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OGDEN PROJECTS, INC.

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DER

MAY 05 1987

BAQM

TO: Hamilton S. Oven

DER

Tallahassee Fl

TELECOPIER NO: 1-904-~~488-4805~~ 487-4936

FROM: J. R. Trexler

DATE: 5-1-87

TIME:

NUMBER OF PAGES TO FOLLOW:

PROJECT NAME: Hillsborough

PROJECT NUMBER: C-1004

cc: Wayne Aronson Region III, EPA BRM 5-5-87

Clair Fancy

OGDEN MARTIN SYSTEMS OF HILLSBOROUGH INC.

40 LANE ROAD
CN 2615
FAIRFIELD, NEW JERSEY 07007-2615
(201) 882-9000

May 1, 1987

Mr. Hamilton S. Oven, Jr., P.E.
State of Florida
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

RE: Modification of Power Plant Site Certification No. PA 83-19 and Prevention of Significant Deterioration Permit No. PSD-FL-104 as amended July 2, 1986

Dear Mr. Oven:

On behalf of Ogden Martin Systems of Hillsborough County, Inc. (OMSH), I would like to thank you and your staff for meeting with representatives of Ogden Martin Systems, Inc. (Ogden) on April 10, 1987 at the Department of Environmental Regulation Offices in Tallahassee, Florida to discuss proposed modifications of the referenced permits. Based upon test data which has become available to the municipal solid waste combustion industry subsequent to the issuance of the aforesaid permits, it has become apparent that the Hillsborough County Resource Recovery Facility (Facility) will be unable to meet the permitted levels for nitrogen oxides (NO_x) and sulfuric acid mist (H_2SO_4 mist) for reasons that will be set forth below. Accordingly, please consider this a formal request by OMSH, on behalf of Hillsborough County, for a modification of the permits in the following respects:

A. Adjust the permissible emission level of NO_x in the Power Plant Site Certification and the Prevention of Significant Deterioration Permit to 0.34 gr/dscf at 12 percent CO_2 for a three (3) hour average from 0.16 gr/dscf at 12 percent CO_2, the current permit level.

B. Adjust the permissible emission level of H_2SO_4 mist in the Prevention of Significant Deterioration Permit to 0.072 gr/dscf at 12 percent CO_2 for a three (3) hour average from 0.004 gr/dscf at 12 percent CO_2, the current permit level. The twenty-four (24) hour average H_2SO_4 mist emission level would be 0.027 gr/dscf at 12 percent CO_2.

A chart captioned Requested Permit Change for Hillsborough is attached hereto as Exhibit "A".

Based upon Ogden's experience with emissions from other refuse burning facilities which have recently gone into service, it appeared the Facility would not be able to comply with the permitted levels for NOx and sulfuric acid mist. This awareness generated our conference in Tallahassee. Recent testing at the Facility has confirmed our belief. The actual emission levels for NOx and H_2SO_4 mist exceed the permit levels. The requested adjustments are being sought to more realistically reflect emission levels in modern refuse burning facilities and to reflect permissible levels of these substances which have been approved by state regulatory agencies and/or the Environmental Protection Agency (EPA) in other regions. The increases being sought are minimal and will not cause or contribute to the facility exceeding acceptable ambient air quality standards. The specific reasons for the requested changes and the supporting data are outlined below.

NITROGEN OXIDES

The emission level for NOx originally adopted in the issued PSD permit was the same level that was requested in the application submitted in August, 1984. At the time of the submission of the application, there were no data available to Ogden or other similar corporations with regard to NOx emission levels being experienced by modern refuse burning facilities using state of the art mass-burn technology. As a consequence, data derived from older facilities then in operation were used as the source of the NOx emission level requested in the application. The older facilities were neither designed nor operated to achieve the high degree of combustion efficiency as that achieved by this facility and, perhaps predictably, testing has demonstrated that the older data are not compatible with emissions from modern facilities. Subsequent to submission of the present application, several resource recovery facilities around the country using improvements in combustion technology have gone into service. Two of these are Ogden facilities in Tulsa, Oklahoma and Marion County, Oregon. Operation of these facilities has shown that actual NOx levels are equivalent to those being sought herein.

As you are aware, NOx in combustion exhaust is the result of two chemical processes, namely, the conversion of nitrogen contained in the fuel and the oxidation of atmospheric N_2, or thermal NOx. Levels of NOx in modern energy recovery facilities are necessarily increased as a result of higher

operating temperatures. However, this increase is not without a concomitant reduction of harmful pollutants such as carbon monoxide and volatile organic compounds. For example, our preliminary tests indicate that the Facility is producing less than 15 percent of the permitted emission level of carbon monoxide and is performing in a similar manner to the Tulsa facility where volatile organic compounds have been lowered to the point where they are at "trace" levels at the lower level of detection using current EPA monitoring procedures. These harmful pollutants are greatly reduced by the controlled combustion temperatures produced by this facility. Therefore, there is a beneficial tradeoff of substantial reductions in harmful emissions for a small increase of nitrogen oxide emissions. It is for this reason that an adjustment of the emission level of NOx is being requested. Noteworthy is that a similar request for an upward adjustment for NOx was made by Ogden and accepted by the Tulsa City County Health Department and has been preliminarily accepted by the state of Oklahoma and the U.S. EPA for the Ogden facility in Tulsa, Oklahoma. For reference these permits bear numbers T84-23 and PSD-OK-556 M-2. The latter adjustments recognized the necessity of increasing the NOx emission level to be compatible with current technology.

A chart captioned Emission Test Data and Permit Levels for NOx and H_2SO_4 is attached hereto as Exhibit "B" which summarizes the data which have been assimilated by Ogden regarding NOx emissions. This chart shows emission levels of NOx from Ogden facilities and other similar plants for which NOx data are available.

SULFURIC ACID MIST

OMSH also seeks an adjustment of the emission level for sulfuric acid mist to reflect emissions of this substance from modern refuse burning facilities. The emission level for H_2SO_4 mist that was originally requested in the application, and later adopted in the permit, was not based upon operating results of facilities using current technology. At the time the application was submitted, no such data were available. In fact, it has only been very recently that H_2SO_4 mist emissions have been regulated in refuse burning facilities. The basis for the emission level contained in the application was a "theoretical" calculation derived from a formula found in an ASME text published in 1974 involving a different type of

facility. A copy of this article is attached hereto as Exhibit "C". The findings in this reference source were based upon the burning of fuel oil at 25 percent excess air rather than combustion of municipal refuse at 90 to 100 percent excess air.

Based upon the experience of resource recovery facilities recently coming into service, the sulfuric acid mist levels originally requested and adopted are unrealistically low and require adjustment. It is important to note that even at the modified level requested, the amount of sulfuric acid mist emitted is still at trace levels and exceedingly difficult to accurately measure. Measurements which are able to be obtained show emission levels well within acceptable ambient air quality parameters.

