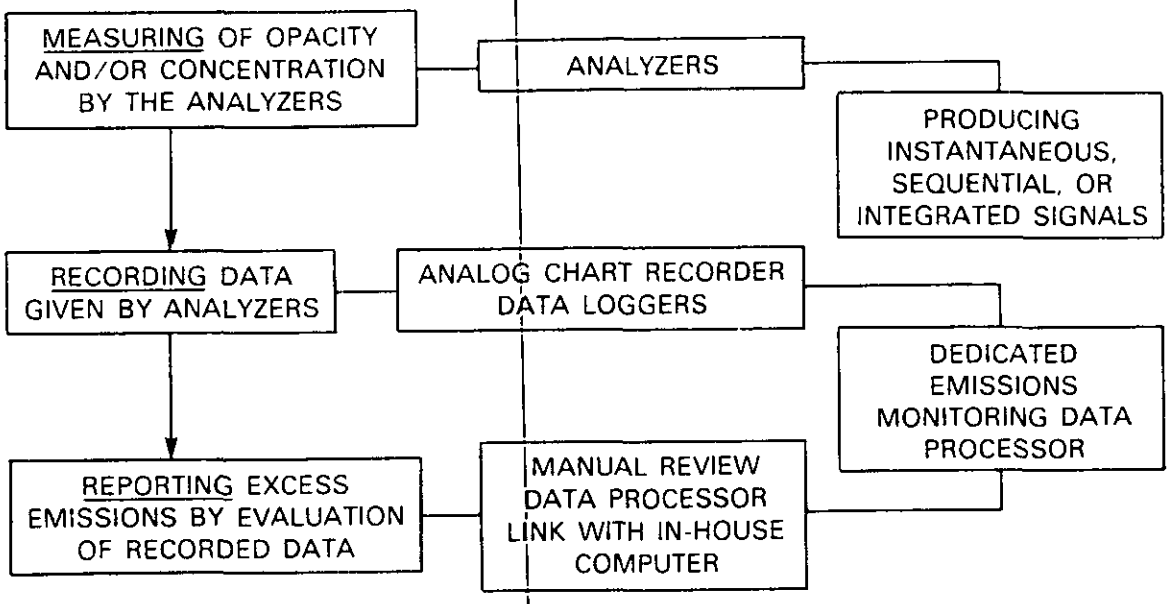

FIGURE 8-1

POSSIBLE METHODS OF MEASURING-RECORDING-REPORTING

This chapter will review some of the techniques and problems involved in completing an emissions monitoring system. A discussion is given in Appendix C on the F-factor method used by the EPA in converting concentration data into the units ($lb/10^6$ Btu) required by the New Source Performance Standards.

8.2 Measuring Requirements

The measuring requirements for continuous emissions monitors are important, since they can influence the choice of the recording system. The requirements for systems applied to new sources (NSPS) are given in Table 8-1.

TABLE 8-1

MEASURING REQUIREMENTS

Opacity – Monitors	Completion of one cycle of operation (sampling and analysis) every 10 seconds
SO_2, NO_x, CO_2, O_2 –	Completion of one cycle of operation (sampling and analysis) every 15 minutes

The data generated by the monitoring instrument give much more information than is actually required. The measuring periods given in Table 8-2, for gases, allow for the use of sequential analyzers or systems designed to sample from more than one stack or duct. The DuPont UV 463 analyzer is an example of a sequential system, since it operates on 5-minute cycles to convert NO to the measured NO_2. Monitoring systems that come under the State plans (existing sources) may have measuring requirements different from those given above.

The actual data that can be used to satisfy these measuring requirements may be of three types:

- Instantaneous values taken at the end of each time period
- Values obtained by integrating data over each time period
- Values obtained by averaging a number of data points over each time period

The method used often will be determined by the type of gas and opacity analyzers purchased and by the recording method. The measuring requirements are tied in with the recording requirements. A consideration of both often will dictate the choice of the complete monitoring system.

