TAMPA ELECTRIC
A TECO ENERGY COMPANY

July 16, 1996

Mr. Gerald J. Kissell, P.E.
Division of Air Resource Management
Florida Department of Environmental Protection
Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33612

Via Facsimile and
Certified Mail No. P 880 007 617
Return Receipt Requested

Re: Tampa Electric Company
F.J. Gannon Station
Fly Ash Silo No. 1 - AO29-250137
Fly Ash Silo No. 2 - AO29-250140

Dear Mr. Kissell:

Tampa Electric Company (TEC) has recently reevaluated our fly ash handling methods to increase our flexibility to handle and condition the fly ash produced at Gannon Station. As you know, TEC is currently authorized by FDEP to operate two fly ash silos at Gannon Station. Presently, Silo No. 2 serves boilers 1 through 4, and Silo No. 1 serves boilers 5 and 6. Both silos at Gannon are authorized to handle fly ash in its dry state. In addition, Silo No. 1 has a dual operation mode to unload fly ash in a dry or "conditioned" state.

Fly ash is conditioned by wetting the ash with water in a pugmill. In contrast to dry fly ash, conditioned fly ash is more forgiving since it is easier to transport, store and utilize by potential recyclers. TEC would like to increase operational flexibility by allowing the ash from Silo No. 2 to also be unloaded in a conditioned state.

Our operational personnel have reviewed our present operations, and it appears a simple solution can be implemented that would allow us operational flexibility while maintaining compliance with our existing permit limits. The proposed operation plan involves expanding the use of the pugmill on Silo No. 1, specifically, the fly ash from boilers 1-4 would be given the additional capability to be routed to the pugmill on Silo No. 1. This would be accomplished through the installation of a pipe from Silo No. 2 to the neck below Silo No. 1 that feeds directly into the pugmill. The pipe will enable fly ash from Silo No. 2 to be transported to the pugmill via gravity flow enhanced by slight pulse air to minimize pipe friction. This will be a closed loop system and will not be a fugitive emission source.

Please note that the inclusion of Silo 2 ash through the existing pugmill at F.J. Gannon Station will not increase the ash throughput or change the existing permitted emissions standards. The ash will essentially be routed directly to the pugmill and will not enter Silo No. 1.

We consider our requested changes to be purely descriptive in nature since all current environmental limits will be met. Therefore, we are not requesting a modification to any environmentally related limits, only a descriptive change, as proposed below, to allow for a more flexible mode of operation.

Permit Number AO29-250137, Silo No. 1

Change Operation Description From:

For the operation of F.J. Gannon Station Units 5 and 6 Fly Ash Silo No. 1 (silo No. 1) with baghouse and pugmill. Fly ash that is collected in the hoppers of the electrostatic precipitators of Units 5 and 6 is pneumatically conveyed to a 25 foot diameter, 50 foot high silo. The fly ash in the silo is gravity fed by chute into enclosed tanker trucks or to a pugmill where it is "conditioned" by wetting with water and gravity fed by chute into open bed trucks. The fly ash is then transported to an off site consumer.

To:

For the operation of F.J. Gannon Station Fly Ash Silo No. 1 with baghouse and pugmill. Fly ash collected in the hoppers of the electrostatic precipitators is pneumatically conveyed to a 25 foot diameter, 50 foot high silo. The fly ash in the silo is gravity fed by chute into enclosed tanker trucks or to a pugmill where it is "conditioned" by wetting with water and gravity fed by chute into open bed trucks. In addition, fly ash from F.J. Gannon Station Fly Ash Silo No.2 (silo No. 2) may be routed via gravity flow to a pugmill where it is "conditioned" by wetting with water and gravity fed into open bed trucks. The fly ash is then transported to an off site consumer.

Permit Number AO29-250140, Silo No. 2

Change Operation Description From:

For the operation of F.J. Gannon Station Units 1-4 Fly Ash Silo2 (silo No. 2) with baghouse. Fly ash that is collected in the hoppers of the electrostatic precipitators of Units 1-4 is pneumatically conveyed to a 30 foot diameter, 45.5 foot high silo. The fly ash in the silo is gravity fed by tubing into enclosed tanker trucks for transport to an off-site consumer.

To:

For the operation of F.J. Gannon Station Fly Ash Silo No. 2 with baghouse. Fly ash collected in the hoppers of the electrostatic precipitators is pneumatically conveyed to a 30 foot diameter, 45.5 foot high silo. The fly ash in the silo is then gravity fed into enclosed tanker trucks for transport to an off-site consumer. In addition, fly ash from silo No. 2 may be routed to the pugmill at F. J. Gannon Station Silo No. 1 where it is "conditioned" by wetting with water and gravity fed into open bed trucks. The fly ash is then transported to an off site consumer.

Through this letter, we are requesting a meeting with your staff as soon as possible to discuss the specifics of our proposal. In anticipation of our meeting we have included a drawing of the proposed change in operational conditions for the pugmill, which should be useful for your review.

Thank you for your attention in this matter, should you have any questions, please feel free to call me at (813) 228-4887.