One observation that should be made in connection with the present permitted level of H_2SO_4 mist is that no emission limit was listed for this pollutant in the original permit. When the permit was revised in July, 1986 regarding SO_2, the permissible level of SO_2 was adjusted upward in order to reflect current experience for short terms emissions, in addition a limit was assigned for H_2SO_4 mist which reflected a conversion rate of 2% based on the original permits SO_2 level. Since any increase in the allowable level of SO_2 will result in a proportionate increase in the amount of H_2SO_4, it was apparently an oversight that the H_2SO_4 emission level was established based on the lower original permit's SO_2 emission level and not on the revised increased SO_2 emission level approved as part of the July 1986 permit revision. Based upon Ogden's current experience with its resource recovery facility in Tulsa in which SO_2 is converted into H_2SO_4 at the rate of 15 to 18 percent by weight, the new emission level now being requested by OMSH would be consistent with the currently permitted SO_2 levels.

Data summarizing relevant information concerning sulfuric acid mist levels are attached in Exhibit "B". In addition, the air quality impact of the requested emission levels of NOx and H_2SO_4 are shown as a comparison to the existing permit levels in the table captioned "Air Quality Impact of Requested Emissions Levels" attached hereto as Exhibit "D". The NOx annual impact will be increased from 36 percent to 37 percent of the Florida Ambient Air Quality Standards. The H_2SO_4 eight (8) hour TLV and annual AAL (NYSDEC Air Guide 1) impact will be increased from .095 percent to 1.7 percent and from .82 percent

to 14.8 percent, respectively. These results are based on the modeling in the original application for a 1600 TPD facility operating at 110 percent with 100 percent availability. The present facility is 1200 TPD, thus the results presented should be conservative.

The Hillsborough County Resource Recovery facility is eligible to be dedicated and placed into service in the very near future and therefore all parties concerned are most anxious to expeditiously modify the captioned permits so that there will
be as little delay as possible in placing the plant in service. We feel our meeting in Tallahassee was most beneficial and are formalizing our verbal request made at that time by way of this correspondence. We would respectfully request that the Department of Environmental Regulation take the lead in making the modifications in view of the fact that the EPA has delegated PSD permitting authority to the DER and the DER has had technical experience with this project since its inception. If any additional information is needed, we would be most willing to promptly supply the same. We would also be willing to meet again with your staff or with representatives of the EPA if that would expedite the understanding and handling of the present request.

Thanking you for your continued cooperation in this matter, we remain

Sincerely,

for Richard W Seelinger

Richard W. Seelinger
Executive Vice President

RWS/ecd
Enclosures

REQUESTED PERMIT CHANGE FOR HILLSBOROUGH

Pollutant	Existing Permit Levels (1)(2)		Requested Permit Levels	
	gr/dscf @ 12% CO_2	ppm @ 12% CO_2	gr/dscf @ 12% CO_2	ppm @ 12% CO_2
NO_x (3 hour average)	0.16	191	0.34	404
SO_2 (3 hour average)	0.45	388	No requested changes	
SO_2 (24 hour average)	0.17	146	No requested changes	
H_2SO_4 (3 hour average)	0.004	2.2	0.072*	39*
H_2SO_4 (24 hour average)**	NA	NA	0.027*	15*
$\%H_2SO_4/SO_2$ (3 hour average)**	0.9	0.6	16	10
$\%H_2SO_4/SO_2$ (24 hour average)**	NA	NA	16	10

References:
(1) U.S. EPA Permit PSD-FL-104
(2) Power Plant Siting Certificate PA 83-19

* The requested permit levels of H_2SO_4 are a function of the existing permit levels of SO_2 which are specified in the permit at 3 hour and 24 hour averages.

** These are not existing nor requested permit levels. This information is being given for comparison purposes only.

Notes: 1) NA is Not Applicable.
2) The $\%H_2SO_4/SO_2$ under gr/dscf at 12% CO_2 is by weight and under ppm @ 12% CO_2 is by volume.

EXHIBIT A

EMISSION TEST DATA AND PERMIT LEVELS FOR NO_x AND H_2SO_4

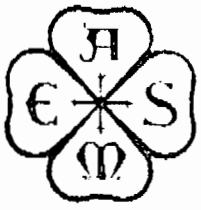
Pollutant	Tulsa		Marion	Wurzburg	Stockholm	Preliminary[5] Hillsborough Test Results
	Test ppm @ 12% CO_2	Permit ppm @ 12% CO_2	test ppm @ 12% CO_2	Test ppm @ 12% CO_2	Test ppm @ 12% CO_2	ppm @ 12% CO_2
NO_x	385[1]	404	357[2]	318[3]	311[4]	327
SO_2	85.4[4]	137.8	----------DATA NOT AVAILABLE----------			
H_2SO_4	12.4[4]	21.1	----------DATA NOT AVAILABLE----------			15.2
XH_2SO_4/SO_2	14.5	15.3	----------DATA NOT AVAILABLE----------			

References:

(1) Ogden Projects, Inc. Data, 3-hr rolling average, worse case.
(2) Ogden Projects, Inc. Data, 3-hr rolling average, worse case.
(3) Cooper Engineer's Report "Air Emission Testing at the Wurzburg, West Germany Waste-to-Energy Facility", June 1986, 3-hr average.
(4) Ogden Projects, Inc. Report #124, averaging period unknown.
(5) Preliminary data obtained during testing at the Hillsborough Facility, 3-hr average.
(6) Ogden Projects, Inc. Report Number 101.

EXHIBIT 8

Combustion Fundamentals for Waste Incineration



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THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS
United Engineering Center 345 East 47th Street New York, N.Y. 10017