8.3 Recording Requirements and Systems

8.3.1 Requirements

All of the data that an emissions monitor may produce do not need to be recorded. The NSPS requirements for recorded emissions data are given in Table 8-2.

TABLE 8-2

RECORDING REQUIREMENTS

Opacity –	An average of a minimum of 24 equally spaced data points taken over a 6-minute period is to be recorded every 6 minutes.
SO_2, NO_x, CO_2, O_2 –	An average of a minimum of 4 equally spaced data points taken over an hour is to be recorded every hour.

Since a monitor may produce a continuous trace on a strip chart for a 6-minute or 1-hour period, a larger amount of data may be obtained than is actually used. The regulation, however, specifies only the minimum number of points that need to be averaged and

recorded. It is often easier to design systems that integrate the continuous data over the averaging periods. These would be acceptable under the regulations.

The recording requirements were established to coincide roughly with the type of data obtained from the manual EPA reference methods. Since it was hoped to correlate in-stack opacity data with the visible emissions data obtained by an observer using EPA Method 9, the same averaging and recording requirements were given. It should be noted that by dividing 24 into 6 minutes (360 seconds), the recording requirements give a 15-second measuring time. Opacity monitors are, however, required to complete one cycle of measurement every 10 seconds as discussed in Section 9.2. This inconsistency is not particularly important, since an average of 36 data points would serve just as well to satisfy the regulation. Integrating systems for the analyzer generally are available as an option for some opacity monitors.

EPA Method 6 for SO_2 specifies a 20-minute sampling time (for fossil-fuel-fired steam generators). EPA Method 7 for NO_x specifies 4 grab samples to be taken at 15-minute intervals. The continuous monitoring regulation for SO_2 and NO_x analyzers of an average of 4 data points taken over each 1-hour period corresponds roughly with these reference methods.

The recording requirements for monitoring systems on existing sources covered by a State plan may be somewhat different than those given in Part 60 of the Code of Federal Regulations. The State averaging periods are chosen to correspond to the averaging period specified by the State compliance test method. Further information should be obtained from the State if the compliance test methods differ from the Federal methods.

8.3.2 Recording Systems – Continuous Analog Recording

There are a variety of methods used to record data from analytical devices. The strip-chart recorder is encountered most frequently in continuous source monitoring applications. However, the availability of low-cost digital recording devices provides alternatives for the recording and processing of emissions data.

A continuous analog record is obtained by using some type of chart recorder. The voltage or current signal from the source analyzer is fed into the recorder and a driving mechanism produces a trace of the signal strength as a function of time. The types of analog recorders most often encountered in engineering applications are either circular-chart or strip-chart recorders.

The circular-chart recorder, although used extensively in process control applications has some disadvantages in recording emissions data. First, the chart length for a single chart is limited. For instance, the length of a trace at 50 percent of full scale on a 12-inch diameter chart would be only 21 inches. A 20 percent opacity trace would give an even

smaller effective chart length and would require frequent changing of the chart paper. Second, the curved lines of the circular-chart paper make it difficult to compare and interpret data. Time resolution becomes poorer at smaller values of the measured parameter. On the other hand, circular-chart recorders present all of the data at a glance for a given time period. They have been developed to be used in many types of field situations and may be obtained at relatively low cost.

Strip-chart recorders provide greater versatility in monitoring applications. There are over 100 companies marketing some form of strip-chart recorder in the United States today. This method dominates the recording field for several reasons:

- It is the only feasible way of making long-term, easy-to-read records of high-speed phenomena.
- It is highly efficient in its ability to pack information into available space.
- Proper arrangements make it easy to analyze multiple-trace data.
- On a per-square-foot basis, the paper is almost always much less costly than that for circular charts.