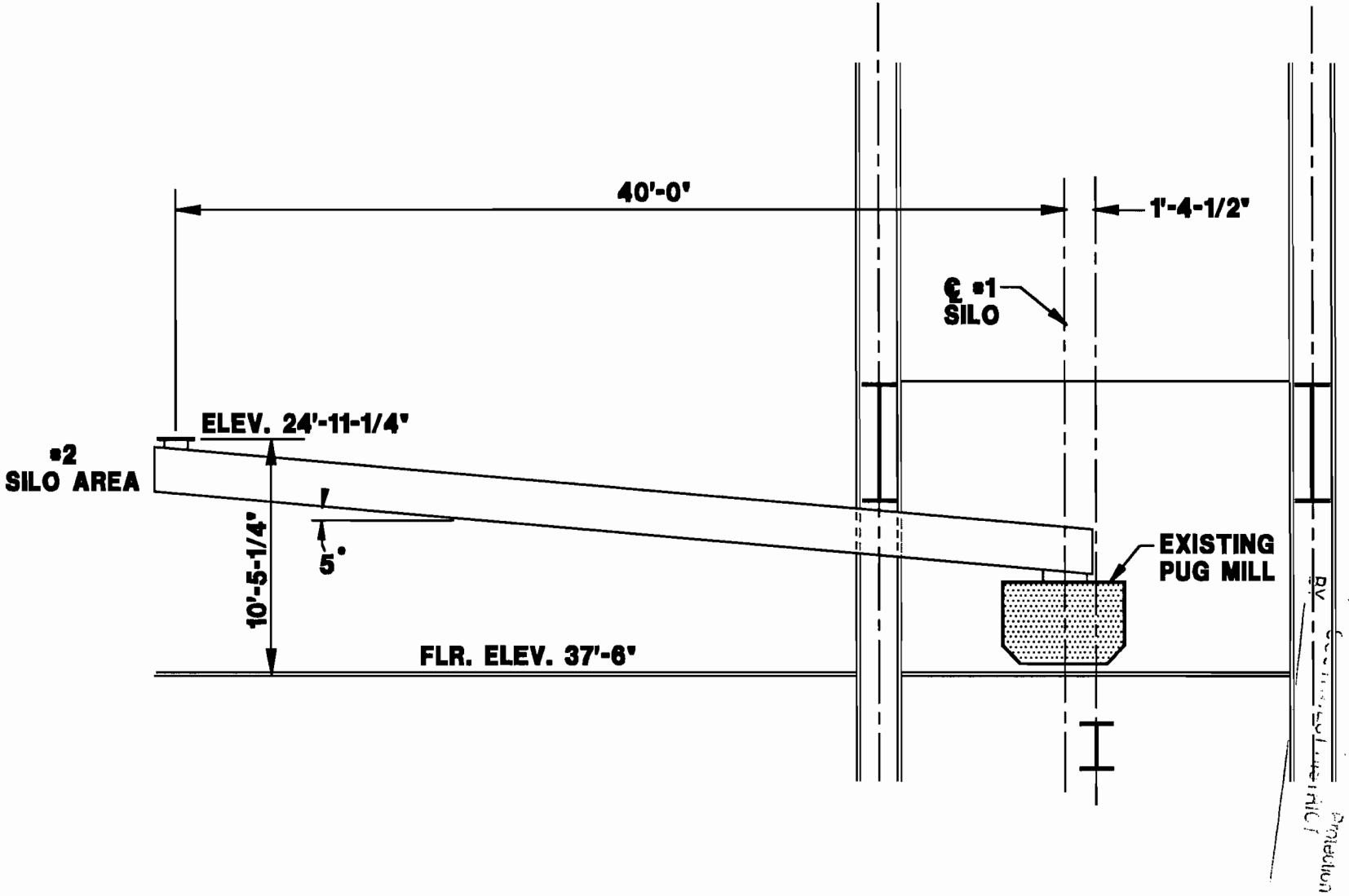
Sincerely,

Laura A. Rector
Engineer
Environmental Planning

Enclosure

EP\gm\LAR065

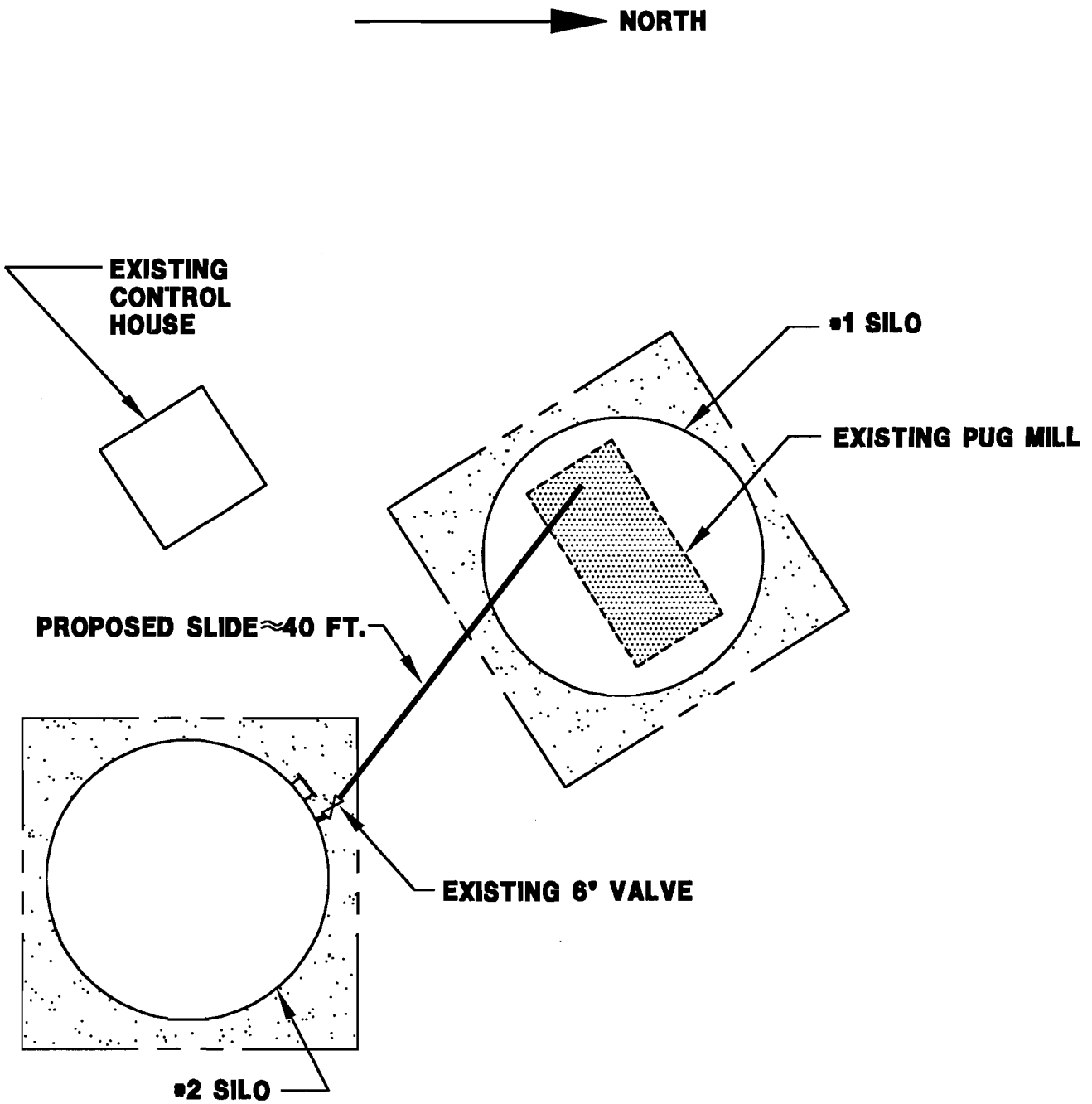
c/enc: Larry Curtin, Holland & Knight



TAMPA ELECTRIC
A TECO ENERGY COMPANY

ELEVATION VIEW OF EXISTING PUG MILL AT SILO #1 GANNON STATION

DESIGNED BY	CHECKED BY	APPROVED BY
JFM		
DATE: 7-96	JOB NO.	
FILE NAME: CINDY-01		DWG. NO.: C-1



TAMPA ELECTRIC
A TECO ENERGY COMPANY

PLAN VIEW OF EXISTING PUG MILL AND SILOS GANNON STATION

DESIGNED BY	CHECKED BY	APPROVED BY
JFM		
DATE: 7-96	JOB NO.	
FILE NAME: CINDY-02		DWG. NO.: C-2

Florida Department of Environmental Regulation
Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347
Lawton Chiles, Governor 813-623-5561 Carol M. Browner, Secretary

September 12, 1991

Ms. Janice K. Taylor
Environmental Planning
Tampa Electric Company
P.O. Box 111
Tampa, Florida 33601-0111

Re: Tampa Electric Company's June 25, 1991 request for authorization to install a pug mill at the F. J. Gannon Station Fly Ash Silo No. 1 (AO29-160258).

Dear Ms. Taylor:

Thank you for pointing out the misunderstanding regarding Tampa Electric Company's designation of which fly ash silo at the F. J. Gannon Station is Fly Ash Silo No. 1. This letter of authorization serves to correct the error in the Department of Environmental Regulation's September 10, 1991 letter of authorization.

The letter of authorization to install a pug mill dated September 10, 1991 and issued under the signature of Mr. J. Harry Kerns is hereby canceled in its entirety, null and void, and is replaced by this letter of authorization.

The Department of Environmental Regulation hereby authorizes the installation of a pug mill at the F. J. Gannon Station Fly Ash Silo No. 1. The Department understands that the purpose of the pug mill is to "condition" the fly ash into a wetted state in order to make it easier for potential recyclers to transport fly ash collected from the F. J. Gannon Station Units 5 and 6. This authorization is subject to the following 8 conditions.

(1) This new pug mill will process fly ash collected from the F. J. Gannon Station Units 5 and 6 (only).

(2) Fly ash will be pneumatically conveyed in a pipe from the individual unit precipitators to the F. J. Gannon Station Fly Ash Silo No. 1.

(3) Test the pugmill for visible emissions (30 minutes, EPA Method 9) within 15 days of completing the installation.

(4) Tampa Electric Company shall notify the Environmental Protection Commission of Hillsborough County at least 10 days in advance of conducting the compliance test required by condition (3) of this authorization.

(5) Compliance testing shall be conducted while processing fly ash within ±10% of the maximum rate, if practicable. The actual processing rate shall be reported with the test data. Any operating restrictions or limitations observed by Tampa Electric Company during the compliance test shall be reported with the test data and will be included in the amended operating permit.

(6) Tampa Electric Company shall comply with all applicable emission limiting standards, all the requirements of Chapter 17-2, F.A.C., and all other requirements under federal, state, or local law.

(7) Submit all of the following to the Air Section of the Environmental Protection Commission of Hillsborough County within 45 days of testing.

(A) Two copies of the visible emissions test data.

(B) Two Certificates of Completion of Construction (signed and sealed).

(C) A $380.00 processing fee for the Environmental Protection Commission of Hillsborough County.

(D) A $250.00 processing fee for the Department of Environmental Regulation.

(8) The authorization granted by this letter shall expire on March 31, 1992.

The Environmental Protection Commission of Hillsborough County and the Department of Environmental Regulation will initiate procedures to amend permit AO29-160258 after receipt of all the items required by this letter. If you have any questions, please call Mr. Sterlin Woodard at (813) 272-5530.

Sincerely,

W. C. Thomas, P.E.
District Air Program Administrator

copy to: Environmental Protection Commission
of Hillsborough County

Florida Department of Environmental Regulation

Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347

Lawton Chiles, Governor 813-623-5561 Carol M. Browner, Secretary

September 10, 1991

Mr. Lynn F. Robinson, P.E.
Manager, Environmental Planning
Tampa Electric Company
P.O. Box 111
Tampa, Florida 33601-0111

THIS LETTER IS CANCELED BY THE SEPTEMBER 12, 1991 LETTER

Re: Your June 25, 1991 request for authorization to install a pug mill at the F. J. Gannon Station Fly Ash Silo No. 1 (AO29-160259).

Dear Mr. Robinson:

The Department of Environmental Regulation hereby authorizes the installation of a pug mill at the F. J. Gannon Station Fly Ash Silo No. 1. The Department understands that the purpose of the pug mill process is to "condition" the fly ash into a wetted state in order to make it easier for potential recyclers to transport fly ash collected from the F. J. Gannon Station Units 1 through 4. This authorization is subject to the following 8 conditions.

(1) This new pug mill will process fly ash collected from the F. J. Gannon Station Units 1 through 4 (only).

(2) Fly ash will be pneumatically conveyed in a pipe from the individual unit precipitators to the F. J. Gannon Station Fly Ash Silo No. 1.

(3) Test the pugmill for visible emissions (30 minutes, EPA Method 9) within 15 days of completing the installation.

(4) Submit all of the following to the Air Section of the Environmental Protection Commission of Hillsborough County within 45 days of testing.

(A) Two copies of the visible emissions test data.

(B) Two Certificates of Completion of Construction (signed and sealed).

(C) A $380.00 processing fee for the Environmental Protection Commission of Hillsborough County.

(D) A $250.00 processing fee for the Department of Environmental Regulation.

(5) Compliance testing shall be conducted while processing fly ash within ±10% of the maximum rate, if practicable. The actual processing rate shall be reported with the test data. Any operating restrictions or limitations observed by Tampa Electric Company during the compliance test shall be reported with the test data and will be included in the amended operating permit.

(6) Tampa Electric Company shall notify the Environmental Protection Commission of Hillsborough County at least 10 days in advance of conducting the compliance test required by condition (3) of this authorization.

(7) Tampa Electric Company shall comply with all applicable emission limiting standards, all the requirements of Chapter 17-2, F.A.C., and all other requirements under federal, state, or local law.

(8) The authorization granted by this letter shall expire on March 31, 1992.

The Environmental Protection Commission of Hillsborough County and the Department of Environmental Regulation will initiate procedures to amend permit AO29-160259 after receipt of all the items required by this letter. If you have any questions, please call Mr. Sterlin Woodard at (813) 272-5530.

Sincerely,

J. Harry Kerns

J. Harry Kerns, P.E.
District Air Engineer

copy to: Environmental Protection Commission
of Hillsborough County

ROGER P. STEWART
EXECUTIVE DIRECTOR
ADMINISTRATIVE OFFICES
AND
WATER MANAGEMENT DIVISION
1900 - 9TH AVENUE
TAMPA, FLORIDA 33605
TELEPHONE (813) 272-5960

AIR MANAGEMENT DIVISION
TELEPHONE (813) 272-5530

WASTE MANAGEMENT DIVISION
TELEPHONE (813) 272-5788

ECOSYSTEMS MANAGEMENT DIVISION
TELEPHONE (813) 272-7104

M E M O R A N D U M

Received PER 8-12-91

DATE: August 7, 1991

TO: Gary Maier THRU J. Harry Kerns, P.E.

FROM: Sterlin Woodard SW THRU Darrel Graziani DG

RE: Authorization - Tampa Electric Company

Attached is a letter of authorization for the proposed addition of a pugmill to the F.J. Gannon Station Fly Ash Silo No. 1. As before, the addition will be handled as an amendment. Authorization requires submission of the appropriate EPC/HC and FDER fee along with a C.O.C.O.C. and a compliance test.