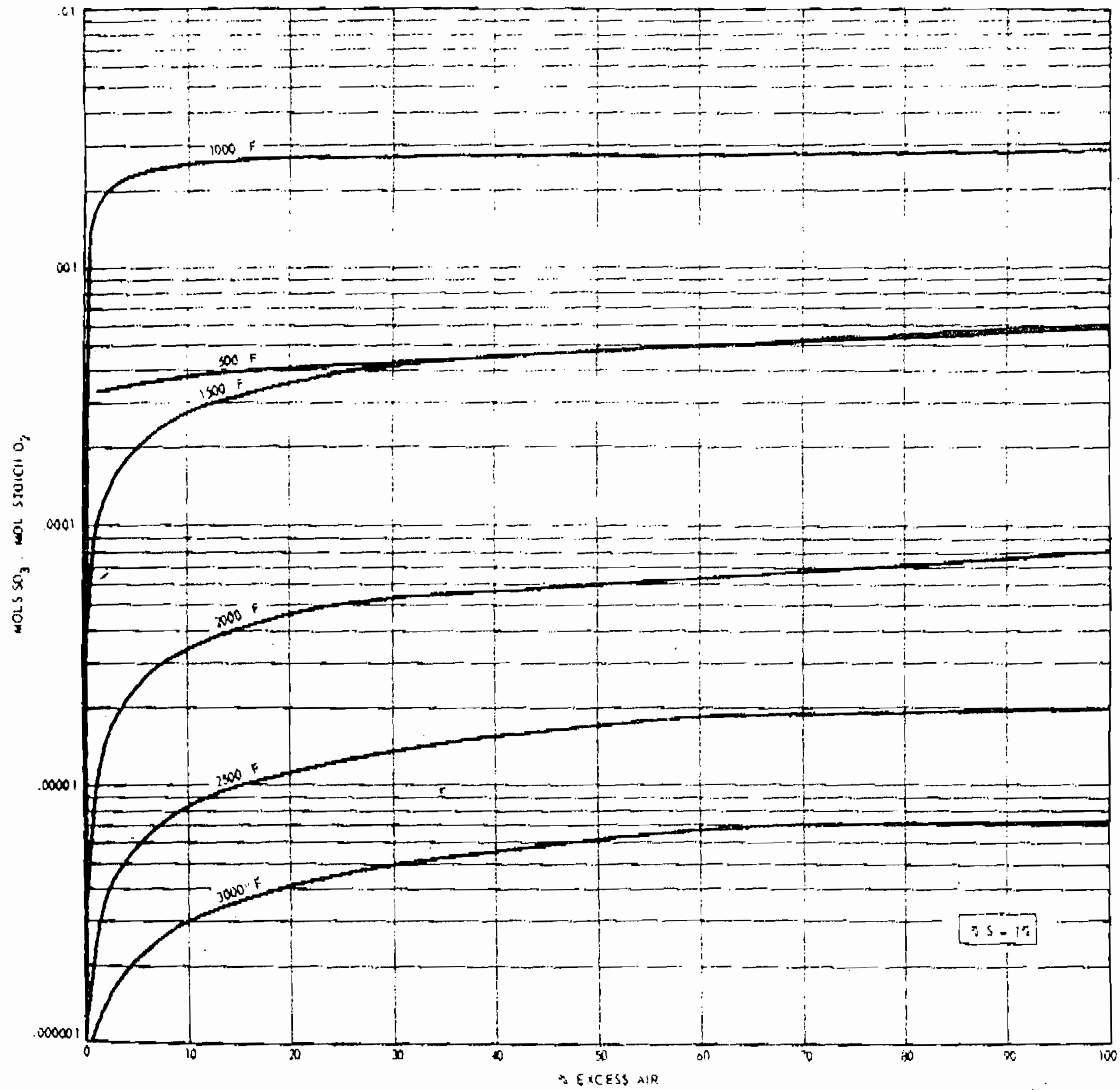

FIG. 8.1

ATTACHMENT "C" P. 4

EDITOR'S NOTE: Numbers in parentheses indicate equations. References are noted by numbers in brackets and appear at the end of their respective Chapter or Table. Numbered Source references (also in brackets) for Appendices G and H appear *only* within the text, since they primarily comprise text material.

Library of Congress Catalog Number 74-19743

Chapter 8 — Sulfur Oxides

When sulfur is present in a hydrocarbon fuel, it will form oxides under equilibrium combustion conditions. These can be either sulfur dioxide (SO_2) or sulfur trioxide (SO_3). The amount that goes to SO_3 in relation to SO_2 will always be small, but it is often important. The SO_3 form readily combines with water vapor to form a high dew point sulfuric acid that can be both visible and corrosive. Equilibrium calculations for sulfur containing hydrocarbon fuels were made in the following limits:

Sulfur Content:	0.67 to 5.47%
Excess Air:	0 to 100%
Temperature:	500 to 3000°F

The results are plotted on Fig. 8.1. Values of SO_3 expressed as mols per mol of stoichiometric oxygen are plotted vs. excess air in percent with values given along lines of constant temperature. The curve is drawn for 1 percent sulfur fuel content by weight. Values for other percent sulfur contents can be obtained by multiplying the curve by the ratio of the actual sulfur content to one.

Example:

A 2.8 percent sulfur fuel is burned at 2000°F with 25 percent excess air. Determine the ppm of SO_2 and SO_3 if the hydrocarbon part of the fuel is represented by C_4H_5.

From Fig. 8.1, a value of 0.00005 mols SO_3 per stoichiometric mol of O_2 is found at 2000°F and 25 percent excess air. This is for a 1 percent sulfur fuel.

For a 2.8 percent sulfur fuel, the amount of SO_3 produced would be:

$$(2.8)(0.00005) = 0.00014 \text{ mols } SO_3 \text{ per mol stoic. } O_2$$

To convert to ppm:

1 mol C_4H_5	=	53 lbs
1-.028	=	0.972 lbs C_4H_5 per 0.028 lbs S
(0.028/32)	=	0.000875 mols S/0.972 lbs C_4H_5
$\left(\frac{0.000875}{0.972}\right)(53)$	=	0.0477 mols S/mol C_4H_5

So:

$$C_4H_5 + 0.0477\,S + 1.25(5.25 + 0.0477)O_2 \longrightarrow 4\,CO_2 + 2.5\,H_2O + 0.00014(5.25 + 0.0477)\,SO_3 + [0.0477 - (0.00014(5.25 + 0.0477))]\,SO_2 + 0.25(5.25 + 0.0477)\,O_2 + (79/21)(1.25(5.25 + 0.0477))\,N_2$$

(Stoichiometry)

or:

$$C_4H_5 + 0.0477\,S + 6.622\,O_2 \longrightarrow 4\,CO_2 + 2.5\,H_2O + 0.0007417\,SO_3 + 0.04696\,SO_2 + 1.324\,O_2 + 24.912\,N_2$$

On a dry basis, the ppm of SO_3 is:

$$\text{ppm } SO_3 = \frac{0.0007417}{4 + 0.0007417 + 0.04696 + 1.324 + 24.912} \times 10^6$$

$$= \frac{0.0007417(10^6)}{30.2837} = 24.5$$

$$\text{ppm } SO_2 = \frac{0.04696(10^6)}{30.2837} = 1550.7$$

$$\text{ppm } SO_x = 24.5 + 1550.7 = 1575$$

Similar calculations can be made for any fuel whose molecular form or ultimate analysis is known. Note that for this particular case, 1% percent of the sulfur was converted to SO_3.

The relationship of mols to pounds per million Btu can also be calculated or approximated.

Example:

Express the results of the previous example as lbs/10^6 Btu. Since neither a heat of formation nor heating value is available for C_4H_5, assume 1 mol of stoichiometric O_2 is equal to a fuel heating value of 184,000 Btu.

$$\frac{\text{lbs } SO_3}{10^6 \text{ Btu}} = \frac{0.00014 \text{ mols } SO_3}{\text{mol } O_2^*} \times \frac{\text{mol } O_2^*}{184{,}000 \text{ Btu}} \times 10^6 \times \frac{80 \text{ lbs}}{\text{mol } SO_3}$$

$$= 0.06$$

$$\frac{\text{lbs } SO_2}{10^6 \text{ Btu}} = \frac{1550.7 \text{ ppm } SO_2}{24.5 \text{ ppm } SO_3} \times \frac{64 \text{ lbs } SO_2}{80 \text{ lbs } SO_3} \times 0.06 = 3.014$$

OGDEN PROJECTS, INC.

