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#CBPC

TELO- ~~XXXXXXXXXX~~ GANNON CRANKING UNIT



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MAY 21 1979

SOUTHWEST DISTRICT
TAMPA

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

Source Type Air Pollution Incinerator

Type application: Operation Construction

Source Status: New Existing Modification

Source Name: Gannon Cranking Unit County Hillsborough

Source Location: Street Port Sutton Road City Tampa

UTM: East 360,000 North 3,087,500

Appl. Name and Title: Tampa Electric Company

Appl. Address: P. O. Box 111, Tampa, FL 33601

STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

The undersigned owner or authorized representative of * Tampa Electric is fully aware that the statements made in this application for a Operation permit are true, correct and complete to the best of his knowledge and belief. Further, the undersigned agrees to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provisions of Chapter 403, Florida Statutes, and all the rules and regulations of the Department or revisions thereof. He also understands that a permit, if granted by the Department, will be non-transferable and he will promptly notify the Department upon sale or legal transfer of the permitted establishment.

William J. Johnson
Signature of the Owner or Authorized Representative

Date: 4-5-79 Telephone No.: 813/879-4111

*Attach a letter of authorization. If applicant is a corporation, a Certificate of Good Standing must be submitted with application. This may be obtained, for a \$5.00 charge, from the Secretary of State, Bureau of Corporate Records, Tallahassee, Florida 32304.

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA

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 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 the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution control equipment.

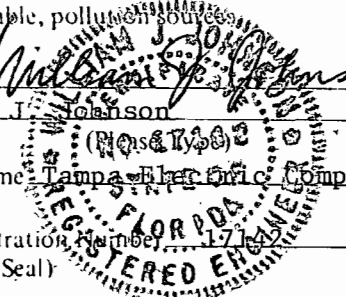
Signature William J. Johnson Mailing Address Tampa Electric Co.

Name W. J. Johnson P. O. Box 111

Company Name Tampa Electric Company Tampa, FL 33601

Florida Registration Number 1711 Telephone No.: 813/879-4111

(Affix Seal) Date 4-5-79



DETAILED DESCRIPTION OF SOURCE

A. Describe the nature and extent of the project. Refer to existing pollution control facilities, expected improvement in performance of the facilities and state whether the project will result in full compliance. Attach additional sheet if necessary.

The project consists of one self-contained combustion gas turbine generating unit. The unit is a predesigned integrated simple cycle, single shaft, three-bearing machine with load connected at the exhaust end of the unit. As shown in the accompanying flow diagram the only inputs for the turbine are atmospheric air and No. 2 distillate fuel oil. It is intended to operate this unit for black start conditions and emergency situations.

B. Schedule of Project Covered in this Application (Construction Permit Application Only).

Start of Construction _____
Completion of Construction _____

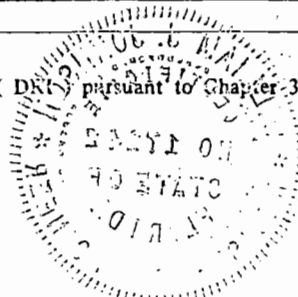
C. Costs of Construction (Show a breakdown of costs for individual components/units of the project serving pollution control purpose only). Information on actual costs shall be furnished with the application for operation permit.

Total investment as of year end 1977: \$1,795,989.46

D. For this source indicate any previous DER permit: issuance dates, and expiration dates; and orders and notices.

N.A.

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code ?YesX.No



D. Airborne Contaminants Discharged (Cont'd.)

Name of Contaminant	Hourly Emission (lb/hr) lbs/MMBTU	Daily Emission (lb./day)	Yearly Emission (T/yr.)	Basis for Emission Estimate (Test Data, Material Balance)
SO ₂ **	.218	See previous page		Based on sulfur content of .215% in fuel (1978)
Particulars	.011	See previous page		Based on .01% ash on fuel and .01% unburned carbon
**Actual discharges using data for the year 1978.				