SW:TECO

Florida Department of Environmental Regulation

Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347

Lawton Chiles, Governor 813-623-5561 Carol M. Browner, Secretary

August 7, 1991

EPC DRAFT

Mr. Lynn F. Robinson, P.E.
Tampa Electric Company
Post Office Box 111
Tampa, FL 33601-0111

Re: Tampa Electric Company
F.J. Gannon Station
Fly Ash Silo No. 1

Dear Mr. Robinson:

The Environmental Protection Commission of Hillsborough County (EPC/HC) and the Florida Department of Environmental Regulation (FDER) have reviewed your June 25, 1991 letter requesting authorization to construct a pugmill for the F.J. Gannon Station No. 1.

Authority is hereby granted to proceed with construction of the pugmill. The following are terms of this approval:

1. Test the pugmill within 15 days of completion of construction for visible emissions (30 minute Method 9). Submit two (2) copies of the test data to the Air Section of the Environmental Protection Commission of Hillsborough County within forty-five days of such testing in conjunction with a signed and sealed Certificate of Completion of Construction (Form 17-1.202(3)). A fee of $380.00 (Rules of the Environmental Protection Commission of Hillsborough County Chapter 1-6) should accompany the certificate as well as a $250.00 fee to the Florida Department of Environmental Regulation.

2. Any operating restrictions or limitations taken during the compliance test shall be reported with the test data and will be included in the amended operating permit.

3. The Environmental Protection Commission of Hillsborough County shall be notified 10 days in advance of any compliance test to be conducted on this source.

Upon completion of these items including demonstration of compliance and submittal of the fee, permit AO29-160259 will be amended.

Should you have any questions, please call Sterlin Woodard, EPC/HC, at (813) 272-5530. Thank you.

Sincerely,

EPC DRAFT

W.C. Thomas, P.E.
District Air Program Administrator

bm

cc: Environmental Protection Commission of Hillsborough County

TAMPA ELECTRIC
A TECO ENERGY COMPANY

June 25, 1991

D. E. R.

JUN 27 1991

SOUTHWEST DISTRICT
TAMPA

Mr. Darrel Graziani
Chief - Air Permits
Environmental Protection Commission
of Hillsborough County
1410 West 21st Street
Tampa, FL 33605

Re: Tampa Electric Company
F.J. Gannon Station
Fly Ash Silo No. 1

Dear Mr. Graziani:

Tampa Electric Company (TEC) has recently reevaluated our fly ash handling methods. As you are aware, TEC's decision to examine our methods are due to the recent fluctuations in the construction industry. These fluctuations have required TEC to maximize storage of dry fly ash in our silos and increase our flexibility to handle and condition the ash. As you know, TEC has requested revisions to our air operations permits (No. A029-160255 and No. A029-161082) for Big Bend Station's silos No. 1 and No. 2, to allow operational flexibility. Additionally, TEC has decided to install a pug mill on Big Bend Unit 4 (PA 79-12) fly ash silo in mid-August.

We have recently evaluated the need for a pug mill at F.J. Gannon Station fly ash silo No. 1. TEC has determined that a pug mill at this silo would provide additional operational flexibility to our methods of fly ash handling. The purpose of the pug mill process is to "condition" the fly ash into a wetted state. Conditioned fly ash is easier for potential recyclers to transport from our plants and store on their sites until the fly ash can be used.

TEC has scheduled the installation of this pug mill at F.J. Gannon Station to occur in October of this year. For your information, the pug mill will not increase the ash throughput or change the existing permitted emissions standards.

Should you have any questions in this matter, please feel free to call Ms. Janice Taylor or me at 228-4836.

Sincerely,

Lynn F. Robinson

Lynn F. Robinson, P.E.
Manager
Environmental Planning

sn/QQ365

cc: √R. Garrity, Ph.D., FDER-Tampa

TAMPA ELECTRIC
A TECO ENERGY COMPANY

CERTIFIED MAIL #P-601 896 787
RETURN RECEIPT REQUESTED

February 1, 1989

Roger P. Stewart
Environmental Protection Commission
of Hillsborough County
1900 - 9th Avenue
Tampa, FL 33605

Richard D. Garrity, Ph.D.
Florida Department of
Environmental Regulation
Southwest District
4520 Oak Fair Boulevard
Tampa, FL 33610-7347

Re: Tampa Electric Company
Air Operations Permit
Renewal Application
Gannon Station Units 1-4 Fly Ash Silo

Gentlemen:

Enclosed please find an original and three (3) copies of an Application for Renewal of Permit to Operate an Air Pollution Source, including an operation and maintenance plan for the silo and an authorization letter for the applicant.

The application package, together with a check for $355.00 to the Hillsborough County Board of County Commissioners and a check for $750.00 to the Florida Department of Environmental Regulation, are included with Mr. Stewart's copy.

If you should have any questions, please feel free to call.

Sincerely,

Jerry L. Williams

Jerry L. Williams
Director
Environmental

JLW/ams/LL025.DOC

Enclosures

E. E. R.
FEB 0 2 1989
SOUTHWEST DIST...
TAMPA

GANNON A029-80048

TAMPA ELECTRIC
A TECO ENERGY COMPANY

June 2, 1986

Mr. Bill Thomas
Florida Department of
Environmental Regulation
District Office
7601 Highway 301 North
Tampa, Florida 33610-9544

Re: Tampa Electric Company
Administrative Changes to
Air Permits

Dear Mr. Thomas:

During a recent review of Tampa Electric Company's air permits, administrative inconsistencies were identified that have lead to hardships on us that we feel are not intended by the Department. As shown on the attachment, the inconsistencies involve stack test scheduling, notifications and reporting requirements contained in older air permits. The requested modifications reflect recent changes in Department regulations which depart from previous Department rules or policies.

In order to communicate our concerns and get feedback from the Department, members of my staff met with Mr. Jim Estler of your staff and Mr. Jerry Campbell of the Hillsborough County Environmental Protection Commission on May 29, 1986. Based on this meeting, it is our understanding that neither Mr. Estler nor Mr. Campbell are opposed to modifying the applicable air permits to provide consistency as outlined to them.

Tampa Electric Company respectfully requests that the air permits listed on the attachment be modified to reflect consistent administrative conditions as stated. The requested modification will not change our environmental limits, they only clarify the conditions and time frames for compliance related reports.

We would greatly appreciate an expeditious review of our request for permit modifications, especially as they relate to Units 4, 5 and 6 at Gannon Station which will required compliance testing or excess opacity report submittal in the near future.

TAMPA ELECTRIC COMPANY
P.O. Box 111 Tampa, Florida 33601-0111 (813) 228-4111

Thank you for your cooperation, and, please call me if you have any questions.

Sincerely,

A. Spencer Autry
Manager
Environmental Planning

ASA/jst/004/EE1

Attachment

cc: Jim Estler, FDER
Jerry Campbell, HCEPC

INCONSISTENCIES IN ADMINISTRATIVE PROCEDURES

DER AIR PERMITS
TAMPA ELECTRIC COMPANY (TEC)

The following modifications will provide consistent reporting and administrative requirements for the two major reports required in TEC's air permits:

1. Specify that all annual compliance testing should be done within a 90 day period prior to the specified annual test date. (The regulations require annual test during Fiscal year - October 1 to September 30.)

   The permits below either do not address the 90 day test window, or are more stringent than 90 days:

Source	Permit Number	Specific Condition
Hookers Point		
Unit 1	A029-47726	1
Unit 2	A029-47725	1
Unit 3	A029-47724	1
Unit 4	A029-47723	1
Unit 5	A029-47722	1
Unit 6	A029-47721	1
F.J. Gannon		
Unit 4	A029-80043	4
Unit 5	A029-47728	1
Unit 6	A029-47727	1
Combustion Turbine 1	A029-85099	1
Fly Ash Silo 1	A029-80048	1
Fly Ash Silo 2	A029-80046	1
Economiser Silo	A029-87409	1
Big Bend		
Unit 1	A029-63296	1
Combustion Turbine 1	A029-85100	1

2. Specify that all compliance test notifications be non-written notifications pursuant to 17-2.700(2)(a)5:

The permits below contain a written notification requirement:

Source	Permit Number	Specific Condition
F.J. Gannon		
Combustion Turbine 1	A029-85099	4
Fly Ash Silo 1	A029-80048	5
Fly Ash Silo 2	A029-80046	3
Economiser Ash Silo	A029-87409	3
Big Bend		
Combustion Turbine 1	A029-85100	5

3. Specify that all compliance test submittals shall be within 45 days as required in 17-2.700(7).

The permits below contain a test submittal date more stringent than 45 days.

Source	Permit Number	Specific Condition
Hookers Point		
Unit 1	A029-47726	1
Unit 2	A029-47725	1
Unit 3	A029-47724	1
Unit 4	A029-47723	1
Unit 5	A029-47722	1
Unit 6	A029-47721	1
F.J. Gannon		
Unit 5	A029-47728	1
Unit 6	A029-47727	1

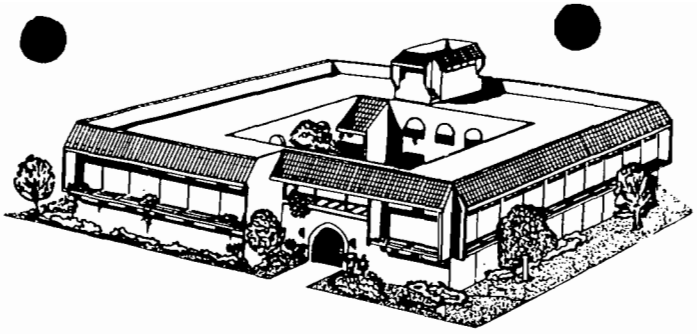
4. Specify that excess emissions refer to 6-minute average opacity.

