UNIT 4

PA 79-12 D 6/19/95 ✓ MODIFIC.

PA 79-12 C & D 9/15/95 ✓ MODIFIC.

PA 79-12 C 3/31/94 ✓ MODIF.

PSD-FL-040 7/11/88 ✓ AMEND.

ASP COAL SAMPLING 3/24/86 ✓

PSD-FL-040 4/9/15/81 ✓ eff. ~~ISSUED~~

PA 79-12 CONDITIONS OF CERTIFICATION eff. (REV. 6-2-81) ✓

signed 8-14-81

LIMESTONE & FLYASH EXEMPT FROM PARTICULATE TESTING ONLY VE REQUIRED

LIMESTONE STORED IN BLDG.

LIMESTONE CONVEYORS COVERED OR ENCLOSED VENTING TO A CONTROL DEVICE NOT REQUIRED

JR

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

IN RE: TAMPA ELECTRIC COMPANY BIG BEND STATION UNIT 4 MODIFICATION OF CONDITIONS OF CERTIFICATION PA 79-12 HILLSBOROUGH COUNTY, FLORIDA	)	DEP CASE NO. PA 79-12D OGC CASE NO. 94-0914

FINAL ORDER MODIFYING CONDITIONS OF CERTIFICATION

On August 17, 1981, the Governor and Cabinet, sitting as the Siting Board, issued a final order approving certification for Tampa Electric Company's (TECO's) Big Bend Station Unit 4. That certification order approved the construction and operation of a 486 MW (gross) coal-fired facility and associated facilities located in Hillsborough County, Florida.

On January 30, 1995 and March 6, 1995, TECO filed a request to modify the conditions of certification pursuant to Section 403.516(1)(b), Florida Statutes. TECO requested that the conditions be modified to approve changes to the Conditions of Certification for the continuous emission requirements necessary to implement in plant modification of flue gas treatment systems and operation. These proposed changes allow treatment of flue gas from Unit 3 in the Unit 4 FGD scrubbers.

Copies of TECO's proposed modification were distributed to all parties to the certification proceeding and made available for public review. On April 7, 1995, Notice of Proposed Modification of power plant certification was published in the Florida Administrative Weekly. As of April 3, 1995, all parties to the original proceeding had received copies of the

intent to modify. The notice specified that a hearing would be held if a party to the original certification hearing objects within 45 days from receipt of the proposed notice of modification or if a person whose substantial interests will be affected by the proposed modification objects in writing within 30 days after issuance of the public notice. Written objections to the proposed modifications were not received by the Department. Accordingly, in the absence of any timely objection,

IT IS ORDERED:

The proposed changes to TECO Big Bend Station as described in the January 30, 1995, and March 6, 1995, requests for modification are APPROVED. Pursuant to Section 403.516(1)(b), F.S., the conditions of certification for the TECO Big Bend Station are MODIFIED as follows:

Condition I.B. Air Monitoring Program

1. The permittee shall install and operate continuous~~ly~~ monitoring devices for the Unit 4 boiler exhausts for sulfur dioxide, nitrogen dioxide, oxygen and/or carbon dioxide, and opacity. The monitoring devices shall meet the applicable requirements of Section ~~17-2.08, FAC~~ 62-214, F.A.C., 40 CFR 60.47a., and 40 CFR 75. The opacity monitor shall be placed in the duct work between the electrostatic precipitator and the FGD scrubber.

a. When Units 3 and 4 are operating in the integrated mode (Unit 3 flue gases routed through the Unit 4 FGD system), the continuous monitoring system will measure sulfur dioxide emissions at the inlet and outlet of the Unit 4 FGD system and from the Unit 3 stack, while emissions of nitrogen oxides, oxygen and/or carbon dioxide, and opacity shall be measured in the Unit 4 duct prior to the FGD system.

b. When Units 3 and 4 are not operating in the integrated mode, the continuous monitoring system will measure only Unit 4's inlet duct and stack for SO_2 emissions. The emissions of nitrogen oxides, oxygen and/or carbon dioxide, and opacity shall be measured in the Unit 4 duct prior to the FGD system.

