

TWIN TOWERS OFFICE BUILDING
2800 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301



BOB GRAHAM
GOVERNOR

Victoria J. Tschinkel
SECRETARY

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

April 23, 1982

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

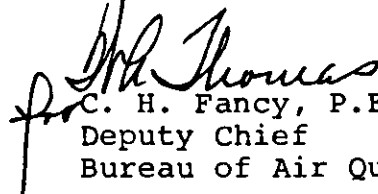
Dale H. Twachtmann
City of Tampa
306 East Jackson Street
Tampa, Florida 33602

Dear Mr. Twachtmann:

Enclosed is Permit Number AC 29-47277, dated April 23, 1982
to City of Tampa
issued pursuant to Section 403, Florida Statutes.

Acceptance of the permit constitutes notice and agreement that the Department will periodically review this permit for compliance, including site inspections where applicable, and may initiate enforcement actions for violation of the conditions and requirements thereof.

Sincerely,


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

CHF/pa

cc: Dan Williams, FDER, Southwest District
Hooshang Boostani, Hillsborough County Environmental
Protection Commission
Joe Murdoch, City of Tampa

P16 7682486

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL
(See Reverse)

SENT TO		
<i>Dale H. Swaltmann</i>		
STREET AND NO		
<i>306 E. Jackson St.</i>		
P.O., STATE AND ZIP CODE		
<i>Tampa, FL 33602</i>		
POSTAGE \$		
CONSULT POSTMASTER FOR FEES	CERTIFIED FEE	c
	SPECIAL DELIVERY	c
	RESTRICTED DELIVERY	c
	RETURN RECEIPT SERVICE SHOW TO WHOM AND DATE DELIVERED	c
	SHOW TO WHOM, DATE, AND ADDRESS OF DELIVERY	c
SHOW TO WHOM AND DATE DELIVERED WITH RESTRICTED DELIVERY	c	
SHOW TO WHOM, DATE AND ADDRESS OF DELIVERY WITH RESTRICTED DELIVERY	c	
TOTAL POSTAGE AND FEES \$		
POSTMARK OR DATE		
<i>4/26/82</i>		

PS Form 3800, Apr. 1976

PS Form 3811, Jan. 1978

RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

● SENDER: Complete items 1, 2, and 3.
Add your address in the "RETURN TO" space on reverse.

1. The following service is requested (check one.)

Show to whom and date delivered.....

Show to whom, date and address of delivery.....

RESTRICTED DELIVERY
Show to whom and date delivered.....

RESTRICTED DELIVERY
Show to whom, date, and address of delivery \$.....

(CONSULT POSTMASTER FOR FEES)

2. ARTICLE ADDRESSED TO:
Dale H. Swaltmann
City of Tampa
306 E. Jackson Street
Tampa, Florida 33602

3. ARTICLE DESCRIPTION:

REGISTERED NO.	CERTIFIED NO.	INSURED NO.
	<i>7682486</i>	

(Always obtain signature of addressee or agent)

I have received the article described above.

SIGNATURE Addressee Authorized agent

C. Sampson

DATE OF DELIVERY	POSTMARK
	APR 29 1982

5. ADDRESS (Complete only if requested)

6. UNABLE TO DELIVER BECAUSE:

CLERK'S INITIALS
Lov

☆GPO : 1979-300-459

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee		
To: _____	Loctn.: _____	
To: _____	Loctn.: _____	
To: _____	Loctn.: _____	
From: _____	Date: _____	
Reply Optional []	Reply Required []	Info. Only []
Date Due: _____	Date Due: _____	

TO: Victoria J. Tschinkel
FROM: C. H. Fancy *C. H. Fancy*
DATE: April 21, 1982
SUBJ: Approval and Signature of Attached Air
Construction Permit Described Below

RECEIVED

APR 22 1982

Office of the Secretary.

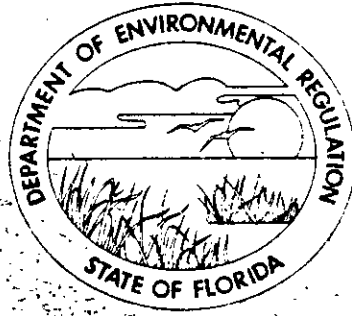
Attached please find one Air Construction Permit for which the applicant is the City of Tampa. The proposed construction is for a 1,000 ton per day resource recovery unit.