The permits below either do not address the averaging time or specify a 1-minute average:

Source	Permit Number	Specific Condition
F.J. Gannon		
Unit 4	A029-80043	7
Big Bend		
Unit 1	A029-63296	6

HILLSBOROUGH COUNTY
ENVIRONMENTAL PROTECTION
COMMISSION

RODNEY COLSON
RON GLICKMAN
PAM IORIO
RUBIN E. PADGETT
JAN KAMINIS PLATT
JAMES D. SELVEY
PICKENS C. TALLEY II



ROGER P. STEWART
DIRECTOR

1900 - 9th AVE
TAMPA, FLORIDA 33605

TELEPHONE (813) 272-5960

MEMORANDUM

D. E. R.

Date June 12, 1986

To Jim Estler

JUN 16 1986

From Jerry Campbell JC

SOUTH WEST DISTRICT
TAMPA

Subject: TECO Permit Amendments

Having reviewed TECO's requests in Spencer Autry's letter of June 2, 1986 to Bill Thomas, I recommend approval of the following amendments:

Gannon Unit 4 (AO29-80043)
Change Specific condition #4 to read:

4. This unit shall be stack tested for particulate matter (under both soot blowing and non soot blowing operating conditions), sulfur dioxide and visible emissions at intervals of 12 months from the date of May 30, 1984 or within a ninety (90) day period prior to this date. The Method 9 Test period on this source shall be sixty (60) minutes. Testing procedures shall be consistent with the requirements of Section 17-2.700, F.A.C.

Change specific condition #7 to read:

7. A report shall be submitted to both the Department of Environmental Regulation and the Hillsborough County Environmental Protection Commission within 30 days following each calendar quarter detailing any excess opacity readings recorded during the three month period. For the purpose of this report, excess emission shall be defined as all six minute averages of opacity greater than 20 percent, except as specified in Specific Condition No. 2. The information supplied in this report shall be consistent with the reporting requirements of 40 CFR 51 Appendix P [Section 17-2.710(1), F.A.C.]. This report shall be submitted in duplicate to the Hillsborough County Environmental Protection Commission.

Gannon Unit 5 (AO29-47728)
Change specific condtiion #1 to read:

1. This unit shall be stack tested for particulate matter (under both soot blowing and non soot blowing operating conditions), sulfur dioxide and visible emissions at intervals of 12 months from the date of July 29, 1981 or within a ninety (90) day period prior to this date. The Method 9 Test period on this source shall be sixty (60) minutes. Testing procedures shall be consistent with the requirements of Section 17-2.700, F.A.C. Two copies of the test report shall be submitted to the Air Section of the Hillsborough County Environmental Protection Commission within 45 days of testing.

Gannon Unit #6 (A029-47727)
Change Specific condition #1 to read:

1. This unit shall be stack tested for particulate matter (under both soot blowing and non soot blowing operating conditions), sulfur dioxide and visible emissions at intervals of 12 months from the date of July 29, 1981 or within a ninety (90) day period prior to this date. The Method 9 Test period on this source shall be sixty (60) minutes. Testing procedures shall be consistent with the requirements of Section 17-2.700, F.A.C. Two copies of the test report shall be submitted to the Air Section of the Hillsborough County Environmental Protection Commission within 45 days of testing.

Hookers Point Unit #1 (A029-47726)
Change specific condition #1 to read:

1. This unit shall be stack tested for particulate matter (under both soot blowing and non soot blowing operating conditions), sulfur dioxide and visible emissions at intervals of 12 months from the date of January 27, 1982 or within a ninety (90) day period prior to this date. The Method 9 Test period on this source shall be sixty (60) minutes. Testing procedures shall be consistent with the requirements of Section 17-2.700, F.A.C. Two copies of the test report shall be submitted to the Air Section of the Hillsborough County Environmental Protection Commission within 45 days of testing. A fuel analysis may be submitted in lieu of stack testing for sulfur dioxide.

Hookers Point Unit #2 (A029-47725)
Change specific condition #1 to read:

1. This unit shall be stack tested for particulate matter (under both soot blowing and non soot blowing operating conditions), sulfur dioxide and visible emissions at intervals of 12 months from the date of January 27, 1982 or within a ninety (90) day period prior to this date. The Method 9 Test period on this source shall be sixty (60) minutes. Testing procedures shall be consistent with the requirements of Section 17-2.700, F.A.C. Two copies of the test report shall be submitted to the Air Section of the Hillsborough County Environmental Protection Commission within 45 days of testing. A fuel analysis may be submitted in lieu of stack testing for sulfur dioxide.

Hookers Point Unit #3 (A029-47724)
Change specific condition #1 to read:

1. This unit shall be stack tested for particulate matter (under both soot blowing and non soot blowing operating conditions), sulfur dioxide and visible emissions at intervals of 12 months from the date of January 27, 1982 or within a ninety (90) day period prior to this date. The Method 9 Test period on this source shall be sixty (60) minutes. Testing procedures shall be consistent with the requirements of Section 17-2.700, F.A.C. Two copies of the test report shall be submitted to the Air Section of the Hillsborough County Environmental Protection Commission within 45 days of testing. A fuel analysis may be submitted in lieu of stack testing for sulfur dioxide.

Hookers Point Unit #4 (A029-47723)
Change specific condition #1 to read:

1. This unit shall be stack tested for particulate matter (under both soot blowing and non soot blowing operating conditions), sulfur dioxide and visible emissions at intervals of 12 months from the date of January 27, 1982 or within a ninety (90) day period prior to this date. The Method 9 Test period on this source shall be sixty (60) minutes. Testing procedures shall be consistent with the requirements of Section 17-2.700, F.A.C. Two copies of the test report shall be submitted to the Air Section of the Hillsborough County Environmental Protection Commission within 45 days of testing. A fuel analysis may be submitted in lieu of stack testing for sulfur dioxide.

Hookers Point Unit #5 (A029-47722)
Change specific condition #1 to read:

1. This unit shall be stack tested for particulate matter (under both soot blowing and non soot blowing operating conditions), sulfur dioxide and visible emissions at intervals of 12 months from the date of January 27, 1982 or within a ninety (90) day period prior to this date. The Method 9 Test period on this source shall be sixty (60) minutes. Testing procedures shall be consistent with the requirements of Section 17-2.700, F.A.C. Two copies of the test report shall be submitted to the Air Section of the Hillsborough County Environmental Protection Commission within 45 days of testing. A fuel analysis may be submitted in lieu of stack testing for sulfur dioxide.

Hookers Point Unit #6 (A029-47721)
Change specific condition #1 to read:

1. This unit shall be stack tested for particulate matter (under both soot blowing and non soot blowing operating conditions), sulfur dioxide and visible emissions at intervals of 12 months from the date of January 27, 1982 or within a ninety (90) day period prior to this date. The Method 9 Test period on this source shall be sixty (60) minutes. Testing procedures shall be consistent with the requirements of Section 17-2.700, F.A.C. Two copies of the test report shall be submitted to the Air Section of the Hillsborough County Environmental Protection Commission within 45 days of testing. A fuel analysis may be submitted in lieu of stack testing for sulfur dioxide.

Gannon Combustion Turbine #1 (A029-85099)
Change specific condition #1 to read:

1. Test the emissions for the following pollutant(s) at intervals of 12 months from the date March 15, 1984, or within a ninety (90) day period prior to this date, and submit 2 copies of test data to the Air Section of the Hillsborough County Environmental Protection Commission office within forty five days of such testing [Section 17-2.700 (2), Florida Administrative Code, (F.A.C.)].

( )	Particulates	( )	Sulfur Oxides
( )	Fluorides	( )	Nitrogen Oxides
(X)	Opacity	( )	Hydrocarbons
		( )	Total Reduced Sulfur

*Fuel analysis may be submitted for required sulfur dioxide emission test.

Change specific condition #4 to read:

4. The Hillsborough County Environmental Protection Commission shall be notified 15 days prior to compliance testing.

Gannon Fly Ash Silo #1 - 4 (AO29-80048)
Change specific condition #1 to read:

1. Compliance with the opacity standard set forth below shall be demonstrated by conducting 30 minute visible emission tests as units #3, #2 & #1 are converted to coal and begin utilizing this silo. By November 15, 1984, 60 days prior to the expiration of construction permit #AC29-41941, a visible emission test shall be submitted while loading the silo from Units #3 & #4. By January 15, 1986, 60 days prior to the expiration of construction permit AO 29-41942, a visible emission test shall be submitted while loading the silo from Units #2, #3 & #4. By January 15, 1987, 60 days prior to the expiration of construction permit AC29-41943, a visible emission test shall be submitted while loading the silo from Unit #1 and two of the remaining 3 units. Thereafter, visible emissions tests shall be conducted while loading the silo from 3 of the 4 units at 12 month intervals. Tests can be conducted within a ninety (90) day period prior to the dates specified above.

Change specific condition #5 to read:

5. The Hillsborough County Environmental Protection Commission shall be notified 15 days prior to compliance testing.

Gannon Fly Ash Silo #5-6 (AO29-80046)
Change specific condition #1 to read:

1. Test the baghouse for visible emissions at intervals of twelve months from the date of November 15, 1983 or within a ninety (90) day period prior to this date. The compliance test shall be conducted using EPA Method #9 (opacity). The Method #9 test interval on this source shall be thirty (30) minutes. Two copies of the test data shall be submitted to the Air Section of the Hillsborough County Environmental Protection Commission within 45 days of testing.

Change specific condition #3 to read:

3. The Hillsborough County Environmental Protection Commission shall be notified 15 days prior to compliance testing.

Gannon Economiser Silo (AO29-87409)
Change specific condition #1 to read:

1. Test the baghouse for visible emissions at intervals of twelve months from the date of December 4, 1983 or within a ninety (90) day period prior to this date. The compliance test shall be conducted using EPA Method #9 (opacity). The Method #9 test interval on this source shall be thirty (30) minutes. Two copies of the test data shall be submitted to the Air Section of the Hillsborough County Environmental Protection Commission within 45 days of testing.

Change spcific condition #2 to read:

2. The Hillsborough County Environmental Protection Commission shall be notified 15 days prior to compliance testing.

If you have any questions concerning the contents of this memorandum, please contact me.