Any party to this Notice has the right to seek judicial review of the Order pursuant to Section 120.68, Florida Statutes, by the filing of Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the clerk of the Department of Environmental Protection in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal

accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date that the Final Order is filed with the Department of Environmental Protection.

DONE AND ENTERED this 19th day of June, 1995 in Tallahassee, Florida.

STATE OF FLORIDA, DEPARTMENT OF ENVIRONMENTAL PROTECTION

for Kenneth J. Plante
VIRGINIA B. WETHERELL
SECRETARY
3900 Commonwealth Boulevard
Tallahassee, FL 32399-3000

FILING AND ACKNOWLEDGEMENT FILED, on this date, pursuant to S120.52 Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Deputy Clerk — Date: 6/19/95

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing was sent by U.S. Mail to the following this 19th day of June, 1995.

Lawrence N. Curtin, Esq.
Holland & Knight
P.O. Drawer 810
Tallahassee, FL 32302

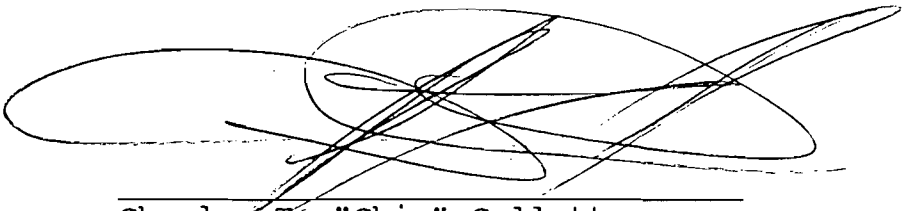
Karen Brodeen, Esq.
Department of Community Affairs
2740 Centerview Drive
Tallahassee, FL 32399-2100

Martin D. Hernandez, Esq.
Southwest Florida Water
Management District
2379 Broad Street
Brooksville, FL 34609-6899

Greg Nelson, P.E.
Tampa, Electric Company
P.O. Box 111
Tampa, FL 33601-0111

Michael Palecki
Division of Legal Services
Public Service Commission
101 East Gaines Street
Fletcher Building,Room 212
Tallahassee, FL 32399-0850

Sara M. Fotopulos, Esq.
Environmental Protection
Comm. of Hillsborough Co.
1900 Ninth Avenue
Tampa, FL 33605



Charles T. "Chip" Collette
Department of Environmental
Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400
(904) 488-9314

Attorney for the Department

file

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In Re: Tampa Electric Company Big Bend Station Unit 4 Modification of Conditions of Certification PA 79-12 Hillsborough County, Florida	))))))	DER Case No. PA 79-12C&D OGC Case No. 94-0914

FINAL ORDER MODIFYING CONDITIONS OF CERTIFICATION 9/18/95

On August 17, 1981, the Governor and Cabinet, sitting as the Siting Board, issued a final order approving certification for Tampa Electric Company's (TECO's) Big Bend Station Unit 4. That certification order approved the construction and operation of a 486 MW (gross) coal-fired facility and associated facilities located in Hillsborough County, Florida.

On January 13, 1995, TECO filed a request to amend the conditions of certification pursuant to Section 403.516(1)(b). Florida Statutes. TECO requested that the condition be modified to approve several changes in the project design and operation of the coal yard.

Copies of TECO's proposed modification were distributed to all parties to the certification proceeding and made available for public review in June, 1995. On June 30, 1995, a Notice of Intent to Issue Proposed Modification of Power Plant Certification was published in the Florida Administrative Weekly. As of June 27, 1995, all parties to the original proceeding had received copies of the notice. The notice specified that a hearing would be held if a party to the original certification hearing objected within 45 days from receipt of the proposed notice of modification or if a person whose substantial interests would be affected by the proposed modification objected in

writing within 30 days after issuance of the public notice. One objection to the proposed modifications as noticed was received by the Department, but it was denied as untimely. Accordingly, in the absence of any timely objection,

IT IS ORDERED:

The proposed changes to TECO Big Bend Station as described in the January 13, 1995, requests for modification are APPROVED. Pursuant to Section 403.516(1)(b), F.S., the conditions of certification for the TECO Big Bend Station are MODIFIED as follows:

Condition I.A.