The waiver date, after which the permit would be issued by default, is April 25, 1982.

The Bureau recommends your approval and signature.

CHF/pa

Attachment



STATE OF FLORIDA
DEPARTMENT OF
ENVIRONMENTAL REGULATION

CONSTRUCTION
PERMIT

NO. AC 29- 47277

CITY OF TAMPA
MCKAY BAY REFUSE-TO-ENERGY
FACILITY NO. 1

DATE OF ISSUANCE

April 23, 1982

DATE OF EXPIRATION

DECEMBER 31, 1984

Victoria Tschinkel

VICTORIA TSCHINKEL
SECRETARY

Final Determination

McKay Bay Refuse-to-Energy Project
Hillsborough County

Permit Number:

AC 29-47277

Florida Department of Environmental Regulation
Bureau of Air Quality Management
Central Air Permitting

April 21, 1982

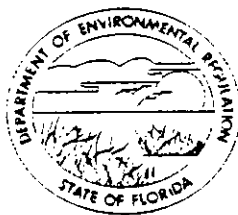
The proposed air pollution construction application from the City of Tampa to build a resource recovery facility has been reviewed by the Bureau. The Department's Intent to Issue the construction permit was published in the Tampa Times on March 22 , 1982. Copies of the preliminary determination were available for public inspection at the Hillsborough County Environmental Protection Commission Office, at the Department's Southwest District Office and at the Bureau of Air Quality Management.

Only one letter of comment was received during the thirty day public notice period. The City of Tampa has requested that another specific condition be added that would allow a procedure for adjusting the emission limitations if the estimated emissions were less than the actual emissions. Since this condition is similar to a general condition in the federal permit and follows the Department's policy, the Bureau agrees with the recommendation.

Therefore, it is recommended that the air construction permit be issued with the above mentioned addition.

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

APPLICANT: City of Tampa
306 East Jackson Street
Tampa, Florida 33602

PERMIT/CERTIFICATION
NO. AC 29-47277

COUNTY Hillsborough

PROJECT: McKay Bay
Refuse-to-Energy
Facility No. 1

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2 and 17-4, Florida Administrative Code. The above named applicant, hereinafter called Permittee, is hereby authorized to perform the work or operate the facility shown on the approved drawing(s), plans, documents, and specifications attached hereto and made a part hereof and specifically described as follows:

Rehabilitation of the three combustion chambers at the Tampa Municipal Incinerator and the construction of a fourth 250 TPD combustion chamber and the modification of the facility to a resource recovery facility.

Attachments:

1. McKay Bay Refuse-to-Energy Project, Application to Construct an Air Pollution Source, July, 1981.
2. McKay Bay Refuse-to-Energy Project, Application to Construct an Air Pollution Source, October, 1981.
3. Letter of Richard Garrity to Steve Smallwood, December 10, 1981, concerning effort to obtain emission offsets.
4. Letter of Richard Garrity to Clair Fancy, February 18, 1982, requesting hourly emission rate changes.

PERMIT NO.: AC 29-47277
APPLICANT: City of Tampa

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions", and as such are binding upon the permittee and enforceable pursuant to the authority of Section 403.161(1), Florida Statutes. Permittee is hereby placed on notice that the department will review this permit periodically and may initiate court action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations indicated in the attached drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit shall constitute grounds for revocation and enforcement action by the department.

3. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information: (a) a description of and cause of non-compliance; and (b) the period of non-compliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

4. As provided in subsection 403.087(6), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

5. This permit is required to be posted in a conspicuous location at the work site or source during the entire period of construction or operation.

6. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Section 403.111, F.S.

7. In the case of an operation permit, permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

8. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant, or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, except where specifically authorized by an order from the department granting a variance or exception from department rules or state statutes.

9. This permit is not transferable. Upon sale or legal transfer of the property or facility covered by this permit, the permittee shall notify the department within thirty (30) days. The new owner must apply for a permit transfer within thirty (30) days. The permittee shall be liable for any non-compliance of the permitted source until the transferee applies for and receives a transfer of permit.

10. The permittee, by acceptance of this permit, specifically agrees to allow access to permitted source at reasonable times by department personnel presenting credentials for the purposes of inspection and testing to determine compliance with this permit and department rules.