JC/ch

CH2/16

TO: The File

THROUGH: Bill Thomas

FROM: Jim Estler 6-26-84

DATE: June 22, 1984

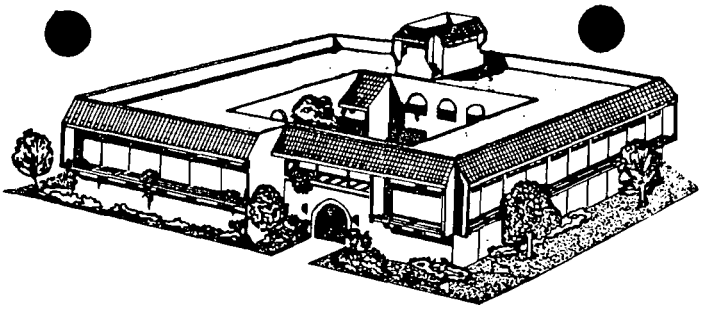
SUBJECT: Hillsborough County - AP
Tampa Electric Company
A029-80043, 80046, 80047 & 87409

Attached are four permits which cover the operation of Gannon Station Unit 4, its economizer ash silo, and two fly ash silos for Units 1 thru 4 and 5 & 6. These sources are subject to the particulate RACT requirements of Chapter 17-2, F.A.C. TECO has reviewed the draft permits and now find the conditions acceptable. HCEPC comments have been received and incorporated into the permits.

Recommend these permits be issued as conditioned.

JWE/scm

HILLSBOROUGH COUNTY
ENVIRONMENTAL PROTECTION
COMMISSION
E. L. BING
RODNEY COLSON
MATT JETTON
JOHN R. PAULK
JAN KAMINIS PLATT



ROGER P. STEWART
DIRECTOR

1900 - 9th AVE
TAMPA, FLORIDA 33605

TELEPHONE (813) 272-5960

January 12, 1984

John B. Ramil, P.E.
Manager of Environmental Planning
Tampa Electric Company
P. O. Box 111
Tampa, Florida 33601

RE: APPLICATIONS FOR AIR PERMITS FOR GANNON UNIT IV, FLYASH SILO 1-4 AND FLYASH SILO 5-6

Dear Mr. Ramil:

Upon review of the above applications with the Florida Department of Environmental Regulations, the Hillsborough County Environmental Protection Commission has determined that the above applications are incomplete. As a result these applications will be held in abeyance until the following information is supplied to this office pursuant to Chapter 67-1504 Section 10 of the Hillsborough County Environmental Protection Act.

Unit #4

1) Submit the compliance plan referred to in specific condition #12 of the construction permit #AC29-41940.

2) Provide the spark rate for the ESP unit which is required for the operation and maintenance (O&M) plan under F.A.C. 17-2.650(2)(g)1.c.

3) State the process rate for the economizer ash silo.

4) Provide the manufacturer's guaranty on the .03 grain per dry standard cubic foot emission rate claimed on the application under the conditions stated for the baghouse.

5) Expand on the maintenance schedule for the baghouse on the economizer ash silo for the O&M plan.

6) Provide stack data for the outlet on the baghouse for the economizer ash silo requested under Section III H. of the application.

Flyash Silo 1-4/Flyash Silo 5-6

7) Provide the manufacturer's guaranty on the .03 grains per dry standard cubic foot emission rate claimed on the applications under the conditions stated. Or if you choose these units can be stack tested to show compliance with the .03 standard. Either option is acceptable to this office.

8) Schedule visible emission tests with this office for the pick up points for the truck loading. It is our understanding that this has not been done before and it will be necessary to test to ensure that the system is adequate.

9) Provide the discharge point data requested in Section III H. of the applications for each baghouse.

10) The application states that there are 2 baghouses on silo 1-4, yet only 1 visible emission test was submitted. Please explain this. Is this the flyash system A and B mentioned in the attachment?

11) How is the high pressure determined that is monitored on the control panels?

12) Specify the material handling rates during the visible emission tests.

13) Expand on the O&M plans submitted for the control equipment as in the attached example.

If you have any questions concerning the above items, please contact me.

Sincerely,

Jerry Campbell

Jerry Campbell
Environmental Engineer
Hillsborough County Environmental
Protection Commission

JC:dr

cc: Bill Thomas, DER

attachments

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHWEST DISTRICT

7601 HIGHWAY 301 NORTH
TAMPA, FLORIDA 33610

D. E. R.

JUN 14 1984

SOUTH WEST DISTRICT
TAMPA

WAIVER OF 90 DAY TIME LIMIT UNDER SECTIONS 120.60(2) AND 403.0876, FLORIDA STATUTES

License (Permit, Certification) Application No. A029-80048

Applicant's Name: Tampa Electric Company

The undersigned has read Sections 120.60(2) and 403.0876, Florida Statutes, and fully understands the applicant's rights under that section.

With regard to the above reference license (permit, certification) application, the applicant hereby with full knowledge and understanding of (his) (her) (its) rights under Sections 120.60(2) and 403.0876, Florida Statutes, waives the right under Sections 120.60(2) and 403.0876, Florida Statutes, to have the application approved or denied by the State of Florida Department of Environmental Regulation within the 90 day time period prescribed in Sections 120.60(2) and 403.0876, Florida Statutes. Said waiver is made freely and voluntarily by the applicant, is in (his) (her) (its) self-interest, and without any pressure or coercion by anyone employed by the State of Florida Department of Environmental Regulation.

This waiver shall expire on the 29 day of June 1984.

The undersigned is authorized to make this waiver on behalf of the applicant.

JUDITH K. CASTELLANO NOTARY PUBLIC STATE OF FLORIDA AT LARGE

Signature

A. Spencer Autry
Please Type Name of Signee

June 14, 1984
Date

Sworn to and subscribed before me this 14th day of June 1984.

Judith Kay Castellano
Notary Public, State of Florida at Large
My Commission Expires June 27, 1986

Section 120.60, Florida Statutes

(2) When an application for a license is made as required by law, the agency shall conduct the proceedings required with reasonable dispatch and with due regard to the rights and privileges of all affected parties or aggrieved persons. Within 30 days after receipt of an application for a license, the agency shall examine the application, notify the applicant of any apparent errors or omissions, and request any additional information the agency is permitted by law to require. Failure to correct an error or omission or to supply additional information shall not be grounds for denial of the license unless the agency timely notified the applicant within this 30 day period. The agency shall notify the applicant if the activity for which he seeks a license is exempt from the licensing requirement and return any tendered application fee within 30 days after receipt of the original application or within 10 days after receipt of the timely requested additional information or correction of errors or omissions. Every application for license shall be approved or denied within 90 days after receipt of the original application or receipt of the timely requested additional information or correction of errors or omissions unless a shorter period of time for agency action is provided by law. The 90-day or shorter time period shall be tolled by the initiation of a proceeding under Section 120.57 and shall resume 10 days after the recommended order is submitted to the agency and the parties. Any application for a license not approved or denied within the 90-day period or shorter time period, within 15 days after conclusion of a public hearing held on the application, or within 45 days after the recommended order is submitted to the agency and the parties, whichever is latest, shall be deemed approved and, subject to the satisfactory completion of an examination, if required as prerequisite to licensure, the license shall be issued. The Public Service Commission, when issuing a license, and any other agency, if specifically exempted by law, shall be exempt from the time limitations within this subsection. Each agency, upon issuing or denying a license, shall state with particularity the grounds or basis for the issuance or denial of same, except where issuance is a ministerial act. On denial of a license application on which there has been no hearing, the denying agency shall inform the applicant of any right to a hearing pursuant to Section 120.57.

Section 403.0876, Florida Statutes

Permits; processing. ---Within 30 days after receipt of an application for a permit under this chapter, the department shall review the application and shall request submittal of all additional information the department is permitted by law to require. If the applicant believes any departmental request for additional information is not authorized by law or departmental rule, the applicant may request a hearing pursuant to s. 120.57. Within 30 days after receipt of such additional information, the department shall review it and may request only that information needed to clarify such additional information or to answer new questions raised by or directly related to such additional information. If the applicant believes the request of the department for such additional information is not authorized by law or departmental rule, the department, at the aplicant's request, shall proceed to process the permit application. Permits shall be approved or denied within 90 days after receipt of the original application, the last item of timely requested additional material, or the applicant's written request to begin processing the permit application.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

Rec'd 6-20-84 JWE

June 20, 1984

Richard B. Garrity, Ph.D.
Florida Department of
Environmental Regulation
7601 Highway 301 North
Tampa, FL 33610-9544

Re: Air Operation Permit Applications
Gannon Station Flyash Silos
Tampa Electric Company

Dear Dr. Garrity:

On reviewing the particulate emissions estimate for the Gannon Station Units 1-4 flyash silo baghouse, an incorrect assumption regarding the expected gas exit pressure was identified. The gas exit pressure at the baghouse vent is expected to be approximately atmospheric pressure (29.92 inches of mercury), not maximum silo pressure as previously assumed. Revised calculations and a revised permit application page reflecting the above correction are attached. (See Enclosures 1 & 2)

Please also find attached revised calculations and a revised permit application page for the Gannon Units 5 and 6 flyash silo permit application. Since the emissions estimate for Units 5 and 6 flyash silo were based on emissions from the Units 1-4 flyash silo , revisions were necessary to maintain accuracy and consistency. (See Enclosures 3 & 4)

As can be seen in the enclosures, emissions from both baghouse systems are still expected to be minimal:

(1) The maximum expected emission from the Units 1-4 flyash silo baghouse is 0.78 lbs/hr and the potential emission, 390 lbs/hr.

(2) The maximum expected emission from the Units 5 & 6 flyash silo baghouse is 1.22 lbs/hr and the potential emissions, 1216 lbs/hr.

TAMPA ELECTRIC COMPANY
P.O. Box 111 Tampa, Florida 33601 (813) 228-4111

If you should have any questions, please feel free to call.