There are a number of factors that should be considered when evaluating a recorder for a given systems application. An evaluation should consider:

- Type of unit – Portable, rack-mountable, or table model
- Type of signal input (volts, millivolts, amps) accepted and range
- Type of pen (capillary, felt tip, heated stylus, electrically charged stylus)
- Type of paper take-up (take-up roll, folded paper)
- Appropriate chart speed
- Accuracy as percent of full scale
- Response time consistent with EPA emissions monitoring requirements
- Chart supply provisions – At the required chart speed, number of days' supply of chart paper that can be stored in the unit
- Maintainability – Features that may enhance the serviceability and reliability of the instrument

Since the recorder is a part of the continuous monitoring system, the response time, drift, and accuracy requirements established in the EPA performance specifications must be considered when choosing the recorder itself. If a recorder is chosen that has poor response time and limitations in recording accuracy, the overall monitoring system will suffer. There are many factors that contribute to the relative inaccuracy (relative to the EPA reference method) of a monitoring system. The recording system does not need to be one of these factors if a proper choice of the system is made initially.

8.3.3 Recording Systems – Intermittent Digital Recording

The analog chart recorders give a continuous record of the signal produced by an analyzer. The digital recorder or data logger, however, selects some value (either an instantaneous or integrated value) after a given time period and records it. For this reason, a digital system may be characterized as recording data over intermittent periods. These periods may be short, a tenth or hundredth of a second or less; but for too short a period, the printed data produced might be unmanageable.

It should be noted that a data logger is not a computer or a microprocessor. A computer can process data, convert it into emission rates, and record it in specified formats. Data loggers merely record data at specified intervals. There are two options available on digital recorders that extend their utility. These are an alarm monitoring capability and the ability to print out by exception. A data logger, therefore, could be set to send off an alarm or print out data once a specified value is reached. It could not, however, compute the emission rate by the F-factor method and print it. A microprocessor or computing system would be necessary in this case.

There are several advantages to digital instruments (1):

- They produce a permanent printed output record that can be readily understood without having to interpret tracings, as in the case of a chart recorder.
- They can be modified to provide values that can be read directly (ppm, percent).
- Data can be read quickly with less chance of misinterpretation.
- Since the data have already been converted into digital form, the data logger can be interfaced easily with a computer.
- The data may be duplicated easily, without the problems of shrinking or distortion that may occur with a strip-chart record.

There are a few significant disadvantages with digital recording systems, such as the following:

- They are more complex and more difficult to troubleshoot than an analog recorder.

- It is more difficult to detect trends from data given by a digital recorder.

- It is more difficult to compare digital data, either between different instruments or over different time periods.

- It is difficult to troubleshoot intermittent or peculiar causes of failure, since the data are averaged and an instantaneous signature of the system is not available as with a strip-chart recorder.

The difficulty of detecting trends has been overcome in some systems by recording the digital data on cassette tape. The tape can be read off on a computer and the data for the time period of interest then can be graphed automatically with a plotter. This method provides a convenient means of storing the continuous monitoring record. Cassette tapes are easily handled and cataloged and detailed graphs need only be reproduced when desired.

8.3.4 Recording Systems – Data Processors

The most convenient method of handling continuous monitoring data is with a data processor. Several firms involved in the manufacture of stack monitors have seen the need for the instrumentation that will rapidly average and compute data in terms of the emission standard. An example of the type of data that can be produced by a computerized system is given in Figure 8-2.

Formats of course can vary, but it is important to eliminate the manual task of reducing the data. The preparation of the required EPA quarterly reports then becomes much easier.

There are two data processing methods that generally are used in continuous monitoring systems. These are:

- Analyzer – Analog-to-digital (A/D) – Large general purpose computer or data processing system

- Analyzer – Dedicated continuous monitor data acquisition system

The first method utilizes the plant computer or data processing system. The analog signals from the flue gas monitors first must be converted into digital form by use of a data logger or an A/D converter; however, the data processing system may already have this feature as a part of its software. The digital signals then are sent to the computer, which is programmed to accept them and perform the necessary calculations for the resultant printout. There are several problems with this method. First, the plant computer, designed or purchased for process applications, may not have enough storage or programming facility to accommodate the continuous-monitoring requirements. Second, when the computer is down, the continuous-monitoring data may be lost or difficult to retrieve. The in-house