11. This permit does not indicate a waiver of or approval of any other department permit that may be required for other aspects of the total project.

12. This permit conveys no title to land or water, nor constitutes state recognition or acknowledgement of title, and does not constitute authority for the reclamation of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

13. This permit also constitutes:

- Determination of Best Available Control Technology (BACT)
- Determination of Prevention of Significant Deterioration (PSD)
- Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

PERMIT NO.: AC 29-47277
APPLICANT: City of Tampa

SPECIFIC CONDITIONS:

1. The maximum allowable emissions from the resource recovery facility No. 1 shall be:

Pollutant	Emission Limitation	
Particulate	0.025 gr/dscf @12% CO ₂	27.9 lb/hr
Sulfur Dioxide		170.0 lb/hr
Nitrogen Oxides		300.0 lb/hr
VOC		9.0 lb/hr

2. Municipal waste only shall be burned in the facility. Wastewater treatment plant sludges or hazardous wastes shall not be incinerated.
3. Hours of operation for the facility shall be 24 hours per day, 7 days per week, 52 weeks per year.
4. An operation and maintenance plan as contained in 17-2.13(7), FAC, shall be submitted with the operating permit applications and be made part of the operating permit.
5. Compliance testing for all criteria shall be conducted in accordance with the methods contained in 40 CFR 60 and 61. A source testing plan shall be submitted to the Department for approval 90 days prior to testing. The Department shall be notified of compliance testing at least 30 days prior to the testing.
6. During the particulate compliance testing, a visible emission standard shall be established by 40 CFR 60, Appendix A, Method 9, as a surrogate compliance method as contained in 17-2.23(3), FAC, and be made a condition of the operating permit.
7. Prior to ninety days before the expiration of this permit, a complete application for an operating permit shall be submitted to the DER Southwest District Office or its designee.

PERMIT NO.: AC 29-47277
APPLICANT: City of Tampa

8. The above stated emission limitations are based upon the best estimates of the permittee. Any change in the information submitted in the application regarding facility emissions or changes in the quantity or quality of materials processed that will result in new or increased emissions must be reported to the permitting authority. If appropriate, the permitting authority may then institute procedures to amend the permit conditions.

Expiration Date: December 31, 1984

Issued this 23 day of April, 1982

 Pages Attached.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

William J. Smith
Signature

Best Available Control Technology (BACT) Determination

Amendment

Hillsborough County

The City of Tampa proposes to construct a facility to incinerate municipal solid waste and use the resulting heat energy to produce electricity as a saleable by-product. The facility is to be located at the site of a previous incinerator installation which has been inoperative since December 1979. This venture, known as the McKay Bay Refuse-to-Energy project, is tentatively a two phase plan.

Phase one is the renovation and conversion of the three existing mass burn combustion furnaces into a state-of-the-art resource recovery system. A fourth combustion furnace will be installed plus waste heat boilers, electrostatic precipitators and a condensing steam turbine electric generator. When phase one is completed the facility will have the capability to burn approximately 300,000 tons per year of solid waste and generate 21 megawatts of electricity. This BACT determination applies to phase one of this project.

Phase two will be the installation of two new mass burn combustion furnaces, with heat recovery systems, and will be located adjacent to the renovated system. The new system will be capable of processing 1,000 tons per day of municipal solid waste and, in addition, to producing electricity will allow the recovery of recyclable materials, such as ferrous metals and aluminum. A BACT determination, if applicable, will be made when the plans for phase two of the project are finalized.

The McKay Bay Refuse-to-Energy project, when completed, will be capable of processing 2,000 tons per day of solid waste. The facility is scheduled to operate continuously with a 20 percent downtime allowance for maintenance.

Applicant's estimated net increase in air emissions (tons/year):

Pollutant	Phase I
Particulates	133
SO ₂	745
NO _x	1314
CO	75
HC	39

The Refuse-to-Energy complex is located on a 14 acre site adjacent to McKay Bay, south of Route U.S. 60, which is in that portion of Hillsborough County classified nonattainment for the pollutants: particulate matter (17-2.13(1)(a) FAC) and ozone (17-2.16(1)(d) FAC). This area is unclassified for the pollutant sulfur dioxide and classified attainment for the pollutant NO_x. Therefore the emission limiting standard for the pollutant particulate matter will be subject to a Lowest Achievable Emission Rate (LAER) determination (17-2.17(6) FAC), and a Best Available Control Technology (BACT) determination for the pollutants SO₂, NO_x and VOC (17-2.04(6)(c) FAC and 17-2.17(3)(a)1.a.(ii) FAC).