Sincerely,

A. Spence Autry
Manager
Environmental Planning

ASA/tb

cc: Jim Estler (w/attachments)
Dan Williams (w/attachments)
Jerry Campbell (w/attachments)

Enclosure I

Attachment D

GANNON STATION UNITS 1-4 FLYASH SILO

EMISSION CALCULATIONS

(A.) Maximum Expected Emissions:

Maximum expected emissions = maximum baghouse emissions = 0.03 gr/dscf (Design)
Capacity of baghouses (2) = 4696 Acfm (Total)

$$dscfm = (Acfm)(FDA)\frac{(528)}{(T_A)}\frac{(P_A)}{(29.92)}$$

where: Acfm = Actual cubic feet per minute
dscfm = dry standard cubic feet per minute
FDA = Fraction dry air (max = 1.0)
T_A = Absolute gas temp. (^oR)
P_A = Absolute pressure (in. Hg.)

$$dscfm = (Acfm)(1.0)\frac{(528)}{(810^oR)}\frac{(29.92\ in.\ Hg.)}{(29.92)} = (0.65)(Acfm)$$

$$\therefore 4696\ Acfm = (4696)\left(0.65\ \frac{dscfm}{Acfm}\right) = 3052\ dscfm$$

Thus, maximum expected emissions:

$$= \left[3052\ \frac{dscf}{min.}\right]\left[0.03\ \frac{gr}{dscf}\right]\left[0.002285\ \frac{oz}{gr}\right]\left[\frac{1}{16}\ \frac{lb}{oz}\right]\left[60\ \frac{min}{hr.}\right]$$

$$= 0.78\ \frac{lbs}{hr}$$

(B) Potential Emissions

= maximum emissions ÷ (1-baghouse efficiency)
= 0.78 ÷ (1-.998)
= 390 $\frac{lbs}{hr}$

Revised: 6/19/84

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

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

Not Applicable

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

B. Process Rate, if applicable: (See Section V, Item 1) Not Applicable

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/~~xx~~ hr.	T/yr	
Particulate	0.78 *	Not	See	Not	390 *	Not	Fig. 1
		Applic	Attach. C	Applicable		Applic.	

[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).

* See Attachment D.

ATTACHMENT C
Gannon Units 5 & 6 Flyash Silo

Section V 3. & 5.

(A) Maximum Potential Emissions

Maximum potential emissions = maximum expected emissions generated within the silo.

Assume: Maximum conditions occur at combined maximum production rate, that is, both precipitator hoppers emptying simultaneously.

: Flyash dusting characteristics within Units 5 & 6 silo, similar to flyash dusting characteristics within Units 1-4 flyash silo.

: Settling characteristics within silo dependent on plan area of silo.

Known Data

Unit 5 flyash production rate (full load) = 5.08 tons/hr
Unit 6 flyash production rate (full load) = 7.97 tons/hr

maximum throughput rate = 5.08 + 7.97 = 13.05 tons/hr

	Units 1-4 flyash silo	Units 5 & 6 flyash silo
Silo diameter (ft)	30	25
Silo plan area (ft^2)	707	491
Throughput to silo (tons/hr)	14.4	13.05
Baghouse efficiency	99.8	99.9
Expected emissions (lbs/hr)	0.78	To be calculated
Potential emissions (lbs/hr)	390	To be calculated
Baghouse capacity (Acfm)	4696	11300

$$\frac{\text{1-4 silo throughput}}{\text{silo plan area}} = \frac{14.4 \text{ tons/hr}}{707 \text{ ft}^2} = \frac{0.02037 \text{ tons}}{\text{hr. ft}^2}$$

$$\frac{\text{5 \& 6 silo throughput}}{\text{silo plan area}} = \frac{13.05 \text{ tons/hr}}{491 \text{ ft}^2} = \frac{0.02658 \text{ tons}}{\text{hr. ft}^2}$$

∴ Ratio of dust loading expected =

0.02037 : 0.02658 = 1:1.3

1-4 silo, calculated potential emissions (within silo)

= 390 lbs/hr per 4696 Acfm

$$= [390 \frac{lbs}{hr}] [\frac{1 \ hr}{60 \ min}] [\frac{1 \ min}{4696 \ Acf}] = 0.00138 \frac{lbs}{Acf}$$

∴ 5 & 6 silo, estimated potential emissions (within silo)

$$= [0.00138 \frac{lbs}{Acf}] [11300 \frac{Acf}{min}] [60 \frac{min}{hr.}] [1.3] = 1216 \frac{lbs}{hr.}$$

(B) Maximum Emissions

Potential emissions = Maximum emissions ÷ (1 - baghouse efficiency)

Maximum emissions = Potential emissions (1 - baghouse efficiency)

= (1216) x (1-0.999)

= 1.22 lbs/hr.

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

A. Raw Materials and Chemicals Used in your Process, if applicable: Not Applicable

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

B. Process Rate, if applicable: (See Section V, Item 1) Not Applicable

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	
Particulate	1.22	Not Applic.	See Attach B	Not Applicable	1216	Not Applic.	Fig. 1

[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).

TAMPA ELECTRIC
A TECO ENERGY COMPANY

December 15, 1983

Mr. Roger P. Stewart
Hillsborough County Environmental
Protection Commission
1900 - 9th Avenue
Tampa, FL 33605

Mr. William K. Hennessey
Florida Department of
Environmental Regulation
7601 Highway 301 North
Tampa, FL 33610-9544

Re: Application to Operate an Air Pollution Source
Gannon Station Units 1-4 Flyash Silo
Tampa Electric Company

Gentlemen:

Enclosed please find an original and four (4) copies of an Application to Operate an Air Pollution Source, including an operation and maintenance plan for the particulate control systems.

Also, enclosed please find a Certificate of Good Standing and an authorization letter for the applicant. The application, together with a check for $140.00 to the Hillsborough County Board of County Commissioners and a check for $100.00 to the Florida Department of Environmental Regulation, are included with Mr. Stewart's copy.

If you should have any questions, please feel free to call.

Sincerely,

John B. Ramil, P.E.
Manager
Environmental Planning

JBR/pjm

Enclosures

D.E.R.

DEC 19 1983

SOUTHWEST DISTRICT
TAMPA

TAMPA ELECTRIC COMPANY
P.O. Box 111 Tampa, Florida 33601 (813) 228-4111

TAMPA ELECTRIC
A TECO ENERGY COMPANY

December 15, 1983

TO WHOM IT MAY CONCERN:

Please be advised that John B. Ramil, Manager of Environmental Planning, is the authorized representative of Tampa Electric Company concerning matters with which this permit application deals.

Very truly yours,

Heywood A. Turner
Senior Vice President
Production

HAT:tb

TAMPA ELECTRIC COMPANY
P.O. Box 111 Tampa, Florida 33601 (813) 228-4111

State of Florida

Department of State

I certify from the records of this office that TAMPA ELECTRIC COMPANY, is a corporation organized under the laws of the State of Florida, filed on April 18, 1949.

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, 1982, and its status is active.

Given under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capital, this the 6th day of December, 1982.

George Firestone
Secretary of State

CER 101

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

PAID DEC 21 1983 A029-80048

D.E.R. DEC 21 1983 SOUTHWEST DISTRICT TAMPA

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: Air Pollution [ ] New[1] [X] Existing[1]

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

COMPANY NAME: Tampa Electric Company 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) Gannon Station Units 1-4 Flyash Silo

SOURCE LOCATION: Street Port Sutton Road City Tampa

UTM: East 360,071 North 3,087,449

Latitude 27 ° 54 ' 22 "N Longitude 82 ° 25 ' 19 "W

APPLICANT NAME AND TITLE: Tampa Electric Company

APPLICANT ADDRESS: P. O. Box 111, Tampa, FL 33601 Attn: Environmental Planning

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Tampa Electric Company

I certify that the statements made in this application for an Operation 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: J. B. Ramil

John B. Ramil, Manager
Name and Title (Please Type)

Date: 12-16-83 Telephone No. (813)228-4838

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)

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 _____

John B. Ramil, P.E.
Name (Please Type)

Tampa Electric Company
Company Name (Please Type)

P. O. Box 111, Tampa, FL 33601
Mailing Address (Please Type)

Florida Registration No. 32663 Date: 12-16-83 Telephone No. (813)228-4838

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.

Gannon Station Units 1 thru 4 flyash silo.

See Attachment A.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction N/A Completion of Construction N/A

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.)

Bag type dust collector's (2) $48,500

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

See Attachment B.

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr 8760; if seasonal, describe: Not Applicable

F. If this is a new source or major modification, answer the following questions. (Yes or No) Not Applicable

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

   a. If yes, has "offset" been applied? -

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

   c. If yes, list non-attainment pollutants. -

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

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

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

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? -

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? Yes*

   a. If yes, for what pollutants? Particulate Matter

   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.

*Pursuant to Florida Administrative Code 17-2.650(2)(a)1.; "Any existing source that emits particulate matter and is located in a particulate non-attainment area or in the area of influence of such a non-attainment area except a source which has received a determination of Best Availabl Control Technology pursuant to 17-2.630 or received a permit in connecti with 17-2.500 or 17-2.510, shall limit the emission of particulate matte through the application of Reasonably Available Control Technology (RACT . . . ."

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

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

Not Applicable

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

B. Process Rate, if applicable: (See Section V, Item 1) Not Applicable

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/~~xx~~ hr.	T/yr	
Particulate	1.32*	Not	See	Not	660.0*	Not	Fig. 1
		Applic	Attach. C	Applicable		Applic.	

[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).

* See Attachment D.

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)
Bag type collector	Particulate	99.8	0.5 microns and above	Equipment Specs.
(Flexkleen				
#84WRWC - 112 II G)				

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Not Applicable			

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

Fuel Analysis: Not Applicable

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 Not Applicable Maximum Not Applicable

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

Flyash - Reinjected to boiler or trucked offsite to cement manufacturer.

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

Stack Height: - ft. Stack Diameter: - ft.

Gas Flow Rate: 4696 ACFM - DSCFM Gas Exit Temperature: - °F.

Water Vapor Content: - % Velocity: - FPS

SECTION IV: INCINERATOR INFORMATION

Not Applicable

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							
Uncontrolled (lbs/hr)							

Description of Waste _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

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

Manufacturer _____

Date Constructed _____ Model No. _____

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

Stack Height: _____ ft. Stack Diamter: _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity: _____ 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.

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

[ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

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

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)]
   Not applicable
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. See attached visible emissions test - See Attachment E.
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
   See Attachment D
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.)
   Not Applicable
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). See Attachment D
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. See Figure (1)
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).
   See Figure (2)
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.
   See Figure (3)

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 Not Applicable

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

[ ] Yes [ ] No

Contaminant	Rate or Concentration

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

[ ] Yes [ ] No

Contaminant	Rate or Concentration

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

Contaminant	Rate or Concentration

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:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

[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:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(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.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(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:

[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 Not Applicable

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).

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. _____ Year(s) of data from ____/____/____ to ____/____/____
month day year month day year

2. Surface data obtained from (location)_____

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

4. Stability wind rose (STAR) data obtained from (location)_____

C. Computer Models Used

1. _____ 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	_____	grams/sec
SO^2	_____	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.