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AN OGDEN COMPAN

TO: Hamilton S. Oven
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Tallahassee Fl

1-904-487-4938

TELECOPIER NO: ~~1-904-488-4805 ABI-4935~~

FROM: J. R. Treshler

DATE: 5-1-87

TIME: 4:00 PM

NUMBER OF PAGES TO FOLLOW: 14

PROJECT NAME: Hillsborough

PROJECT NUMBER: C-1004

Air Quality Impact of Requested Emissions Levels

	NO_x	
	Existing Permit Levels	Requested Permit Levels
gr/dscf @ 12% CO_2	0.16	0.34
Annual Impact ($\mu g/M^3$)*	1.0	2.1
% of FAAQS	1.0	2.1
Monitored Background	35	35
Total ($\mu g/M^3$)	36	37
% of FAAQS	36	37

	H_2SO_4	
	Existing Permit Levels	Requested Permit Levels
gr/dscf @ 12% CO_2	0.004	0.072
H_2SO_4 8-hr ($\mu g/M^3$)*	0.95	17.1
Annual ($\mu g/M^3$)*	0.027	0.49
TLV (8 hr)-($\mu g/M^3$)**	1,000	1,000
AAL (Annual)-($\mu g/M^3$)***	3.3	3.3
% of TLV	0.095	1.7
% of AAL	0.82	14.8

* Derived from modelling results contained in the Air Quality Impact Analysis in the PSD Application.

** Threshold Limit Value, American Conference of Governmental Industrial Hygienists.

*** Allowable Ambient Limit, New York State Department of Environmental Conservation.

Figure 8.2 gives an expanded scale of Fig. 8.1 in the low excess air region. While these two curves are necessary to describe the entire region covered, it was found that a limited area could be approximated by the following formulae:

$$\frac{\text{mols } SO_3}{\text{mol } O_2{}^*} = (\%\ \text{Sulfur})(0.001635)\left[\frac{(\%\ \text{Excess Air})^{0.433}}{\left(\frac{^\circ\text{F Temp}}{1000}\right)^{6.9}}\right]$$

or:

$$\frac{\text{lbs } SO_3}{10^6\ \text{Btu}} = (\%\ \text{Sulfur})(0.7108)\left[\frac{(\%\ \text{Excess Air})^{0.433}}{\left(\frac{^\circ\text{F Temp}}{1000}\right)^{6.9}}\right]$$

Where the excess air is from 5 to 25 percent and the temperature from 1500 to 2500°F, a maximum error of 12 percent will occur.

Example:

For the same case of 2.8 percent sulfur, 25 percent excess air and 2000°F, find the mols of SO_3 per mol of stoichiometric O_2 by the formula given:

$$\frac{\text{mols } SO_3}{\text{mol } O_2{}^*} = (2.8)(0.001635)\left[\frac{(25)^{0.433}}{\left(\frac{2000^{6.9}}{1000}\right)}\right] = 0.0001545$$

Since a value of 0.00014 was found from the curves, the error is 9.37 percent.

The effect of introducing alkaline metals into the sulfur reaction was not studied in depth. It can be stated that there is a definite tendency to form the sulfate form of sodium when both sulfur and sodium are present at 1800°F. The results presented here are for reactions without alkaline metals present.

Other metals such as vanadium may also act as catalysts in the SO_2 to SO_3 reaction and continue the reaction beyond the combustion zone.

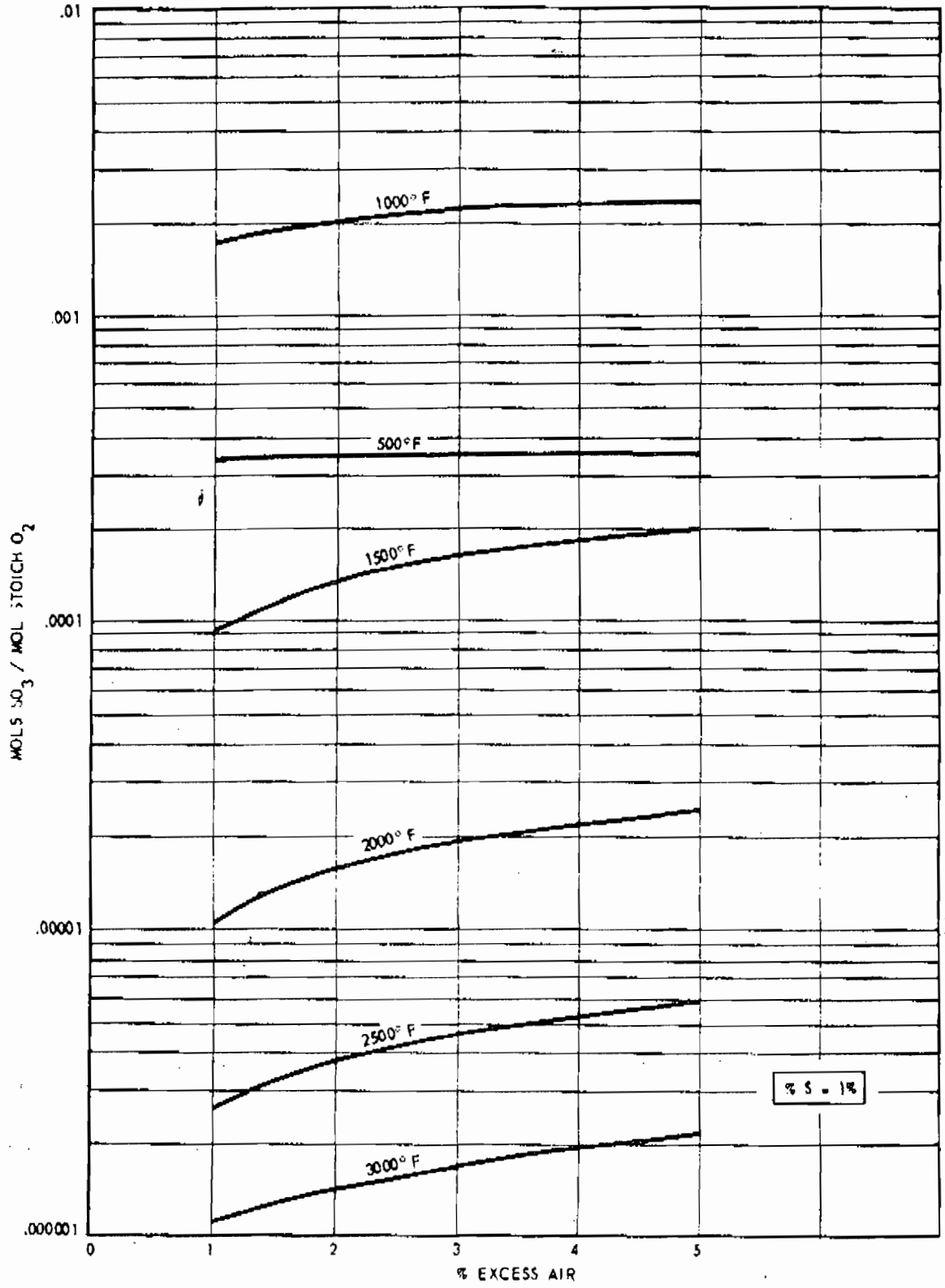

FIG. 8.2

ATTACHMENT "C" P. 5

OGDEN PROJECTS, INC.

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TO: Hamilton S. Oven
DER
Tallahassee. Fl

1-904-487-4938

TELECOPIER NO: ~~1-904-488-4807~~ 1-904-

FROM: J. R. Trexler

DATE: 5-1-87

TIME: 4^00 PM

NUMBER OF PAGES TO FOLLOW: 14

PROJECT NAME: Hillsborough

PROJECT NUMBER: C-1004

Balance of 14 sheets

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OGDEN MARTIN SYSTEMS OF HILLSBOROUGH INC.