1. Based on a maximum heat input of 4,330 million BTU per hour, stack emissions from Big Bend Unit 4 shall not exceed the following when burning coal or a coal/petroleum coke blend:

a. - d. no change.

2. no change

3.

a. ~~The permittee shall not cause to be discharged into the atmosphere~~ Pursuant to Chapter 1-3.62 Rules of the Environmental Protection Commission of Hillsborough County, visible emissions shall not exceed 20% opacity for any unconfined emission unit in the fuel yard. Unconfined emissions as defined by Rule 62-296.200, F.A.C., shall include the static fuel piles, etc. ~~coal fuel processing or conveying equipment, coal fuel storage system, coal fuel transfer and loading system processing coal, visible emissions which exceed 20 percent opacity.~~

Pursuant to Rule 62.296.711(2), F.A.C., visible emissions shall not exceed 5 percent opacity for the remaining emission units in the fuel yard. Initial and subsequent visible emissions compliance tests shall be demonstrated using EPA Reference Method 9, 40 CFR Part 60, Appendix A, Visual

Determination of Fugitive Emissions from Material Sources (July 1, 1993 version). All testing shall be done within 90 days of completing reconfiguration of the fuel yard, and prior notification of testing shall be submitted in writing at least 15 days beforehand to the EPC of Hillsborough County. Particulate emissions shall be controlled by use of control devices.

b. (No change)

c. The ~~coal~~ fuel pile operations are subject to Rule 62~~17~~-296.310(3), F.A.C., Unconfined Emissions of Particulate Matter. Reasonable precautions to minimize unconfined particulate matter shall be in accordance with Rule 62~~17~~-296.310(3)(c), F.A.C.; and, may include, but shall not be limited to, the coating of roads and construction sites used by contractors and regrassing or watering areas of disturbed ~~coal~~ fuel.

d. From each ~~coal~~ fuel transloading of source/emission point (i.e., off-loading and loading of ~~coal~~ fuel), the maximum annual transloading transfer of ~~coal~~ fuel shall not exceed 4,000 tons, 24-hour rolling average.

e. From each ~~coal~~ fuel transloading source/emissions point (i.e., off-loading and loading of ~~coal~~ fuel), the maximum annual transloading transfer of ~~coal~~ fuel shall not exceed 1,428,030 tons.

f. The number of railcars and trucks and the quantity of ~~coal~~ fuel loaded by each ~~coal~~ fuel transloading source/emission point (i.e., off-loading and loading of ~~coal~~ fuel) shall be recorded, maintained, and kept on file for a minimum of two years. The annual quantity of ~~coal~~ fuel loaded by each ~~coal~~ fuel transloading source/emission shall be submitted in Annual Operation Report (AOR) to the Environmental Protection Commission of Hillsborough County by March 1 of each year for the previous year's operation.

4. - 11. no change

12. Fuels fired shall consist of coal or a coal/petroleum coke blend containing a maximum of 20.0 percent petroleum coke by weight. The sulfur content of the petroleum coke shall not exceed 6.0 percent by weight (dry basis). Vanadium content of the mineral ash from the petroleum coke fired shall not exceed 35.0 percent by weight (ignited basis).

13. Gravimetric instrument data verifying that the 20.0 percent maximum petroleum coke by weight basis has not been exceeded shall be maintained and submitted to the Department's Southwest District Office and the Environmental Protection Commission of Hillsborough County (EPCHC) with each annual operating report.

14. Pursuant to Rule 62-212.200(2)(d), F.A.C., the actual emissions of the No. 4 Unit shall equal the representative actual emissions as defined in 40 CFR 52.21(b)(33). The Permittee shall maintain and submit to the Department and EPCHC on an annual basis for a period of five years from the date the unit begins firing petroleum coke, data demonstrating that the operational change did not result in an emissions increase.

Any party to this Notice has the right to seek judicial review of the Order Pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the clerk of the Department of Environmental Protection in the Office of General, 3900 Commonwealth Blvd., Tallahassee, Florida 32399-3000; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date that the Final Order is filed with the Department of Environmental Protection.