EMISSIONS SUMMARY REPORT

HOURLY REPORT
06/16/75 TIME: 0600-0700

OPACITY, %	14.770	.770	14.770	11.474	18.823
(6 MIN AVGS)	14.770	14.770	14.770	14.770	14.770

HOURLY AVG-	OPAC	PART	SO2	NO	O2
INDICATED	--	--	544.92	373.53	3.7246
ZERO CAL	.0244	--	65.185	22.705	2.0214*
SPAN CAL	40.136	--	1177.7	1150	8.872*
CORRECTED	14.846	.0139	533.02	389.80	4.1383
LB/MBTU	--	.0278	1.1051	.3876	--
#LB/HR	--	.0479	1.9602	.672	--
NOTES	CN				CB

Q-SCFM*10E3	V-IND	V-AVG	DIA-FT
403.06	32.382	37.807	20

HEAT-MBTU/HR	T	P	H2O-%	MW
1722.5	500	417	10	30.5

DAILY REPORT
06/16/75

	OPACITY		SO2		NO	
PERIOD	6MIN.INT NUMBER	AV.MAG %	3HR.INT NUMBER	AV.MAG LB/MBTU	3HR.INT NUMBER	AV.MAG LB/MBTU
0000-0300	0	--	1	1.24	0	--
0301-0600	0	--	0	--	0	--
0601-0900	0	--	0	--	0	--
0901-1200	1	21.6	1	1.32	1	0.92
1201-1500	2	23.4	1	1.65	1	0.84
1501-1800	5	25.6	1	1.63	1	0.75
1801-2100	1	22.7	0	--	0	--
2101-2400	0	--	0	--	0	--

FIGURE 8-2

DATA FROM TYPICAL DATA PROCESSOR DESIGNED FOR CONTINUOUS SOURCE MONITORING APPLICATIONS

computer capability and existing utilization will have a direct bearing on any decision to extend its use to continuous-emissions-monitoring applications.

The second method involves making a major purchase for a system that will be dedicated to processing only the continuous monitoring data. A number of systems are available on the market that are designed to do this. These systems can average automatically opacity and gaseous emissions data, can compute emissions by the F-factor method using the input of the pollutant gas and diluent gas monitor, and can provide a summary report of the data on an hourly, weekly, or monthly basis. The systems can generate an alarm signal and also may record the data on magnetic tape. The Emissions Summary Report shown in Figure 8-2 is an example of the type of output that can be produced.

The dedicated systems may save time and money in the long run. Many source operators will first purchase the gas analyzers and rely on strip-chart output for the data-recording requirements. If the monitoring system is working properly and the data are reliable, consideration is given to a data processor in order to reduce the amount of time spent analyzing what can amount to volumes of data. Many operators have found it convenient to keep the chart recorders to provide an easily interpreted record of the trends occurring during the source operation. Cross checks then can be made between the two systems; if either malfunctions, the data may not be lost.

8.4 Reporting Requirements

Continuous-emissions-monitoring data, obtained for the purpose of satisfying the EPA regulations, must be reported on a quarterly basis. The originally proposed regulations, which appear in the Federal Register, September 11, 1974, required that all of the data were to be reported to the EPA office. This proposal received a large number of comments from both agency and industry personnel. It was generally felt that the amount of data would be excessive and that the expense and manpower involved would be unjustified. Changes were subsequently made in the promulgated October 6, 1975, regulations, effectively requiring the reporting of only excess emissions.

Excess emissions are defined in the Subpart of the Code of Federal Regulations dealing with the affected industry. In Subpart D 40 CFR 60, for example, excess emissions are defined for fossil-fuel-fired steam generators. Under 40 CFR 60.45g:

- Opacity. Excess emissions are defined as any 6-minute period during which the average opacity of emissions exceeds 20 percent, except that one 6-minute average per hour of up to 27 percent opacity need not be reported.