BACT Determination Requested by the Applicant:

Pollutant	Emission Limit
SO ₂	Low sulfur content waste
NO _x	Boiler design and operating procedures
VOC	9 pounds per hour

Date of Receipt of a BACT Application:

August 24, 1981

Date of Publication in the Florida Administrative Weekly:

September 4, 1981

Review Group Members:

John Svec, BAQM New Source Review Section
Tom Rogers, BAQM Air Modeling Section
Anthony Jones, Hillsborough County Environmental Prot. Commission
Dan Williams, DER Southwest District

Recommendations from the review group and other respondents were the basis for the final determination.

BACT Determination by DER:

Pollutant	Emission Limit
SO ₂	170 pounds per hour
NO _x	300 pounds per hour
VOC	9.0 pounds per hour

Justification of DER Determination:

The BACT review group members in making the final determination

had to consider the following:

- 1) Resource recovery facilities have a high potential for severely and adversely affecting air quality. Pollutants of concern are SO₂, NO_x, particulates, HC, HCL and HF acid gases.
- 2) The thermal destruction of municipal waste is a recognized method of disposal, and A. reduces landfill area requirements; B. eliminates a breeding ground for rodents; C. reduces possibility of ground water contamination; D. allows for the recovery of various metals for recycle.
- 3) Air pollution control technology is currently commercially available and capable of achieving the levels of control necessary to reduce most emissions from resource recovery facilities.
- 4) Calculation of sulfur dioxide emission factors for solid waste based upon the amount of SO₂ generated per million Btu of solid waste burned show the high value of the solid waste SO₂ emission to be slightly higher than the SO₂ emission factor for residual fuel oil containing 0.5 percent sulfur.
- 5) The technology for controlling NO_x emissions from resource recovery facilities is still in the experimental stage.
- 6) The land area needed for a landfill (dump) will be reduced approximately 90 percent. The residue (ash) to be disposed of in a landfill will be 15 percent of the mass but only 5 percent of the volume of waste collected and burned.

The applicant stated the SO₂ emissions would be 170 pounds per hour. This is analogous to burning oil with a sulfur content of 0.43 percent, which, in most cases, would be BACT for a boiler of this size not using a flue gas desulfurization system. Atmospheric dispersion modeling predicts no violation of the SO₂ increment at this rate of SO₂ emissions. The SO₂ emission limit of 170 pounds per hour, is therefore, determined to be BACT.

The emission of NO_x is the result of two chemical processes that occur during combustion. In one case the heat of combustion causes the oxidation of nitrogen in the air, called thermal NO_x. The second case is when the nitrogen in the fuel becomes oxidized, called fuel NO_x. Some of the factors influencing the amount of

NO_x produced are flame temperature, nitrogen content of the fuel and the amount of excess air used.

Several methods are being investigated to control NO_x emissions during the burning of the fuel or treatment of the flue gas. These methods are in the research and development stage and will require additional testing before being considered as BACT for the control of NO_x emissions from a resource recovery facility.

Resource recovery facilities have the potential to emit large amounts of HC, VOC's and carbon monoxide. Some of the main contributing factors are; the heterogeneous nature of municipal waste, a fuel feed system that does not maintain a constant firing rate and the use of unregulated combustion temperatures and air.

The applicant has proposed a NO_x emission limit of 300 pounds per hour and a VOC emission limit of 9 pounds per hour based on test results from a similar facility. These emission limits are determined to be BACT, with the requirement that the applicant set up an Operation and Maintenance (O&M) plan for the combustion controls so as to minimize these emissions.

The facility is to be located in an area classified nonattainment for the pollutant particulate matter. The emission limit for particulates will be subject to a Lowest Achievable Emission Rate (LAER) determination.