DONE AND ENTERED this 15th day of September, 1995 in Tallahassee, Florida.

STATE OF FLORIDA, DEPARTMENT OF ENVIRONMENTAL PROTECTION

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to S120.52 Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Rebecca Bona 9-18-95
Clerk **Date**

VIRGINIA B. WETHERELL
SECRETARY
3900 Commonwealth Boulevard
Tallahassee, FL 32399-3000

CERTIFICATE OF SERVICE

I DO HEREBY certify that a true and correct copy of the foregoing has been sent by U.S. Mail to the following listed persons:

Lawrence N. Curtin
Attorney at Law
Holland & Knight
P.O. Drawer 810
Tallahassee, FL 32302

Karen Brodeen
Assistant General Counsel
Dept. of Community Affairs
2740 Centerview Drive
Tallahassee, FL 32399-2100

Michael Palecki, Chief
Bureau of Electric & Gas
Florida Public Service Commission
101 East Gaines Street
Tallahassee, FL 32399-0850

Martin D. Hernandez
Richard Tschantz
Assistant General Counsels
Southwest Florida Water Management District
2370 Broad Street
Brooksville, FL 34609-6899

Sara M. Fotopulos
Chief Counsel
Environmental Protection Commission of Hillsborough County
1900 Ninth Avenue
Tampa, FL 33605

Greg Nelson, P.E.
Tampa Electric Company
P.O. Box 111
Tampa, FL 33601-0111

this 18th day of September, 1995.

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

CHARLES T. "CHIP" COLLETTE
Assistant General Counsel
3900 Commonwealth Blvd.
Tallahassee FL 32399-3000

CC: EPC

-9K

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DISTRICT ROUTING SLIP

To: Jerry Kissel DATE: 5/9/94

CC To:

	PENSACOLA	**NORTHWEST DISTRICT**
	Panama City	Northwest District Branch Office
	Tallahassee	Northwest District Branch Office
	Sopchoppy	Northwest District Satellite Office
✓	**TAMPA**	**SOUTHWEST DISTRICT**
	Punta Gorda	Southwest District Branch Office
	Bartow	Southwest District Satellite Office
	ORLANDO	**CENTRAL DISTRICT**
	Melbourne	Central District Satellite Office
	JACKSONVILLE	**NORTHEAST DISTRICT**
	Gainesville	Northeast District Branch Office
	FORT MYERS	**SOUTH DISTRICT**
	Marathon	South District Branch Office
	WEST PALM BEACH	**SOUTHEAST DISTRICT**
	Port St. Lucie	Southeast District Branch Office

☐ Reply Optional Date Due _____ ☐ Reply Required Date Due: _____ ☐ Info Only

Comments:

Please all Depts' 11/12/92 letter attached

RECEIVED
MAY 11 1994
Department of Environmental Protection
BY SOUTHWEST DISTRICT

From: Clair Dancy 279-1344

08-18-93

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In Re: Tampa Electric Company Big Bend Station Unit 4 Modification of Conditions of Certification PA 79-12 Hillsborough County, Florida	)	DER CASE NO. PA 79-12C OGC CASE NO. 94-0914

FINAL ORDER MODIFYING CONDITIONS OF CERTIFICATION

On August 17, 1981, the Governor and Cabinet, sitting as the Siting Board, issued a final order approving certification for Tampa Electric Company's (TECO's) Big Bend Station Unit 4. That certification order approved the construction and operation of a 486 MW (gross) coal-fired facility and associated facilities located in Hillsborough County, Florida.

On September 21, 1992, TECO filed a request to modify the conditions of certification pursuant to Section 403.516(1)(b), Florida Statutes. TECO requested that the conditions be modified to approve several recently identified changes to the project design and operation. These proposed changes include changes in the coal yard facility and alterations to the plant layout.