- Sulfur dioxide. Excess emissions for affected facilities are defined as any 3-hour period during which the average emissions (arithmetric average of three contiguous 1-hour period) of sulfur dioxide as measured by a continuous monitoring system exceed the applicable standard under § 60.43.

- Nitrogen oxides. Excess emissions for affected facilities using a continuous monitoring system for measuring nitrogen oxides are defined as any 3-hour period during which the average emissions (arithmetic average of three contiguous 1-hour periods) exceed the applicable standards under § 60.44.

Excess emissions may be defined differently for sources other than fossil-fuel-fired steam generators. Reference should be made to the appropriate subparts of the Code of Federal Regulations for the promulgated emission standards and average times (e.g., Subpart J for petroleum refineries, see Table 2-2 for a reference listing of the CFR subparts).

Since a majority of the sources affected by the continuous-monitoring requirement will be coal- and oil-fired power plants, a few additional comments on the excess emissions defined in Subpart D are appropriate.

- The definition of excess emissions for opacity appeared December 5, 1977, in 42 FR 61537. Note that an exception of one 6-minute period at a level of 27 percent opacity is allowed. Prior to this promulgation, 2 minutes of soot blowing at 40 percent opacity were allowed. This soot blowing allowance was retained, but expressed in terms of the 6-minute average, i.e.,

$$27\% \text{ allowable opacity} = \frac{2 \times 40\% + 4 \times 20\%}{6}$$

- Standards for SO_2 and NO_x emissions from fossil-fueled steam generators are expressed in lbs/10^6 heat input. The emissions are to be calculated by using the F-factor method. The F-factor method essentially reduces the amount of data necessary to compute the emissions rate. A thorough explanation of the method is given in Appendix C.

- Only excess emissions are required to be reported. All of the data produced by a continuous source analyzer need not be converted into units of the standard. Only the data reported as being in excess of the standard has to be expressed in these terms. However, there should be some means to single out excess emissions from the unreduced data. A source with varying emission and excess air rates may have to convert all of the data into units of the standard. See the preamble on page 46250 of the October 6, 1975, Federal Register for further clarification.

Reports of excess emissions determined from a continuous monitoring system are to be reported on a quarterly basis. Each period of excess emissions also requires an explanation of the reasons for the high values. These may be identified as startups, shutdowns, or malfunctions of the affected facility. Also, if there were no periods of excess emissions during the reporting quarter, a report to that effect must be made.

The problem of monitoring equipment malfunctions is a matter of serious concern to the continuous monitoring program. It is obvious that an improperly operating continuous monitor serves neither the source operator nor the control agency. In order to keep aware of the instrumental problems that inevitably develop, occasions of instrument downtime, repair, or significant readjustment also must be documented and explained in the quarterly report. Many agencies are now developing inspection programs for these systems in an effort to insure that reliable emissions data can be obtained.

The source operator also must maintain a file of all of the continuous monitoring data, including records of the Performance Specification Test, adjustments, repairs, and calibration checks. The file must be retained for at least 2 years and is required to be maintained in such a condition that it can be easily inspected by a field enforcement officer.

The details of the reporting requirements are given in 40 CFR 60.7. Although no specific format for the quarterly reports is required, the EPA Office in Region 8 has developed a form for their use that includes the points required by the Code of Federal Regulations (Figure 8-3). Although other formats may be suitable, this format could serve as a guide for these reports.

QUARTERLY EXCESS EMISSIONS REPORT (EER)

For

Fossil Fuel-Fired Steam Generators, Subpart D

Suggested Format for Sources in Region VIII*

Minimum Requirements Under Section 60.7 (see instructions)

Part 1. This report includes all the required information under section 60.7 for:

a. Quarterly emission reporting period ending: (circle one)

Mar. 31 June 30 Sept. 30 Dec. 31

b. Reporting year: _____

c. Reporting date: _____

d. Person completing report: _____

e. Station name: _____

f. Plant location: _____

g. Person responsible for review and integrity of report:

h. Mailing address for person in 1-g above:

i. Phone number for 1-g, above:

Part 2. Instrument Information, complete for each instrument

a. Monitor type (circle one): Opacity SO_2 NO_x O_2 CO_2

b. Manufacturer: _____

c. Model no.: _____

d. Serial no.: _____

e. Installation date: _____

Part 3. Excess emissions (by pollutant)

Use Table I: Do not complete for diluent monitors; attach separate narrative per instructions.