40 LANE ROAD
CN 2615
FAIRFIELD, NEW JERSEY 07007-2615
(201) 882-9000

AN OGDEN COMPANY

September 23, 1987

HC 0959L
C-1005

Mr. Pradeep Raval
State of Florida
Dept. of Environmental Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: Hillsborough County Florida
Solid Waste Energy Recovery Project
Public Notice

Dear Mr. Raval:

Enclosed is a copy of the Public Notice published in the Tampa Tribune on July 19, 1987, as well as the notarized proof of publication prepared by the Tampa Tribune.

Please advise us if additional information in this regard will be needed.

Very truly yours,

Roy D. Simpson
Site Supervisor

RDS:hn

copies:
Pradeep Raval
Barry Andrews
Tom Rogers
CHF/BT
Wayne Aronson, EPA
Miguel Flores, NPS

9-28-87 RDS

DER
SEP 28 1987
BAQM

Published Daily
Tampa, Hillsborough County, Florida

State of Florida
County of Hillsborough } ss.

Before the undersigned authority personally appeared C. T. Gleason, who on oath says that he is Controller of The Tampa Tribune, a daily newspaper published at Tampa in Hillsborough County, Florida; that the attached copy of advertisement being a .....

LEGAL NOTICE

in the matter of STATE OF FLORIDA DEPARTMENT OF
PROPOSED AGENCY ACTION ON PERMIT
APPLICATION

was published in said newspaper in the issues of .....

JULY 19, 1987

Affiant further says that the said The Tampa Tribune is a newspaper published at Tampa, in said Hillsborough County, Florida, and that the said newspaper has heretofore been continuously published in said Hillsborough County, Florida, each day and has been entered as second class mail matter at the post office in Tampa, in said Hillsborough County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm, or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

G. T. Gleason

Sworn to and subscribed before me, this 19th *day of* JULY *A.D. 19* 87

Lisa A. Rualta

(SEAL)

Notary Public, State of Florida
My Commission Expires Nov. 23, 1990
Bonded Thru Troy Fain - Insurance Inc.

The final Application
The Department of Environmental Regulation gives notice of its intent to issue a permit to Hillsborough County to increase the allowable emissions of sulfuric acid mist, and particulate emissions from their existing energy recovery (municipal solid waste) facility. The facility is located in Hillsborough County approximately three miles east of Tampa on the County's Palmetto Road site. A determination of best available control technology (BACT) was required.

This application was reviewed under Florida Administrative Code Rules 17-2.500, Prevention of Significant Deterioration. Emissions of nitrogen oxides, sulfuric acid mist, and particulates will increase by 739,389, and 7 tons per year, respectively. The allowable emissions of the other pollutants are not being increased. The Department has completed a study of the potential ambient air impact due to the increase in emissions. Based on this study, the Department has reasonable assurance that the increase in emissions will not cause or contribute to an exceedance of the ambient air quality standards for these pollutants. No PSD increment analysis is required for this modification.

Persons whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must conform to the requirements of Chapters 17-103 and 28-5, Florida Administrative Code, and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Twin Towers Office Building, Tallahassee, Fl 32399-2400, within fourteen (14) days of publication of this notice. Failure to file a request for hearing within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57 Florida Statutes. If no petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this preliminary statement. Therefore, persons who may not object to the proposed agency action may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Model Rule 28-5.207 at least five (5) days before the final hearing and be filed with the hearing officer if one has been assigned of the Division of Administrative Hearings, Department of Administration, 2009 Apalachee Parkway, Tallahassee, Florida 32399-2480. If no hearing officer has been assigned, the petition is to be filed with the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statutes.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Dept. of Environmental Regulation
Southwest District
7601 Highway 301 North
Tampa, Florida 33610

Dept. of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Hillsborough County Environmental Protection Commission
1410 N. 21st Street
Tampa, Florida 33605

Any person may send written comments on the proposed action to Mr. Bill Thomas at the Department's Tallahassee address. All comments mailed within 30 days of the publication of this notice will be considered in the Department's final determination.

3268 7/19/87

OGDEN MARTIN SYSTEMS
OF HILLSBOROUGH INC.

40 LANE ROAD
CN 2615
FAIRFIELD, NEW JERSEY 07007-2615
(201) 882-9000

AN OGDEN COMPANY

June 12, 1987

HC-0861L
C-1005

DER
JUN 16 1987
BAQM

Mr. Hamilton S. Oven, Jr., P.E.
State of Florida
Department of Environmental Regulation
2600 Blairstone Road
Tallahassee, Florida 32301

Reference: Supplemental Information Power Plant
Site Certification No. PA83-19

Dear Mr. Oven:

At the request of the Hillsborough County Environmental Protection Commission, we are submitting additional back-up information covering the dust suppression system for the ash handling building of the Hillsborough County Solid Waste Energy Facility. Documents included for your review are a marked copy of DER forms 17-1.201 (1), Application To Operate and Construct Air Pollution Sources, along with technical data describing the dust suppression system selected for the ash handling building.

This dust suppression equipment was added to the final design of the ash handling building to ensure that there would be no visible emissions from this plant area. Operation of this equipment observed during the recent Performance Test have verified that there are, in fact, no visible emissions.

At the request of the Hillsborough County EPC, we have supplied this additional information to ensure that our permit application is complete. Accordingly, please consider this a formal request by OMSH on behalf of Hillsborough County that in accordance with DER regulation 172.700, paragraph (3)-(D) that this dust suppression unit be classified under the 5% opacity standard and that the testing requirements be waived, since the operating flow is 9,500 ACFM.

It is my understanding of the regulations that DER has the authority to request a visual observation of the performance of this unit. If it is DER's desire to have this visual observation made, OMSH would be glad to accommodate this request as verification of the unit's proper operation.

Once again, I would like to thank you for your continued help in the permitting process of our facility. I will contact you shortly to verify that the data submitted with this request is proper and sufficient to allow processing of this added information.

Best Regards,

J. R. Treshler
Senior Project Manager

JRT:hn
Attachment

cc: R. Hauser
P. Stoller
D. Strobridge
D. Smith
T. Smith
D. Elias
D. Dee
D. Knight
J. Campbell - HCEPC
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SUPPLEMENTAL INFORMATION

ASH BLDG. DUST SUPPRESSION BAG HOUSE

HILLSBOROUGH COUNTY FLORIDA

SOLID WASTE ENERGY RECOVERY PROJECT

Flex-Kleen

Research-Cottrell

OPERATING, EQUIPMENT, AND CONSTRUCTION DATA

CUSTOMER: Fairfield Engineering Co.

P.O. NO.: DU-365D FKO NO.: 12-84-30564

MODEL NO.: 84-WRBC-144(IIIG) QTY.: 1 DATE: 02/21/86

TAG INFO.: P.O. #DU-365D DRAWING NO.: A-86JC-040
DOC.REV.DATE: 04/11/86
DOC.REV.MARK: [a]

The information below will be considered CERTIFIED and no further transmittals of this document will be made unless there are changes agreed to between the customer and Flex-Kleen.