ATTACHMENT A

Section II A.

The source is a flyash silo for Gannon Station Units 1 thru 4. Flyash will be pneumatically conveyed in a pipe from the individual unit precipitators to the silo for temporary storage. From the silo, the flyash will be trucked to an offsite consumer, and will be used as an ingredient in the manufacturing of cement.

A roof mounted, bag type dust collector will be utilized to control emissions.

ATTACHMENT B

Section II D.

The following is a list of permits associated with the Gannon Units 1 thru 4 flyash silo:

DER Permit #	Issue Date	Expiration Date	Comments
AC29-41943	August 7, 1981	March 15, 1987	Gannon 1 Const.
AC29-41942	August 7, 1981	March 15, 1986	Gannon 2 Const.
AC29-41941	August 7, 1981	Jan., 15, 1985	Gannon 3 Const.
AC29-41940	August 7, 1981	Feb., 15, 1984	Gannon 4 Const.

ATTACHMENT C

Section III C.

Allowable emission rate per Florida Administrative Code 17-2.650(2)(c)11b

:Visible emissions = 5%

F.J. GANNON STATION

Operation and Maintenance Plan Units 1 thru 4
Flyash Silo and Particulate Control/Collection System

INTRODUCTION:

F.J. Gannon Station is owned and operated by Tampa Electric Company. The plant is located on the eastern shore of Hillsborough Bay at Port Sutton and consists of three oil-fired and three coal-fired units; Units 1 thru 3 are presently oil-fired but will be reconverted to burn low sulfur coal in 1984, 1985 and 1986 for Units 3, 2 and 1 respectively. Units 4, 5 and 6 are coal-fired with Unit 4 being recently reconverted from oil to coal. All six boilers have electrostatic precipitators (ESP) to control particulate emissions.

The steel flyash silo for Units 1 thru 4 is an integral part of the particulate control/collection system. Flyash that is collected from Units 1 thru 4 ESP hoppers, is transferred dry to the 30 feet diameter, 45.5 feet high silo. The silo acts as a temporary storage for the flyash prior to being fed into tanker type trucks, thence transported to an offsite consumer.

Gannon's flyash is used as an ingredient in the manufacturing of cement.

PARTICULATE CONTROL EQUIPMENT DATA

Units 1 thru 4 flyash silo is equipped with a bag-type dust collector for the control of particulate matter. The dust collector is automatically actuated during conveying, aerating or unloading operations.

Important design information and data applicable to the particulate control system are listed below:

BAGHOUSE DATA

Manufacturer	Allen-Shermann-Hoff Corp.
Model name and number	Flexkleen 84 WRW C112IIG
Design flow rate (ACFM)	4696 (Total)
Efficiency (% by weight)	99.8
Pressure drop (inch H_2O)	2 (Clean), 5 (Dirty)
Gas Temperature (^oF)	300 (inlet), 350 (outlet)
Air to cloth ratio	2:1
Bag material	Nomex
Filter cleaning method	Pulse Jet

BAG FILTER CLEANING

Dust which accumulates on the bags is removed by a timed pulse of compressed air supplied at 18.4 scfm and 100 psig.

The filters are cleaned in sequence on a continuous basis whenever the baghouse is being operated, that is, whenever aeration is provided or dust is entering the silo.

Filters are changed whenever the pressure drop between inlet and outlet of the bag filter is approximately 5 inches of water.

SILO SYSTEM PERFORMANCE PARAMETERS

The following is a list of operating conditions that can be monitored from the flyash silo control panel:

1. Conveying blower "A" high differential temperature
2. Conveying blower "A" filter clogged
3. Fly ash system "A" high pressure
4. Silo filter bag "A" failure
5. Silo filter bag "B" failure
6. Silo high level
7. Conveying blower "B" high differential temperature
8. Conveying blower "B" filter clogged
9. Fly ash system "B" high pressure
10. Spare conveying blower high differential temperature
11. Spare conveying blower filter clogged
12. Airlock sequence failure
13. PC failure

Operating conditions that can be monitored from the fly ash silo control panel are as follows:

1. High differential temperature/low inlet pressure aeration blowers "A" and "B"
2. Aeration heater "A" overheat
3. Aeration heater "B" overheat

4. Vent filter "west" bag failure

5. Vent filter "east" bag failure

6. Silo full

7. Silo 4/5 full

8. Silo Aeration Temperature low

The pressure drop between the inlet and outlet of the baghouse is measured with a manometer that is connected to the baghouse.

MAINTENANCE AND INSPECTION SCHEDULES

Routine on-line preventive maintenance, daily checks for leakage, daily checks on baghouse pressure drops and monitoring of the control panel for abnormal operating conditions, ensure proper operations of the silo system. Should these procedures indicate repairs are necessary, maintenance job requests are initiated. All repair information is stored for future reference.

FLYASH CHARACTERISTICS

Ash Analysis	% By Weight
Ferric Oxide	9.74
Lime	7.04
Magnesia	1.93
Sodium Oxide	1.37
Potassium Oxide	0.90
Silica	53.19
Alumina	17.85
Titania	0.75
Phos. Pentoxide	0.11
Sulfur Trioxide	6.69

The temperature range of the ash will be approximately 290°F to 310°F in the precipitator hoppers.

ATTACHMENT D

Section V 3. & 5.

(A.) Maximum Expected Emissions:

Maximum expected emissions = maximum baghouse emissions = 0.03 gr/dscf (Design)
Capacity of baghouses (2) = 4696 Acfm (Total)

$$dscfm = (Acfm)(FDA)\left(\frac{528}{T_A}\right)\left(\frac{PA}{29.92}\right)$$

where: Acfm = Actual cubic feet per minute
dscfm = dry standard cubic feet per minute
FDA = Fraction dry air (max = 1.0)
T_A = Absolute gas temp. (^oR)
P_A = Absolute pressure (in. Hg.)

$$dscfm = (Acfm)(1.0)\left(\frac{528}{810^oR}\right)\left(\frac{50.3 \text{ in. Hg.}}{29.92}\right) = (1.10)(Acfm)$$

$$\therefore 4696 \text{ Acfm} = (4696)\left(1.10 \frac{dscfm}{Acfm}\right) = 5146 \text{ dscfm}$$

Thus, maximum expected emissions:

$$= \left[5146 \frac{dscf}{min.}\right]\left[0.03 \frac{gr}{dscf}\right]\left[0.002285 \frac{0z}{gr}\right]\left[\frac{1}{16} \frac{lb}{0z}\right]\left[60 \frac{min}{hr.}\right]$$

$$= 1.32 \frac{lbs}{hr}$$

(B) Potential Emissions

= maximum emissions ÷ (1-baghouse efficiency)
= 1.32 ÷ (1-.998)
= 660 $\frac{lbs}{hr}$

ATTACHMENT E

BEST AVAILABLE COPY

TECO

RECORD OF VISIBLE EMISSIONS

Plant: F.J. Gannon Station
Date: December 7 1983
Wind Direction and Speed: NNE 0-5 mph

Stack: Silo No 4
Time: 1430
Observer: Martin Duff

min. \ sec.	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
9	0	0	0	0
10	0	0	0	0
11	0	0	0	0
12	0	0	0	0
13	0	0	0	0
14	0	0	0	0
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
18	0	0	0	0
19	0	0	0	0
20	0	0	0	0
21	0	0	0	0
22	0	0	0	0
23	0	0	0	0
24	0	0	0	0
25	0	0	0	0
26	0	0	0	0
27	0	0	0	0
28	0	0	0	0
29	0	0	0	0

min. \ sec.	0	15	30	45
30	0	0	0	0
31	0	0	0	0
32	0	0	0	0
33	0	0	0	0
34	0	0	0	0
35	0	0	0	0
36	0	0	0	0
37	0	0	0	0
38	0	0	0	0
39	0	0	0	0
40	0	0	0	0
41	0	0	0	0
42	0	0	0	0
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45	0	0	0	0
46	0	0	0	0
47	0	0	0	0
48	0	0	0	0
49	0	0	0	0
50	0	0	0	0
51	0	0	0	0
52	0	0	0	0
53	0	0	0	0
54	0	0	0	0
55	0	0	0	0
56	0	0	0	0
57	0	0	0	0
58	0	0	0	0
59	0	0	0	0

Sum of # Recorded: 0

Total # of Readings: 240

Opacity = Sum of # Recorded / Total # of Readings = 0

Remarks:

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

THIS IS TO CERTIFY THAT

Martin Duff, 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 March 15, 1984

Judie Sears
Certification Officer

Martin Duff
Bearer's Signature

DER Form PERM 5-9 (Jun 79)