Copies of TECO's proposed modification were distributed to all parties to the certification proceeding and made available for public review in February, 1993. On March 5, 1993, Notice of Proposed Modification of power plant certification was published in the Florida Administrative Weekly. As of February 22, 1993, all parties to the original proceeding had received copies of the intent to modify. The notice specified that a

hearing would be held if a party to the original certification hearing objects within 45 days from receipt of the proposed notice of modification or if a person whose substantial interests will be affected by the proposed modification objects in writing within 30 days after issuance of the public notice. No written objection to the proposed modifications has been received by the Department. Accordingly, in the absence of any timely objection,

IT IS ORDERED:

The proposed changes to TECO Big Bend Station as described in the September 21, 1992, and June 30, 1993, requests for modification are APPROVED. Pursuant to Section 403.516(1)(b), F.S., the conditions of certification for the TECO Big Bend Station are MODIFIED as follows:

Condition I.A.3.

a. Pursuant to Rule 17-296.310(2), Florida Administrative Code (F.A.C.), ~~the permittee shall not cause to be discharged into the atmosphere~~ no owner or operator shall cause, permit, or allow visible emissions equal to or greater than 20% opacity of fugitive or unconfined particulate matter from any coal processing or conveying equipment, coal storage system, ~~or~~ coal transfer and loading system, or transloading source/emissions point (i.e., off-loading or loading of coal and coal piles) associated with the processing of coal; ~~visible emissions which exceed 20 percent opacity~~. Initial and subsequent visible emissions compliance tests shall be demonstrated using EPA Reference Method 22, 40 CFR Part 60,

Appendix A, Visual Determination of Fugitive Emissions from Material Sources (July 1, 1993 version).

b. The permittee shall submit ----

c. The coal pile operations are subject to Rule 17-296.310(3), F.A.C., Unconfined Emissions of Particulate Matter. Reasonable precautions to minimize unconfined particulate matter shall be in accordance with Rule 17-296.310(3)(c), F.A.C.; and, may include, but shall not be limited to, the coating of roads and construction sites used by contractors and regrassing or watering areas of disturbed coal.

d. From each coal transloading source/emissions point (i.e., off-loading and loading of coal), the maximum hourly transloading transfer of coal shall not exceed 4,000 tons, 24-hour rolling average.

e. From each coal transloading source/emissions point, (i.e., off-loading and loading of coal), the maximum annual transloading transfer of coal shall not exceed 1,428,030 tons.

f. The number of railcars and trucks and the quantity of coal loaded by each coal transloading source/emissions point (i.e., off-loading and loading of coal) shall be recorded, maintained, and kept on file for a minimum of two years. The annual quantity of coal loaded by each coal transloading source/emissions point shall be submitted in an annual operation report (AOR) to the Environmental Protection Commission of Hillsborough County by March 1 of each year for

the previous year's operation.

Any party to this Notice has the right to seek judicial review of the Order pursuant to Section 120.68, Florida Statutes, by the filing of Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the clerk of the Department of Environmental Protection in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date that the Final Order is filed with the Department of Environmental Protection.

DONE AND ENTERED this 31st day of March, 1994 in Tallahassee, Florida.

STATE OF FLORIDA, DEPARTMENT OF ENVIRONMENTAL PROTECTION

Virginia B. Wetherell

VIRGINIA B. WETHERELL
SECRETARY
3900 Commonwealth Boulevard
Tallahassee, FL 32399-3000

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to §120.52 Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Clerk — 4-6-94 Date

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of the foregoing was sent by U.S. Mail to the following this 6th day of April, 1994.

Lawrence N. Curtin, Esq.
Holland & Knight
P.O. Drawer 810
Tallahassee, FL 32302

Karen Brodeen, Esq.
Department of Community Affairs
2740 Centerview Drive
Tallahassee, FL 32399-2100

Martin D. Hernandez, Esq.
Southwest Florida Water
Management District
2379 Broad Street
Brooksville, FL 34609-6899

Greg Nelson, P.E.
Tampa, Electric Company
P.O. Box 111
Tampa, FL 33601-0111

Michael Palecki
Division of Legal Services
Public Service Commission
101 East Gaines Street
Fletcher Building,Room 212
Tallahassee, FL 32399-0850

Sara M. Fotopulos, Esq.
Environmental Protection
Comm. of Hillsborough Co.
1900 Ninth Avenue
Tampa, FL 33605