Details of the Analysis May be Obtained by Contacting:

Edward Palagyi, BACT Coordinator
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, FL 32301

Recommended By:

J. K. George
for Steve Smallwood, Chief BAQM
Date: March 17, 1982

Approved:

Terry Cole
Victoria Tschinkel, Secretary
Date: 3/18/82

Lowest Achievable Emission Rate (LAER) Determination
Amendment

City of Tampa

Hillsborough County

The City of Tampa proposes to construct a facility to incinerate municipal solid waste and use the resulting heat energy to produce electricity as a saleable by-product. The facility is to be located at the site of a previous incinerator installation which has been inoperative since December 1979. This venture, known as the McKay Bay Refuse-to-Energy project, is a two phase plan.

Phase one is the renovation and conversion of the three existing mass burn combustion furnaces into a state-of-the-art resource recovery system. A fourth combustion furnace will be installed plus waste heat boilers, electrostatic precipitators and a condensing steam turbine electric generator. When phase one is completed the facility will have the capability to burn approximately 300,000 tons per year of solid waste and generate 21 megawatts of electricity. This LAER determination applies to phase one of this project.

Phase two will be the installation of two new mass burn combustion furnaces, with heat recovery systems, and will be located adjacent to the renovated system. The new system will be capable of processing 1,000 tons per day of municipal solid waste and, in addition, to producing electricity will allow the recovery of recyclable materials, such as ferrous metals and aluminum. A LAER determination, if applicable, will be made when phase two plans are finalized.

The McKay Bay Refuse-to-Energy project, when completed, will be capable of processing 2,000 tons per day of solid waste. The land area needed for a landfill (dump) will be reduced approximately 90 percent. The residue (ash) to be disposed of in a landfill will be 15 percent of the mass but only 5 percent of the volume of waste collected and incinerated. The facility is scheduled to operate continuously with a 20 percent downtime allowable for maintenance.

Applicant's Estimated net increase in air emissions (tons/year):

Pollutant	Phase I
Particulates	133
SO ₂	745
NO _x	1314
CO ^x	75
HC (VOC)	39

Page Two

The Refuse-to-Energy complex is located on a 14 acre site adjacent to McKay Bay, south of Route U.S. 60, which is in that portion of Hillsborough County classified nonattainment for the pollutants; particulate matter (17-2.13(1)(a)FAC) and ozone (17-2.16(1)FAC). Therefore the emission limiting standards for the pollutant particulate matter will be subject to a Lowest Achievable Emission Rate (LAER) determination (17-2.17(6)FAC and 17-2.17(3)(a)1.a.(ii)FAC).

LAER Determination Requested by the Applicant:

Pollutant	Emission Limit
Particulates	0.03 grains/DSCF at 50% excess air

Date of Receipt of a LAER Application:

August 24, 1981

Review Group Members:

John Svec, BAQM New Source Review Section
Tom Rogers, BAQM Air Modeling Section
Anthony Jones, Hillsborough County Environmental Protection Commission
Dan Williams, DER Southwest District

Recommendations from the review group and other respondents were the basis for the final determination.

LAER Determination by DER:

Pollutant	Emission Limit
Particulates	0.025 grains/DSCF, corrected to 12% CO ₂

Justification of DER Determination:

The LAER review group members in making the final determination had to cope with the following:

1. Resource recovery facilities have a high potential for severely and adversely affecting air quality. Pollutants of concern are SO₂, NO_x, particulates, HC (VOC), HCl and HF acid gases.
2. The thermal destruction of municipal waste is a recognized method of disposal, and A. reduces landfill

area requirements; B. eliminates a breeding ground for rodents; C. reduces possibility of ground water contamination; D. allows for the recovery of various metals for recycle.

3. Air pollution control technology is currently commercially available and capable of achieving the levels of control necessary to reduce most emissions from resource recovery facilities.
4. The construction of a new source, or modification, in a nonattainment area shall apply to the Department for a determination of the Lowest Achievable Emission Rate (LAER) that is applicable to the affected pollutant, which, in this case, is particulate matter (17-2.17(6)(a)FAC).

The Department has determined LAER for particulate matter to be 0.025 grains/DSCF, corrected to 12% CO₂. The emission limit is deemed to be achievable based on test data from a similar operating facility located in Nashville, Tennessee.

Details of the Analysis May be Obtained by Contacting:

Edward Palagyi, LAER Coordinator
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, FL 32301

Recommended By:

Steve Smallwood
for Steve Smallwood, Chief, BAQM

Date:

March 19, 1982

Approved:

Victoria Tschinkel
Victoria Tschinkel, Secretary

Date:

March 23, 1982