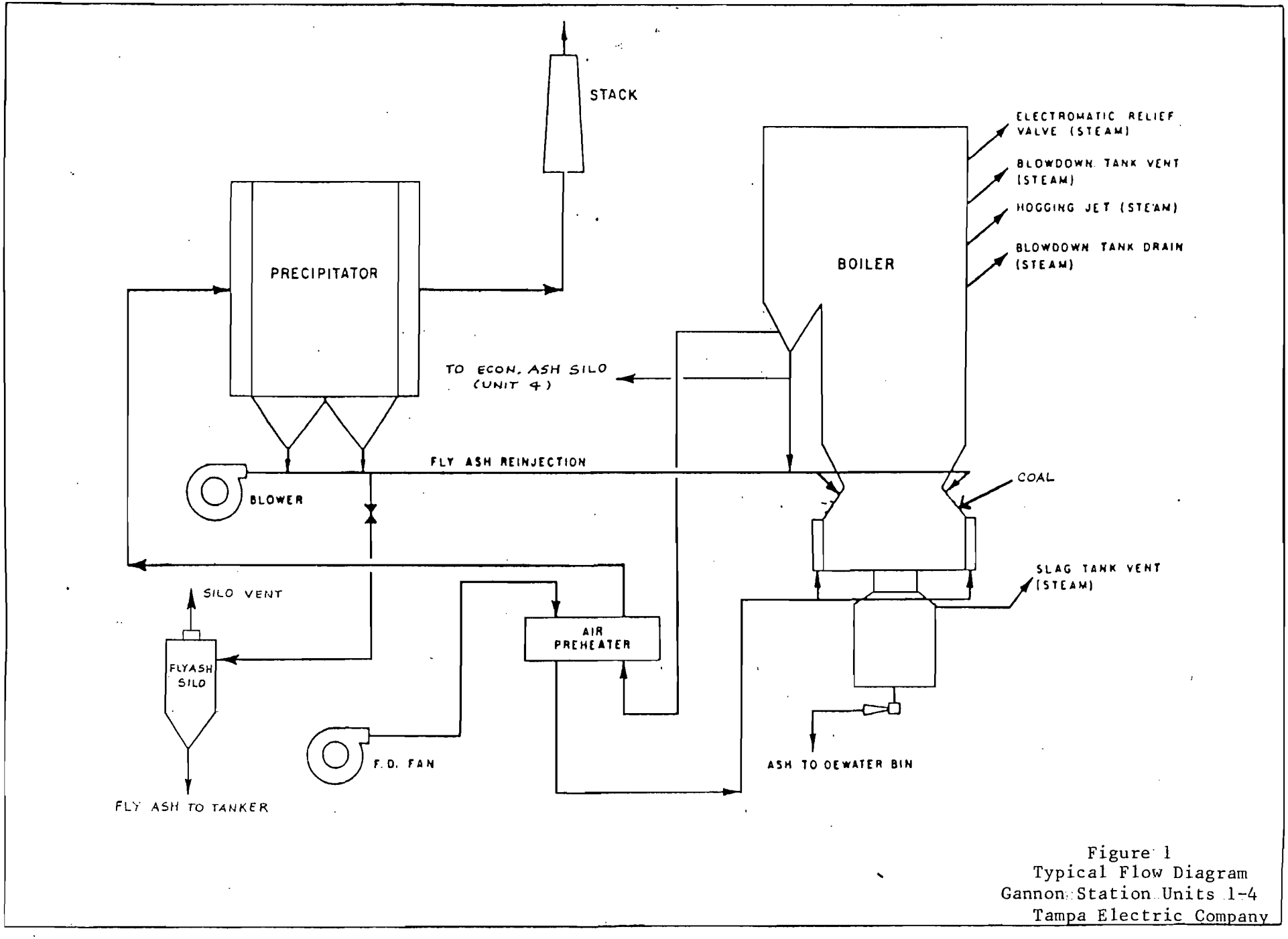

Figure 1
Typical Flow Diagram
Gannon Station Units 1-4
Tampa Electric Company

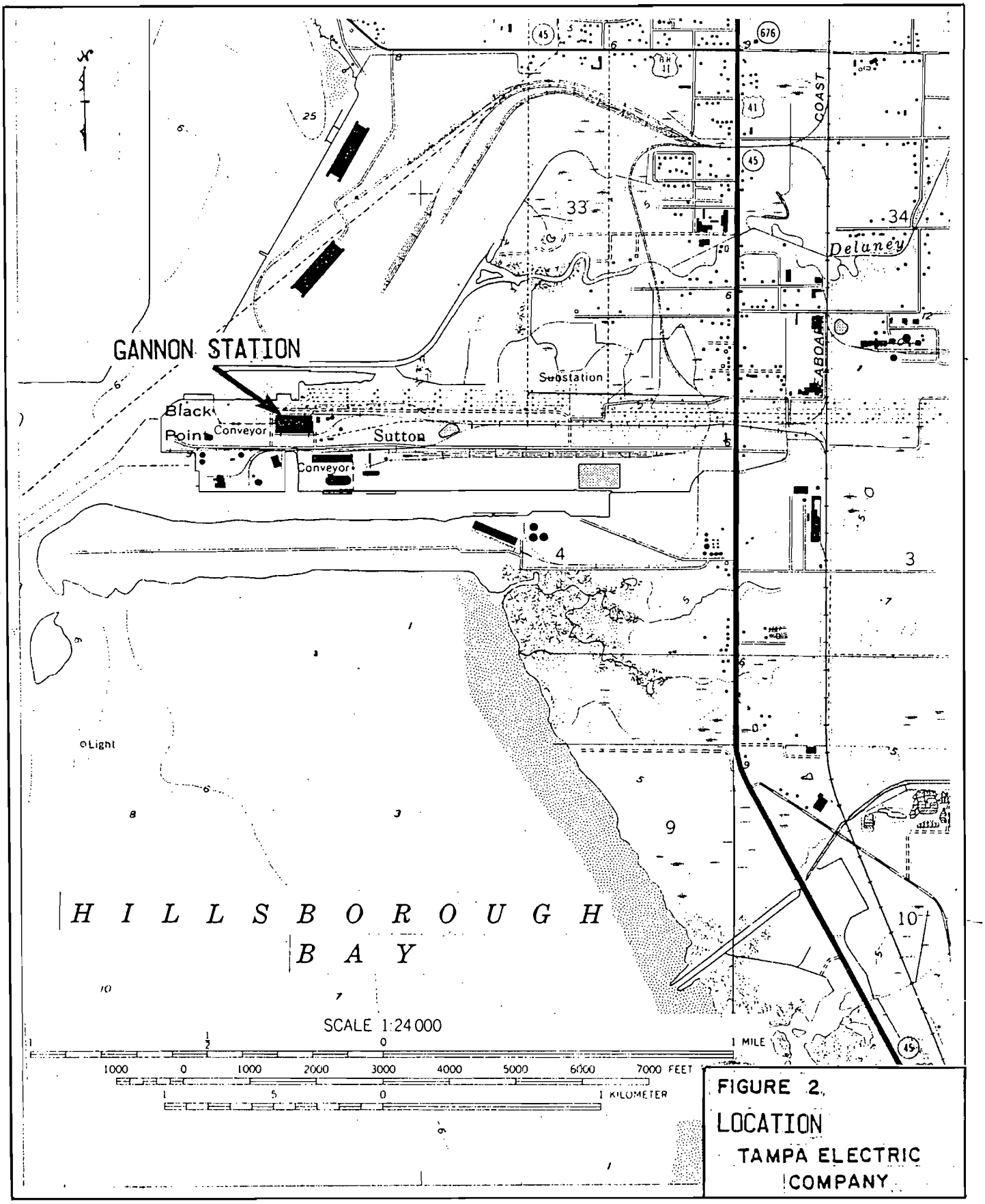

FIGURE 2.
LOCATION
TAMPA ELECTRIC COMPANY

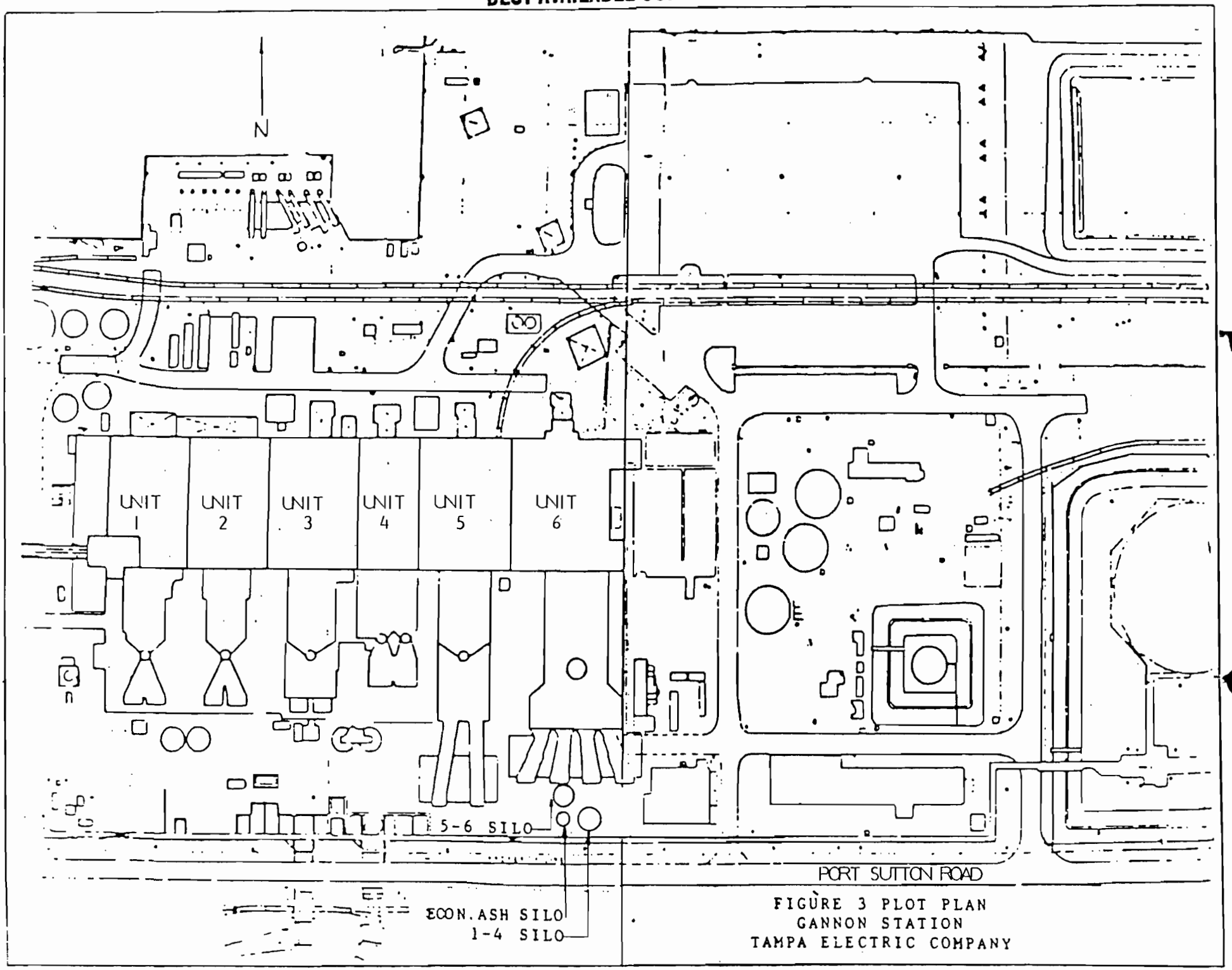

FIGURE 3 PLOT PLAN
GANNON STATION
TAMPA ELECTRIC COMPANY