R T Donelan

Richard Donelan, Esq.
Department of Environmental
Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400
(904) 488-9314

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E
ATLANTA, GEORGIA 30365

NOV 12 1992

4APT-AEB

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

RE: TECO Big Bend Proposed Modification

Dear Mr. Fancy:

As requested by your letter dated September 24, 1992, we have reviewed the proposed modification to the above referenced facility consisting of changes to the coal yard. It appears from the information submitted that the emissions increase resulting from the modification will be approximately 14 tons per year of particulate matter. If this is the case, then the increase would be a minor modification to an existing major source and not subject to Prevention of Significant Deterioration (PSD) requirements. Even though the proposed change would require a modification of the Conditions of Certification under Florida's Power Plant Siting Act (PPSA), there would be no need to modify the existing PSD permit for the facility (PSD-FL-040).

Thank you for the opportunity to review this package. If you have any questions or comments, please contact Mr. Gregg Worley of my staff at (404) 347-5014.

Sincerely yours,

for Gregg M. Worley

Brian L. Beals, Chief
Source Evaluation Unit
Air Enforcement Branch

Jim Britt

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV
345 COURTLAND STREET
ATLANTA, GEORGIA 30365

JUL 11 1988

4APT/APB-aes

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Jerry L. Williams, Environmental Director
Tampa Electric Company
P.O. Box 111
Tampa, Florida 33601-0111

Re: Tampa Electric Company, Big Bend Unit No. 4 (PSD-FL-040)

Dear Mr. Williams:

This is in response to your May 27, 1988, letter regarding the generating capacity restrictions contained in your federal PSD permit PSD-FL-040. We have reviewed your request to remove these restrictions and find that the changes will not in any way reduce the enforceability of the permit or affect the level of emissions generated. We hereby modify your federal PSD permit PSD-FL-040 as follows:

Part I: Specific Conditions

1. The proposed steam generating station shall be constructed and operated in accordance with the capabilities and specifications of the application, and the heat input to the No. 4 boiler shall not exceed 4330 mmBtu/hr.

Please be advised that the modification to your PSD permit herein described shall become a binding part of permit PSD-FL-040. This permit modification shall become effective upon receipt of this letter.

If you have any questions or comments regarding this permit modification, please contact me at (404) 347-4727 or Mr. Bruce P. Miller of my staff at (404) 347-2864.

Sincerely yours,

Greer C. Tidwell
Regional Administrator

cc: Steve Smallwood, Chief
Bureau of Air Quality
Florida Department of Environmental Regulation

Tampa Office

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

TCO
Big Bend Unit No 4

March 24, 1986

D. E. R.
MAR 26 1986
SOUTH WEST DISTRICT
TAMPA

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Jerry L. Williams
Environmental Director
Tampa Electric Company
P. O. Box 111
Tampa, Florida 33601-0111

Dear Mr. Williams:

Re: Big Bend Unit 4 - Alternate Raw-Coal Sampling Procedure-Consolidated Coal Company

The department, in consultation with EPA (see attachment), has reviewed your December 23, 1985, request for approval of an alternate raw-coal sampling procedure to be used by Consolidated Coal Company. We agree that the proposed procedure is very similar to the one already approved for use by the Ziegler and Peabody coal companies. Therefore, by this letter, the department approves your request provided the following conditions are met:

1. The supplier shall stop and sample the raw coal conveyor belt at least once per day when coal is being washed for Tampa Electric Company.

2. The daily stop time shall be randomly selected.

3. The sample shall consist of a block section of raw coal of 15 inches in length by the entire width of the belt, taken at the location shown in Figure 1.

4. The sample processing and analysis shall be performed as described in Method 19, 40 CFR 60, Appendix A.

5. Calculation of weighted averages shall be made for all mines.

Pursuant to Section 120.57, Florida Statutes, you have a right to petition for an administrative determination on this approval and its conditions. The petition must conform to the requirements of Chapters 17-103 and 28-5, FAC, and must be filed (received) in the department's Office of General Counsel within (14) days of receipt of this letter. Failure to file a petition within fourteen (14) days constitutes a waiver of any right you have to an administrative determination pursuant to Section 120.57, Florida Statutes.