OPERATING DATA

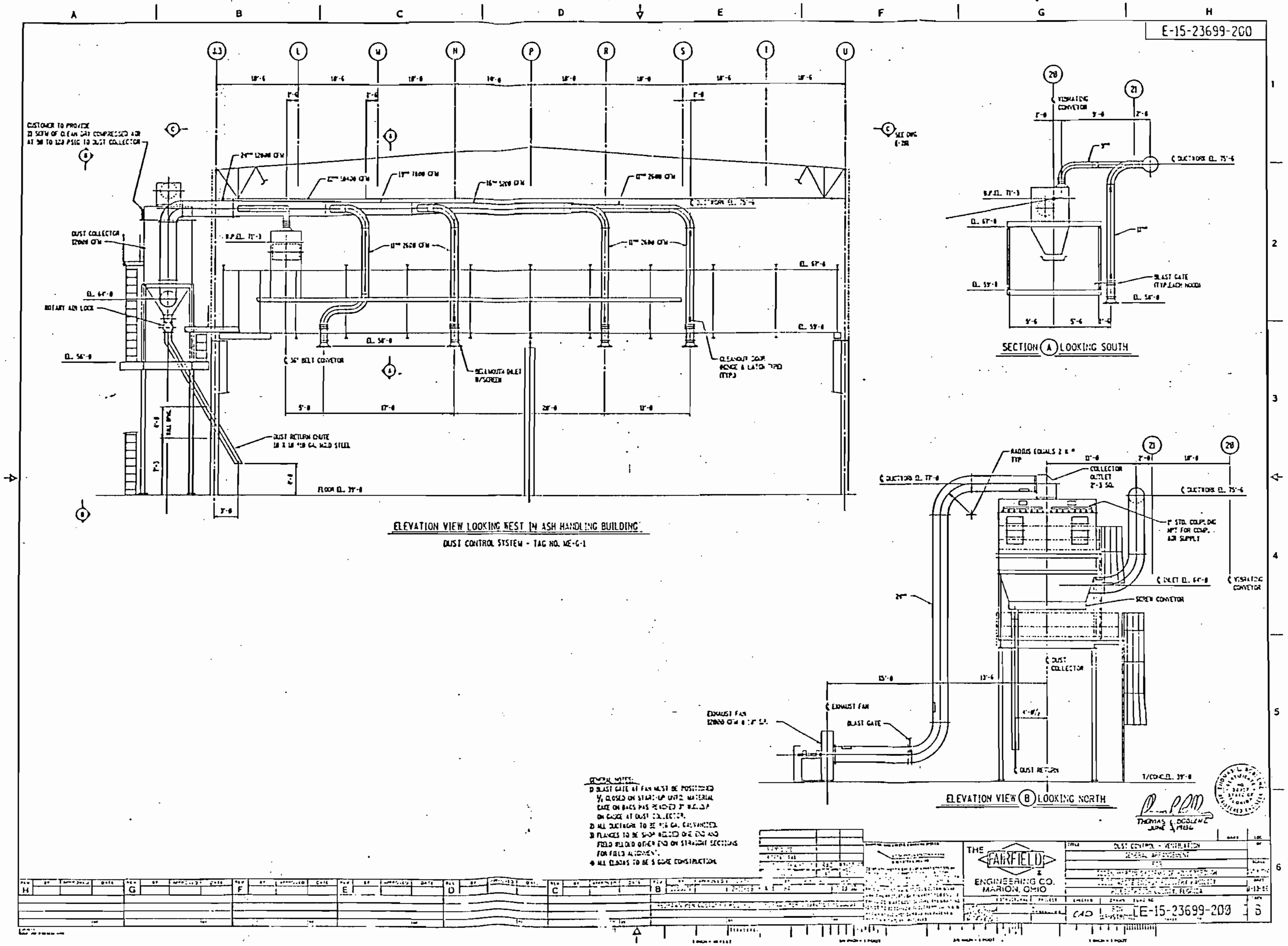
Volume: 9,500 acfm[1] Cloth Area: 1,526 ft^2 Ratio: 6.23/1[1]
Dust: Fly Ash
Dust Size:
Dust Density: lb/cu.ft. Dust Loading: gr/cu.ft.
Temperature: 70°F Dew Pt.: Deg.F
(collector temperature must be kept well above dew point)
End Use: Unknown
Weight: 5450 lbs. Location: Outdoors
Design Press.: 17" W.G. Operating Press.: 10"W.G. (Neg.)
Compressed Air Reqmts.: 21.0 scfm @ 90-100 psig
(compressed air to be clean, dry, and oil free)