FIGURE 8-3

SUGGESTED FORMAT FOR QUARTERLY EXCESS EMISSIONS REPORT

Part 4. Conversion factors (not for diluent monitor report)

a. Diluent measured (O_2 or CO_2) _____

b. F-Factor value used _____

i. Published or developed _____

ii. F, Fc, or Fw _____

c. Basis for gas measurement data (wet or dry)

d. Zero and Cal values used, by instrument:

	Opacity (%)	SO_2 (ppm)	NO_x (ppm)	Diluent (% or ppm - circle one)
Zero	_____	_____	_____	_____
Cal	_____	_____	_____	_____

Part 5. Continuous Monitoring System operation failures

See Table II: Complete one sheet for each monitor, including diluent: attach separate narrative per instructions.

Part 6. Certification of report integrity, by person in 1-g, above:

THIS IS TO CERTIFY THAT TO THE BEST OF MY KNOWLEDGE, THE INFORMATION PROVIDED IN THE ABOVE REPORT IS COMPLETE AND ACCURATE.

NAME _____

SIGNATURE _____

TITLE _____

DATE _____

*Suggested Format for Subpart D sources in: Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming

FIGURE 8-3

SUGGESTED FORMAT FOR QUARTERLY EXCESS EMISSIONS REPORT—Continued

TABLE Ia - Excess Emissions Summary by Week[1]

OPACITY: Week[6] _____ Day[7] _____ Limit _____

Excess Emission Range Category	Percent of Emission Limit	Number of 6-Minute Periods During Day[2]	Reason Codes[3]
A	100-125		
B	126-150		
C	151-175		
D	176-225		
E	> 225		

SO_2 Week[6] _____ Limit _____

Excess Emission Range Category	Percent of Emission Limit	Number of 3-Hour Periods During Week[2]	Reason Codes[3]
A	101-108		
B	109-120		
C	121-135		
D	136-155		
E	> 155		

NO_x Week[6] _____ Limit _____

Excess Emission Range Category	Percent of Emission Limit	Number of 3-Hour Periods During Week[2]	Reason Codes[3]
A	101-108		
B	109-120		
C	121-135		
D	136-155		
E	> 155		

1 Format to be used in automatic data-handling systems; Table I (2) to be used in manually-prepared reports to show each excess emission.

2 As defined in 60.45(g).

3 List in descending order the three most frequent codes, by number, followed in parenthesis by the number of occurrences of the reason.

6 Begin Sunday morning at midnight; list date of the Sunday starting the week.

7 List the day of the week; e.g., Tuesday.

FIGURE 8-3

SUGGESTED FORMAT FOR QUARTERLY EXCESS EMISSIONS REPORT—Continued

TABLE I

Excess Emissions (by pollutant)

Date	Time From - To	Pollutant	(% O_2 or CO_2)	Magnitude* Lb./10^6 BTU

*as defined in the instructions from the applicable section of the Federal Register; attach narrative of causes, etc.

TABLE II

Continuous Monitoring System Operation Failures

Date	Time* From - To	Instrument	Effect on Instrument Output

*attach narrative of causes, etc.

FIGURE 8-3

SUGGESTED FORMAT FOR QUARTERLY EXCESS EMISSIONS REPORT—Continued

8.5 References

1. Quinn, G. C., "Recording Instruments – A Special Report," Part I, *Power*, December 1977, pp. s1-s28, Part 2, *Power*, January 1978, pp. s9-s18.