Sincerely,

Steve Smallwood, P.E.
Chief
Bureau of Air Quality
Management

cc: Bill Blommel, DER-BAQM (File ASP-85-B01)
Buck Oven, DER-PPS
Bill Thomas, DER-Tampa
Jerry Campbell, HCEPC
Brian Beals, EPA

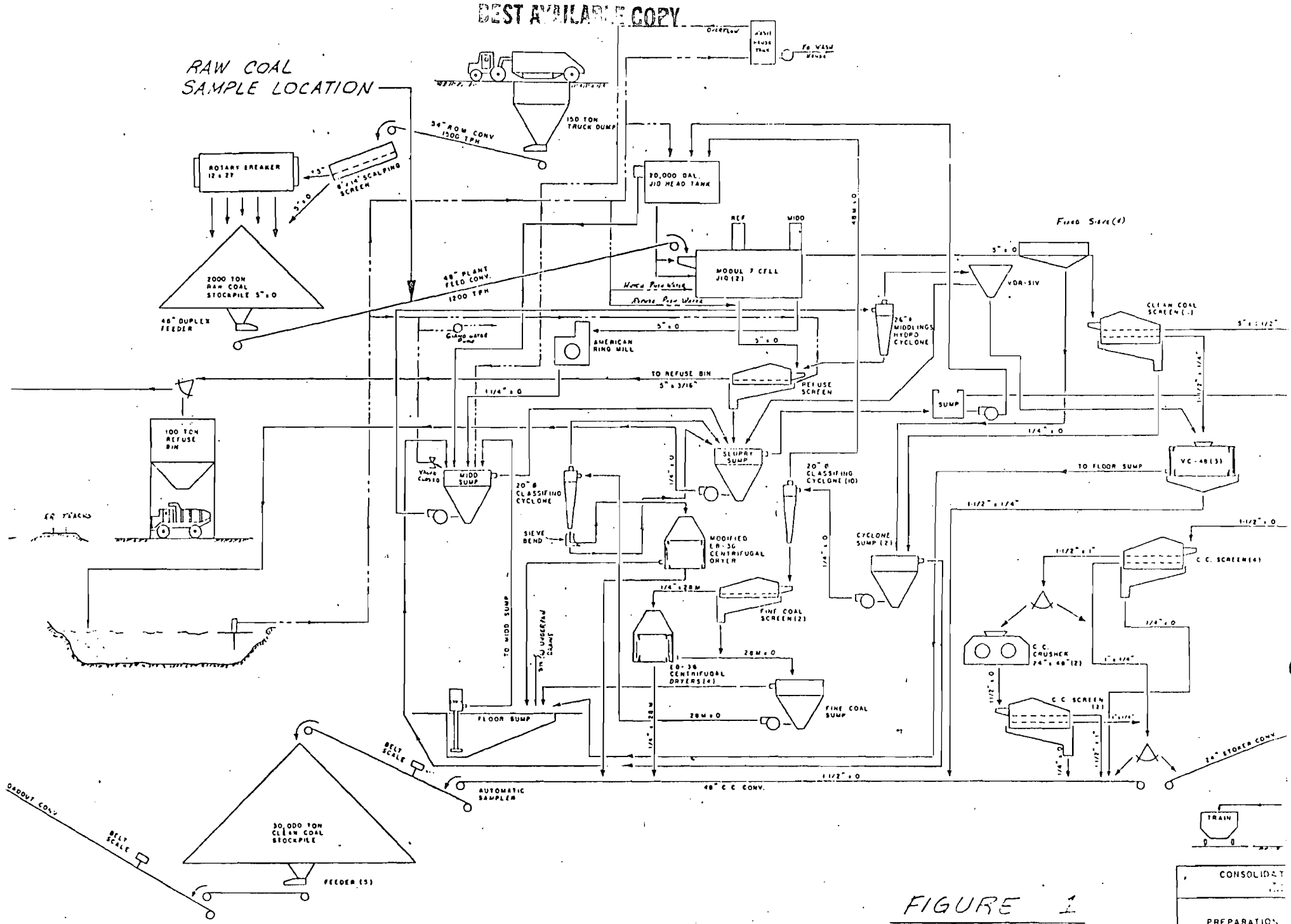


FIGURE 1

CONSOLIDAT

PREPARATION

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30365

MAR 11 1986

DER

MAR 17 1986

BAQM

REF: APT-AC

Mr. Steve Smallwood, Chief
Bureau of Air Quality Management
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