E. Control Devices:

Name and Type (Model and Serial No.)	Contaminant	Efficiency*	Conditions of Operations	Basis for Efficiency Operational Data, Test, Design, Data)

*See required supplement.
(Include any test data and/or design data for efficiency substantiation)

Type (Be Specific, includes %S, etc.)	Daily Consumption *		Maximum Heat Input MBTU/hr.
	avg/hr. lb/hr	Max/hr. lb/day	
No. 2 fuel oil (0.3% sulfur)	1.32 x 10 ⁴	1.32 x 10 ⁴ (1)	256.5

Note: (1) Peak Conditions based on an assumed 1 hour of operation at 14 MW

* Units: Natural Gas -MCF/hr.; Fuel Oils, Coal-lbs./hr.

Fuel Analysis:

Percent Sulfur 0.3 Percent Ash .01

Density 6.988 lb./gal.

Heat Capacity 19,492 BTU/lb. 136,210 BTU/gal.

Other Fuel Contaminants _____

AIR POLLUTION SOURCES & CONTROL DEVICES
(other than incinerators)

A. Identification of Air Contaminants

- 1) Particulates
 a) Dust b) Fly Ash c) Smoke d) Other (Identify)
- 2) Sulfur Compounds
 a) SO_x as SO₂ b) Reduced Sulfur as H₂S c) Other (Identify)
- 3) Nitrogen Compounds
 a) NO_x as NO₂ b) NH₃ c) Other (Identify)
- 4) Fluorides 5) Acid Mist 6) Odor
- 7) Hydrocarbons 8) Volatile Organic Compounds
- 9) Other (Specify) _____

B. Raw Materials and Chemicals Used (Be Specific)

Description	Utilization Rate lbs./hr.	Approximate Contaminant Content		Relate to Flow Diagram
		Type	% Wt.	

C. Process Rate:

- 1) Total Process input Rate* N.A. Units.
- 2) Product Weight* electricity, 14 MWH/day* Units. N.A.
- 3) Normal Operating Time N.A., if seasonal describe: _____
 hrs./day N.A. days/wk. N.A. wks/yr. N.A.

D. Airborne Contaminants Discharged:

Name of Contaminant	Actual** Discharge		Discharge Criteria Rate*	Allowable Discharge Lbs./hr.	Relate to Flow Diagram
	lbs./hr.	T/yr.			
Sulfur Dioxide**	22.96	3.20	None	N.A.	2
Particulars	1.151	0.161	None	N.A.	2
**Actual discharges using data for the year 1978.					

*Refer to Chapter 17-2.04(2), Florida Administrative Code. (Discharge Criteria: Rate=#/ton P₂O₅, #/M BTU/hr., etc.)

**Estimate only if this is an application to construct.

*The cranking unit is used for black start conditions and emergency situations. For the purpose of completing the calculations required in this application, an operating time of one hour per day has been assumed.

INCINERATOR INFORMATION

Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Patho- logical)	Type V (Liq. & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs./Hr. incinerated							

Description of Waste _____

Total Weight Incinerated lbs./hr. _____ Design Capacity lbs./hr. _____

Approximate Number of Hours of Operation per Day _____, days/week _____

Manufacturer _____ Model No.: _____

Date Constructed: _____

	Volume (ft. *) ³	Heat Release (BTU/hr.)	Fuel		Temp. (° F)
			Type	BTU/hr.	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diameter: _____ Stack Temp.: _____ °F

Type of Pollution Control Device: Cyclone Wet scrubber Afterburner
 Other (Specify): _____

Brief Description of Operating Characteristics of Control Device: _____

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

G. Describe briefly, without revealing trade secrets, the processes/operations generating the airborne emissions identified in this application.

Gas turbine (see figure one) utilizing No. 2 distillate fuel
oil.