2. Floyd, J. R., "The Implementation of the NSPS Continuous Emission Monitoring Regulations in EPA, Region VIII," Paper 78-35.1, presented at the 71st Annual Meeting of the Air Pollution Control Association, Houston, Texas, June 25-30, 1978.

8.6 Bibliography

McGowan, G. F., "Discussion of Alternative Emission Measurement Schemes for Wet Scrubber Applications," Unpublished Monograph – Contact G. F. McGowan of Lear Siegler, Inc.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30365

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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_{10} 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 Layne Aronson or Karrie Shell of my staff at (404) 347-2864.

Sincerely yours,

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

cc: Bay County Waste-to-Energy Facility Contact

WESTINGHOUSE ELECTRIC CORPORATION

RESOURCE ENERGY SYSTEMS DIVISION
2400 ARDMORE BOULEVARD
PITTSBURGH, PENNSYLVANIA 15221

(412) 636-5990
(WIN) 261-5990

PLEASE DELIVER THE FOLLOWING PAGE(S) TO:

NAME: Pradeep Raval

AT: FLA-DER TELEPHONE # 904/488-6579

FROM: D. Beachler

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

DATE: 10/4/88 TIME: 10:20 am

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

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Tom Woods, NW Dist.
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Miguel Flores, NPS
CHF/BT

BAY COUNTY RESOURCE RECOVERY FACILITY
POLLUTANT EMISSIONS PER MSW HIGHER HEATING VALUES

(PER UNIT)

output (low & latent heat)

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 (95.7)	95.6 (95.66)	95.6 (95.62)	95.6 (95.42)	95.6 (95.3)	95.6 (95.5)
PM @ 0.03gr/dscf @ 12% CO_2							
	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_2 150 ppm @ 12% CO_2							
	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_2							
	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

$$3600\ \frac{Btu}{lb} \times 319\ \frac{T}{D} \times \frac{D}{24\ H} \times 2000\ \frac{lb}{T} = 95.7$$

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

PROGRAM: WASTE COMPOSITION

ASSUMPTIONS:

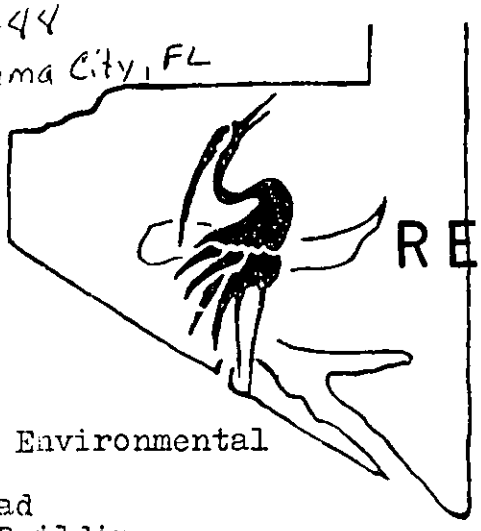
START WITH BAY CO WASTE AT 4500 BTU/LB
VARY THE COMPOSITION ASSUMING THE RATIO BETWEEN MOISTURE AND INERTS IS CONSTANT
THE RATIO AMONG CARBON, HYDROGEN, AND OXYGEN IS CONSTANT
NITROGEN AND CHLORINE REMAIN THE SAME

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	36.08	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	0.08	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	22.68	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	13.36	100.00
7000.00	37.21	5.18	26.91	0.47	0.14	0.22	16.95	12.92	100.00

PM
9-19-44
Panama City, FL

file copy

"FROM BIRDWATCHING TO THE TOTAL ENVIRONMENT"



RECEIVED
SEP 20 1988
DER - BAQM

September 17, 1988

Mr. Clair Fancy
State Department of Environmental Regulation
2600 Blair Stone Road
Twin Towers Office Building
Tallahassee, Florida 32301

Dear Mr. Fancy:

I am writing to outline the reasons for our objection to the granting of permits nos. AC 03-145061 and AC 03-152196. These permits involve increasing the charging rate of municipal solid waste (MSW) from 350 tons per day to 510 tons per day at the Bay County Resource Recovery Facility.