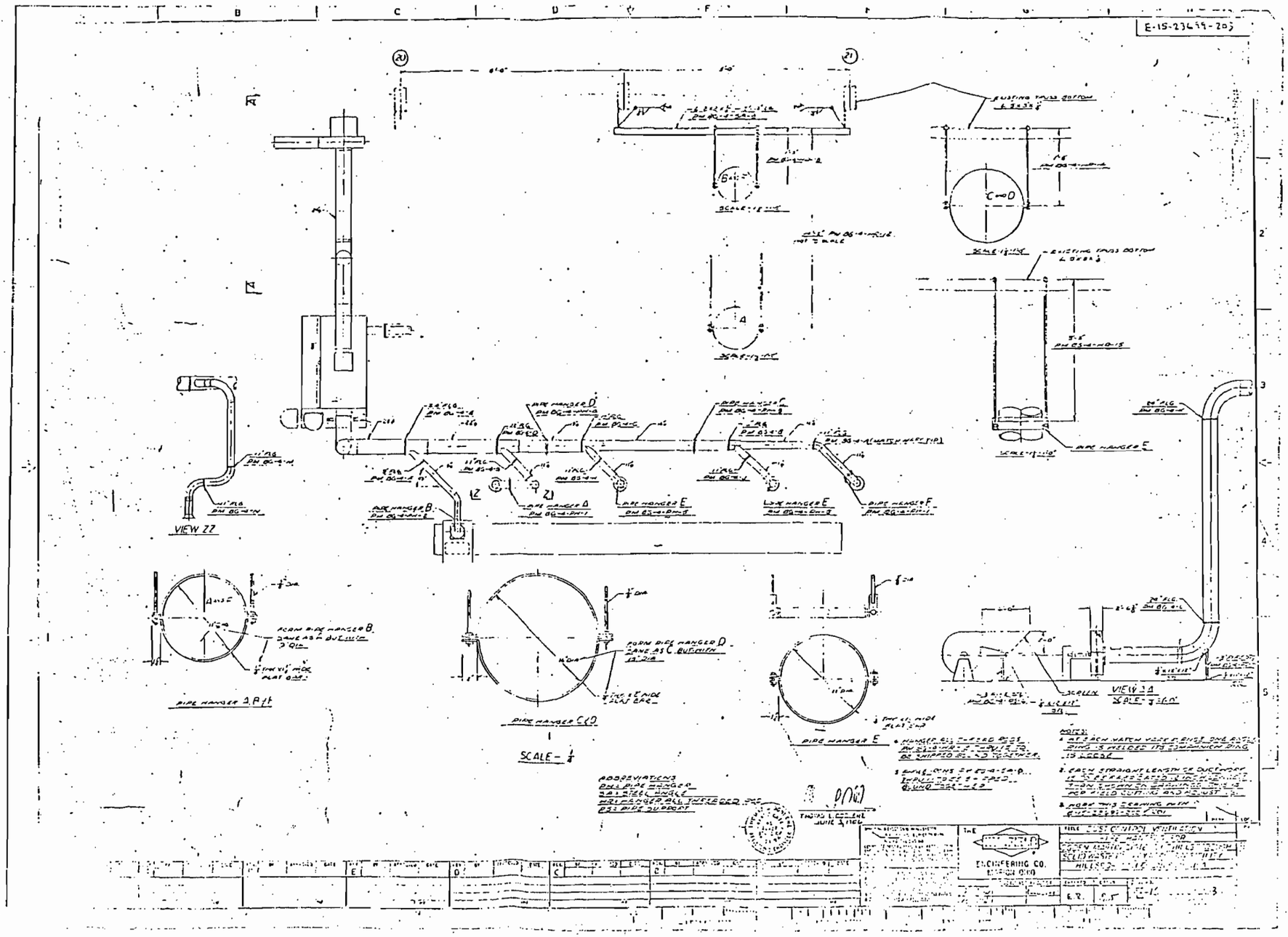
EQUIPMENT DATA

Timer(s): T16054/NEMA-4 (M14507)
(electrical reqmts. 120V, 50/60 Hz, 1 phase, 100 w each)
Diaph. Valves: M14909 Bag Cages: C10111
Solenoid Valves: E24104 Bag Clamps: M12803
Venturis: M11038 Bag Cups: M10725
Filter Bags: 16oz. Polyester/singed (B25614)

1 Field Modification derated from 12,000 acfm to 9,500 acfm by changing motor drive sheeves.

BEST AVAILABLE COPY





HILLSBOROUGH COUNTY FLORIDA

SOLID WASTE ENERGY RECOVERY PROJECT

MARKED TO REFLECT ASH BLDG. DUST SUPPRESSION BAG HOUSE

SUPPLEMENTAL INFORMATION

DER FORM 17-1.202 (1)

APPLICATION TO OPERATE/CONSTRUCT
AIR POLLUTION SOURCES

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Solid Waste Energy Recovery Facility [X] New[1] [ ] Existing[1]

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

COMPANY NAME: County of Hillsborough, Florida COUNTY: Hillsborough

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Solid Waste Energy Recovery Facility w/Electrostatic Precipitato

SOURCE LOCATION: Street Faulkenburg Rd. Nearest Incorporated City City Tampa

UTM: East 03/68/220 M.E. North 30/92/700 M.N.

Latitude 27 ° 57 ' ___ "N Longitude 82 ° 40 ' 22 "W

APPLICANT NAME AND TITLE: Warren N. Smith, Director

APPLICANT ADDRESS: Dept. of Solid Waste, P.O. Box 1110, 925 East Twiggs Street, Tampa Florida 33601

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

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

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

*Attach letter of authorization

Signed: Warren N. Smith

Warren N. Smith, Director, Dept. of Solid Waste
Name and Title (Please Type)

Date: 7-23-84 Telephone No. (813)272-6674

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

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

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

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

Stack Height: _____ ft. Stack Diameter: _____ ft.

Gas Flow Rate: _____ ACFM _____ DSCFM Gas Exit Temperature: _____ °F.

Water Vapor Content: _____ % Velocity: _____ FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated	Vendor supplied information						
Uncontrolled (lbs/hr)	Vendor supplied information.						

Description of Waste Municipal solid waste

Total Weight Incinerated (lbs/hr) 133,333. Design Capacity (lbs/hr) 133,333. (name plate rati

Approximate Number of Hours of Operation per day _____ day/wk _____ wks/yr. _____

Manufacturer Vendor not selected yet.

Date Constructed _____ Model No. _____

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel Type	Fuel BTU/hr	Temperature (°F)
Primary Chamber	Vendor specific information				
Secondary Chamber					

Stack Height: 220 ft. Stack Diameter: 4 flues, each 5'-9" Diam. Stack Temp. 430°F

Gas Flow Rate: 342,000 ACFM 140,070 @ 50% Ex. Air DSCFM* Velocity: 55 FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air. 0.027 gr/dscf @ 50% Ex. Air

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) Electrostatic Precipitator

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

Signed

Louis Tortora, Jr. PE
Name (Please Type)

Camp Dresser & McKee, Inc.
Company Name (Please Type)

1321 U.S. 19South, Suite 601,Clearwater, Fl. 33546
Mailing Address (Please Type)

Florida Registration No. 32073 Date: 7/24/84 Telephone No. (813)530-9984

SECTION II: GENERAL PROJECT INFORMATION

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

Project is a solid waste energy recovery facility which shall generate electrical power from combustion of municipal refuse. Pollution control device shall be an electrostatic precipitator with an outlet loading of 0.025 grains/dscf corrected to 12% CO_2. Project will be in full compliance with all existing state and federal standards, and the air pollution control device shall meet LAER/BACT for all applicable pollutants.

B. Schedule of project covered in this application (Construction Permit Application Only)
Start of Construction January 1985 Completion of Construction January 1988

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

Electrostatic Precipitators (4) $4,500,000 total

*Ash Bldg. Dust Suppression Bag House (1) $56,000 total

*Information added 6/12/87

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

Not Applicable

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ;

if power plant, hrs/yr _____ ; if seasonal, describe: _____

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

1. Is this source in a non-attainment area for a particular pollutant? Yes

   a. If yes, has "offset" been applied? Will seek offsets

   b. If yes, has "Lowest Achievable Emission Rate" been applied? Yes

   c. If yes, list non-attainment pollutants. Ozone and particulate matter

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. Yes

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. Yes

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? Yes

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? No

   a. If yes, for what pollutants? _____

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

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

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

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

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

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

1. Total Process Input Rate (lbs/hr): _____

2. Product Weight (lbs/hr): _____

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

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
* TSP	1.63		---	N/A	N/A		---

[1]See Section V, Item 2.

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

[3]Calculated from operating rate and applicable standard.

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

* Information added for Ash Bldg. Dust Suppression Bag House 6/12/87

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Ash Bldg. Dust Suppressor Bag House	TSP		Not applicable	

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	

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

Fuel Analysis:

Percent Sulfur: _____ Percent Ash: _____

Density: _____ lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

_____

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

Annual Average _____ Maximum _____

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

_____

_____

_____

_____

Brief description of operating characteristics of control devices: Electrostatic precipitator collects particulate matter in flue gas stream by producing an electrical charge on the particles and then attracting them to surfaces of opposite polarity.

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

Hillsborough County's co-located wastewater treatment plant will accept the cooling tower blowdown and ash will be disposed of at Hillsborough County's Southeast County Landfill.

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

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]

2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.

3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).

4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)

5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).

6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.

7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).