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

None

I. Emission Stack Geometry and Flow Characteristics, (Provide Date for each Stack).

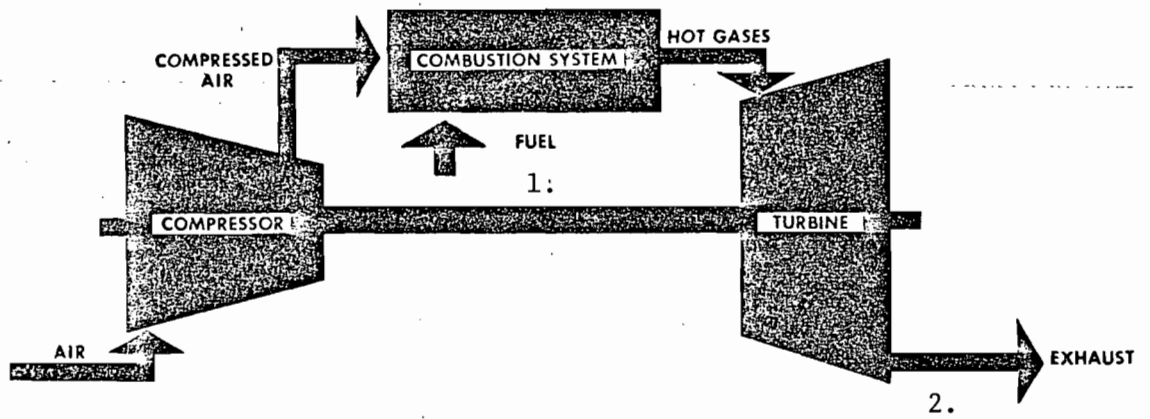
Exit area

Stack Height 35 ft; Stack ~~Diameter~~ 95.7 ft. 2

Gas Flow Rate 527,700 ACFM, Gas Exit Temperature 1010 °F

J. Required Supplements:

1. Total process input rate and product weight – show deviation. Maximum heat input is 256.5 MBTU/hr
2. Efficiency Estimation. NA
3. An 8½" x 11" flow diagram, which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate whether raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particulates are evolved and where finished products are obtained. See Figure 1
4. An 8½" x 11" plot plan showing the exact location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram. See figure 2
5. An 8½" x 11" plot plan showing the exact location of the establishment, and points of airborne emissions in relation to the surrounding area, residences and other permanent structures and roadways. See figure 3
6. If applicable, provide a brief description of the control device or treatment system serving the discharge point for airborne contaminants identified in this application. Include details of the manufacturer, model, size, type and capacity for control/treatment device and the features of the discharge point (height above ground, diameter, period(s) of discharge and discharge temperature). N.A.
7. Plans for storm water control during and after construction. N.A.



Schematic gas flow diagram.

Figure 1.