The proposed project will result in a net significant increase in SO_2 emissions as well as increases in particulate matter, carbon monoxide, nitrogen oxides, VOC, lead, mercury, beryllium, fluoride, sulfuric acid mist, and hydrogen chloride. The emission of furans, dioxins, and other carcinogenic compounds will undoubtably also increase. A BACT review demonstrates that the cost per ton of overall pollutants controlled by dry scrubbers would be $1863. The EPA has considered costs of up to $2000 per ton as being reasonable. Yet your agency did not require the Bay County Resource Facility to add these scrubbers.

The Bay County Resource Recovery Facility was not initially intended to be a regional waste to energy facility. Therefore your objection that the time period needed to install additional equipment would be detrimental to attracting waste from surrounding counties is invalid.

The new Steelfield landfill is designed to handle MSW in the event that that the Bay County Resource Recovery Facility is shut down. Therefore your objection to a plant shutdown to install additional pollution control equipment based on the lack of an alternative disposal site for waste is invalid.

If the EPA is in the process of developing a policy in regard to the control equipment requirements for existing municipal waste combustors, then it follows that a decision on this permit should be delayed or denied until the EPA's final policy is released.

9-16

Bay Co -

Audubon society will send comments next week - gave to Pradeep - He can write permit addressing comments in F.O. Have ready for CHF when he returns 10/10. Get signed that week - cc Audubon - they can request mtg. w/CHF to discuss if not satisfied - Give CHF copies of comments

Bay County Audubon Society
P.O. box 1182
Panama City, Fl. 32402

Mr. Clair Fancy
State Dept. of Environmental Reg.
2600 Blair Stone Road
Twin Towers Office Building
Tallahassee, Fl. 32301

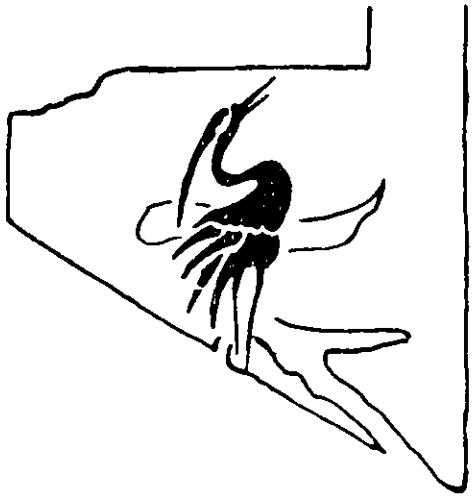
PANAMA CITY FL
19 SEP 1988
2 PM

9/21

Pradeep

Pradeep needs to take a shot at answering this for permit. I will likely edit it a lot. Needs to start by saying it was late but we agreed to address comments anyhow.

Clair

"FROM BIRDWATCHING  TO THE TOTAL ENVIRONMENT"

Many of the pollutants that would increase if the permit were granted will contribute to the acid-rain problem facing our state and nation. Florida currently has 677 acid sensitive lakes, the highest number of any state in the country. The Office of Technology Assessment predicts that acid rain--causing pollutants are responsible for 50,000 premature deaths nationwide every year. Additionally there is evidence that nitrogen oxides may be contributing to the formation of low-lying ozone, which the Clean Air Act has sought to limit.

We are very disappointed with your decision to grant this permit despite the availability and economic feasibility of installing the necessary pollution control equipment. Your apparent lack of concern for the health of the environment and citizens of Bay County is disturbing. Your agency was established to regulate and control pollution, not to grant permits to increase it.

Very truly yours,

BAY COUNTY AUDUBON SOCIETY

BY: Jeffrey D. Palgut
Jeffrey D. Palgut, Conservation Committee

cc: Robert Kriegel, DER
Nelson B. Kverno, Fish & Wildlife Service, Region 6
Bruce P. Miller, EPA Region IV
Bay County Board of Commissioners
copied: Pradeep Raval
Barry Andrews
Tom Rogers