8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

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

[X] Yes [ ] No

Contaminant	Rate or Concentration
Particulate matter	0.08 gr/dscf (grains per dry standard cubic foot) corrected to 12% CO_2

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

[X] Yes [ ] No

Contaminant	Rate or Concentration
Various	See Table 6-2 in the PSD permit application

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

Contaminant	Rate or Concentration
Carbon monoxide, nitrogen oxides, sulfur dioxide, lead, beryllium, mercury, fluorides, and sulfuric acid mist	See PSD permit application Section 6.0

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

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height: ft. b. Diameter: ft.

c. Flow Rate: ACFM d. Temperature: °F.

e. Velocity: FPS

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

1.

a. Control Device: electrostatic precipitator (ESP)
b. Operating Principles: Dry collection of charged particles on oppositely charged surfaces.
c. Efficiency:[1] Outlet Loading 0.025 gr/dscf Corr. to 12% CO_2
d. Capital Cost: $4,500,000
e. Useful Life: 20 yrs.
f. Operating Cost: $556,999./yr
g. Energy:[2] 770 KW
h. Maintenance Cost: $90,000/yr
i. Availability of construction materials and process chemicals: Readily available
j. Applicability to manufacturing processes: Not applicable
k. Ability to construct with control device, install in available space, and operate within proposed levels: ESP has by far the longest history of operation within emission standards on solid waste resource recovery facilities (hundreds of units worldwide).

2.

a. Control Device: fabric filter
b. Operating Principles: Dry collection of particles by filtration through fabrics.
c. Efficiency:[1] Outlet loading 0.025 gr/dscf Corr. to 12% CO_2
d. Capital Cost: $3,694.000
e. Useful Life: 20 yrs. complete bag replacement every 2 years.
f. Operating Cost: $859,000./yr
g. Energy:[2] 218 KW
h. Maintenance Cost: $112,000./yr
i. Availability of construction materials and process chemicals: Readily available

[1] Explain method of determining efficiency.
[2] Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels: Limited operating experience with fabric filters on solid waste resource recovery facilities (only 3 units on large scale, mass-burn facilities

3.

a. Control Device: Dry Scrubber & ESP Outlet loading 0.025gr/dscf
b. Operating Principles: Alkaline spray neutralizes SO_2 & ac
c. Efficiency:[1] 65% removal eff. for SO_2 & 80% for acid gases
d. Capital Cost: $12,831,000
e. Useful Life: 20 Yr.
f. Operating Cost: $1,387,000/yr.
g. Energy:[2] 1397 KW
h. Maintenance Cost: $336,000/yr

i. Availability of construction materials and process chemicals: Readily available

j. Applicability to manufacturing processes: Not Applicable

k. Ability to construct with control device, install in available space, and operate within proposed levels: Very limited operating experience (only one unit in operation in USA on solid waste service).

4.

a. Control Device: ESP & Wet Scrubber Outlet loading 0.025 gr/dscf 75% removal eff. for SO_2 and 90% for acid gases
b. Operating Principles: ESP for dry collection of particulate and alkaline scrubbing for SO_2 & acid gas cont
c. Efficiency:[1]
d. Capital Costs: $7,810,000.
e. Useful Life: 20 yrs.
f. Operating Cost: $3,310,000/yr
g. Energy:[2]
h. Maintenance Cost: $189,000/yr

i. Availability of construction materials and process chemicals: Expensive corrosion-resistant metals required for quencher and scrubber.

j. Applicability to manufacturing processes: Not Applicable

k. Ability to construct with control device, install in available space, and operate within proposed levels: Very limited operating experience. Problem areas include necessity for stack gas reheat, corrosion of scrubber, and wastewater treatment.

F. Describe the control technology selected:

1. Control Device: ESP
2. Efficiency:[1] Outlet loading controlled to 0.025 gr/dscf corr. to 12% CO_2
3. Capital Cost: $4,500,000
4. Useful Life: 20 yrs.
5. Operating Cost: $556,000/yr
6. Energy:[2] 770 KW
7. Maintenance Cost: $90,000/yr
8. Manufacturer: Not selected yet.
9. Other locations where employed on similar processes: Braintree, MA; Harrisburg, PA; Chicago, NW, IL; Nashville, TN; Norfolk, VA; Saugus, MA; Montreal (Des Carriers), Quebec, and Pinellas County, FL.

a. (1) Company: Not selected yet.
(2) Mailing Address:
(3) City:
(4) State:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

2. Instrumentation, Field and Laboratory

a. Was instrumentation EPA referenced or its equivalent? [ ] Yes [ ] No

b. Was instrumentation calibrated in accordance with Department procedures?

[ ] Yes [ ] No [ ] Unknown

B. Meteorological Data Used for Air Quality Modeling

1. 5 Year(s) of data from 1 / 1 / 70 to 12 / 3 / 74
month day year month day year

2. Surface data obtained from (location) Tampa International Airport

3. Upper air (mixing height) data obtained from (location) Tampa International

4. Stability wind rose (STAR) data obtained from (location) Not Used

C. Computer Models Used

1. Industrial Source Complex (ISC), Short-term Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

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

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate	
TSP	(4.46 Incinerator) (*0.2)	grams/sec
SO_2	(23.1 Incinerator) (*Not applicable)	grams/sec

E. Emission Data Used in Modeling

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

F. Attach all other information supportive to the PSD review.

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

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

* Information added for Ash Bldg. Dust Suppression Bag House 6/12/87.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration
Various	See Table 6-2 in PSD permit application

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

10. Reason for selection and description of systems: See Section 6.0 of PSD Permit Application

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

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data

1. _____no. sites _____ TSP _____( ) SO^2* _____ Wind spd/dir

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

Other data recorded _____

Attach all data or statistical summaries to this application.

Specify bubbler (B) or continuous (C).

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION
Application To Operate/Construct Air Pollutant Sources
Supplemental Information

Section V: Supplemental Requirements

1. Total process input rate at design capacity (i.e. name-plate rating) is 1600 TPD, 4 units each at 400 TPD. Residue amount will be 29.000. lb/hr (dry basis) and is derived as follows:

$$\text{Inert Material} = \left(133{,}333 \frac{\text{wet lb feed}}{\text{hr}}\right)\left(0.7265 \frac{\text{dry lb}}{\text{wet lb}}\right)\left(0.289 \frac{\text{lb inert}}{\text{dry lb}}\right) = 28{,}100 \frac{\text{dry lb inert}}{\text{hr}}$$

$$\text{Unburned Carbon:} = \left(133{,}333. \frac{\text{wet lb feed}}{\text{hr}}\right)\left(0.7265 \frac{\text{dry lb}}{\text{wet lb}}\right)\left(0.3567 \frac{\text{lb. Carbon}}{\text{dry lb}}\right)$$

$$(.025) = 900. \frac{\text{dry lb carbon}}{\text{hr}}$$

$$29{,}000. \frac{\text{dry lb residue}}{\text{hr}}$$

2. Emission estimates are contained in the Prevention of Significant Deterioration (PSD) Permit Application.

3. Emission factors were derived from AP-42 and from data from recent large-scale, mass burn resource recovery facilities. See PSD Permit Applications.

4-8. These items are not available at this time since a system supplier has not been selected. Once these items have been provided by the vendor they will be transmitted to DER for inclusion in this application.