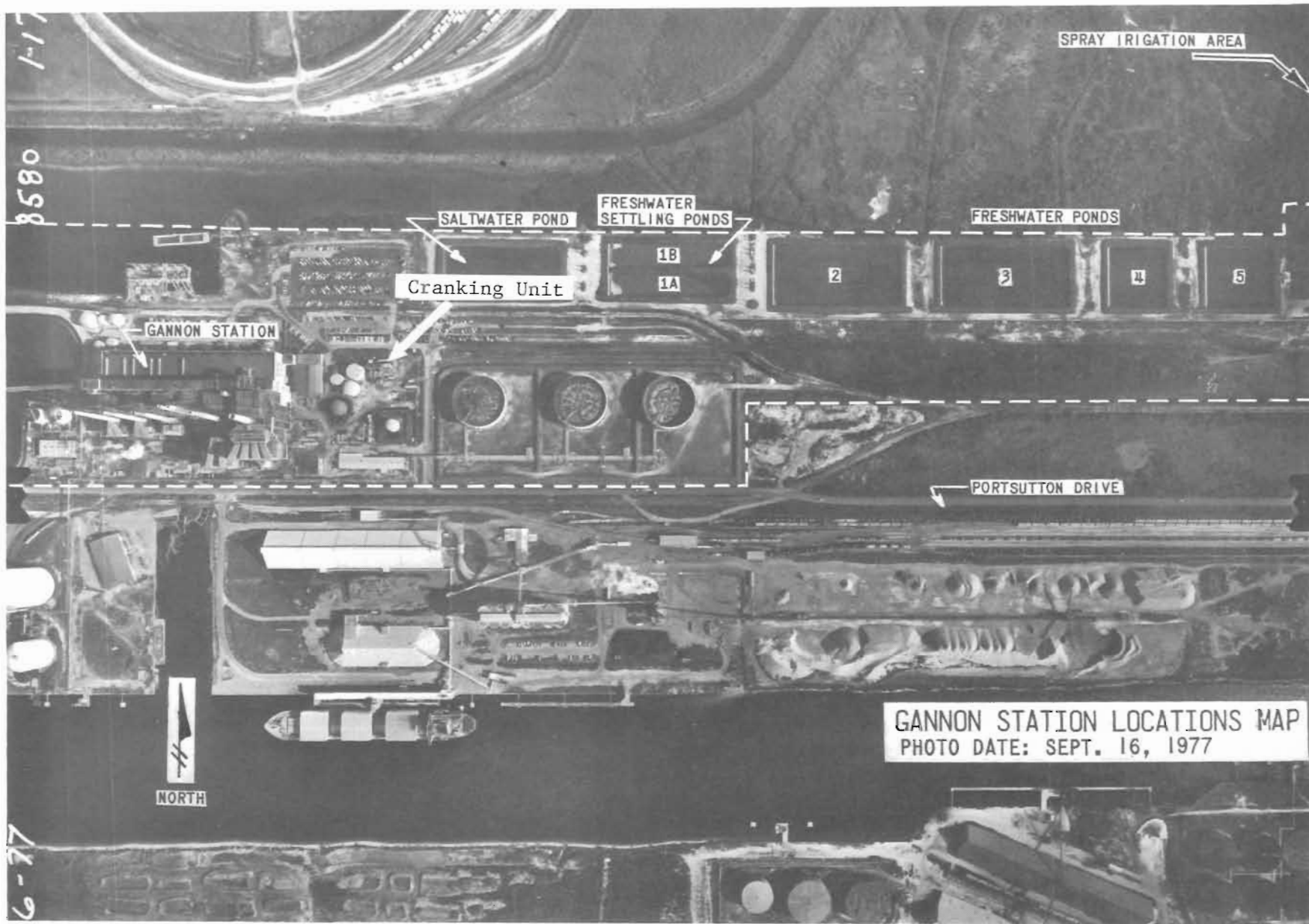
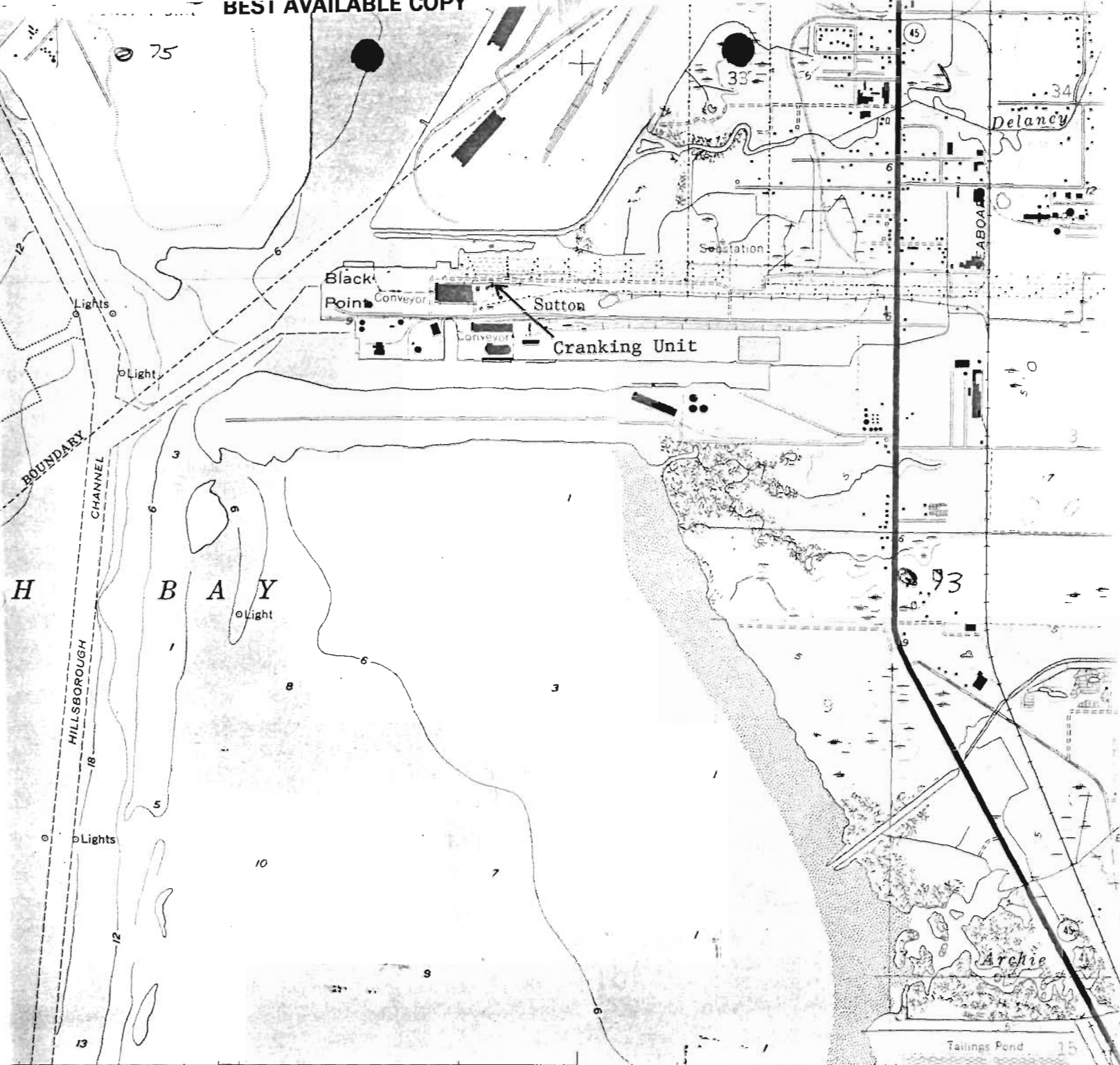
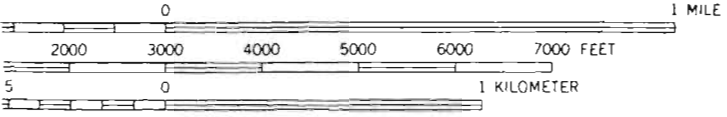


Figure 2.



1358 (GIBSONTON) 1359 1360 25' 1361 1362 1363
4539 IV SW

SCALE 1:24 000



CONTOUR INTERVAL 5 FEET
DATUM IS MEAN SEA LEVEL
SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER
REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
A RANGE OF TIDE IS APPROXIMATELY 2 FEET



CONFORMS WITH NATIONAL MAP ACCURACY STANDARDS
GEOLOGICAL SURVEY, WASHINGTON, D. C. 20242
A GRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

Heavy-d
Medium
Int

Figure 3.



RECORD OF VISIBLE EMISSIONS

Plant Gannon

Date 3/26/79

Wind Direction and Speed SW

Stack Gas Turbine #1

Time 1:30 - 2:00

Observer Rod Burkhardt

Rod Burkhardt

sec. min.	0	15	30	45
0	0	0	0	0
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
8	0	0	0	0
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Sum of # Recorded 0

Total # of Readings 120

Opacity = $\frac{\text{Sum of \# Recorded}}{\text{Total \# of Readings}}$ = 0

Remarks Clear 0% cloudcover

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION



THIS IS TO CERTIFY THAT

Rod Burkhardt, has completed the STATE OF FLORIDA visible emissions evaluation training and is a qualified observer of visible emissions as specified by EPA reference method 9. This certificate expires on April 12, 1979

Judy Sears
Certification Officer

Rod Burkhardt
Bearer's Signature



POST OFFICE BOX 111 TAMPA, FLORIDA 33601 TELEPHONE (813) 879-4111

March 12, 1979

TO WHOM IT MAY CONCERN:

Please be advised that W. J. Johnson, Ph.D., Manager of Environmental Planning, is the authorized representative of Tampa Electric Company concerning matters with which this permit application deals.

Very truly yours,

A handwritten signature in cursive script, appearing to read "J. D. Hicks".

J. D. Hicks
Vice President-Operations

State of Florida

DEPARTMENT OF STATE • DIVISION OF CORPORATIONS

I certify from the records of this office that TAMPA ELECTRIC COMPANY, is a corporation organized under the laws of the State of Florida.

The charter number for this corporation is 157782.

I further certify that said corporation has filed all annual reports and paid all annual report filing fees due this office through December 31, 1977, and has until July 1, 1978 to file its 1978 annual report, before becoming delinquent.

GIVEN under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capital, this the 22nd day of March, 1978.



Gene A. Smathers
SECRETARY OF STATE