Dear Mr. Smallwood:

As requested by Larry George of your staff, we have reviewed the request from Tampa Electric Company (TEC) for an alternate raw coal sampling procedure for their Big Bend Station Unit 4. The procedures proposed by TEC and their coal supplier, Consolidated Coal Company (Consol) is acceptable with the following understanding. In our concurrence letter to you dated January 18, 1985 (copy enclosed), regarding sampling procedures for the other coal suppliers for TEC Big Bend Unit 4, EPA listed five conditions that should be included in the approval. We recommend those same conditions for this coal supplier, except that a 15-inch section of coal from the belt will suffice.

TEC and any other company proposing similar procedures in the future should be instructed to use at least thirty (30) samples in their statistical population used to justify requests. In their effort to compare 5-foot cuts to 15-inch cuts for coal samples, Consol used twenty (20) samples. This is not adequate to confidently compare the two methods. However, because of the close results, it can be accepted in this case.

If you have any questions, please contact Jim Manning of my staff at 404/347-7654.

Sincerely yours,

James T. Wilburn, Chief
Air Compliance Branch
Air, Pesticides, & Toxics
Management Division

Enclosure

cc: Larry George

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

DISTRICT ROUTING SLIP

TO: Bill Thomas DATE: 3/24/86

C.C. TO:

	PENSACOLA	NORTHWEST DISTRICT	
	PANAMA CITY	Northwest District Branch Office	
	TALLAHASSEE	Northwest District Branch Office	
	TAMPA	SOUTHWEST DISTRICT	
	ORLANDO	ST. JOHNS RIVER DISTRICT	
	JACKSONVILLE	NORTHEAST DISTRICT	
	GAINESVILLE	Northeast District Branch Office	
	FORT MYERS	SOUTH FLORIDA DISTRICT	
	PUNTA GORDA	South Florida District Branch Office	
	MARATHON	South Florida District Branch Office	
	WEST PALM BEACH	SOUTHEAST FLORIDA DISTRICT	
	PORT ST. LUCIE	Southeast Florida Subdistrict	

Reply Optional ☐ Date Due: _____ Reply Required ☐ Date Due: _____ Info. Only ☐

COMMENTS:

D. E. R.

MAR 2 6 1986

SOUTH WEST DISTRICT
TAMPA

FROM: Larry Lorz TEL.:

Rev. 1/83

HILLSBOROUGH COUNTY ENVIRONMENTAL PROTECTION COMMISSION

INSPECTION REPORT
EXECUTIVE SUMMARY

PLANT NAME TECO GANNON NEDS 040 DATE/TIME 8/13/85 AM

PLANT LOCATION _____ # OF NEDS POINTS _____

PROCESS DESCRIPTION # 2 BOILER UNIT / PRECIPITATOR CONVERTED TO COAL ON MAY 1985. # 1 Unit being converted to coal.

COMPLIANCE VERIFICATION	(X)	PERMIT REVIEW	( )
ENFORCEMENT	( )	OTHER	(X) CEM OPERATIONAL TESTS ON 02
ANNOUNCED	( )	UNANNOUNCED	( )

PERSONS CONTACTED-TITLE BOB STAFFORD / NEIL OAKES / DAVID JELLERSON

NEDS POINTS CHECKED 01, 02

NEDS POINTS IN COMPLIANCE 01, 02

NEDS POINTS IN VIOLATION _____

SUMMARY OF FINDINGS A SERIES OF OPACITY (CEM) readings and logs are being conducted on the Thermo-Electron Controves 400 opacity monitor at TECO Gannon # 2 unit.

The monitor is presently operating in the automatic mode which provides continuous (actual readings) for 2 hours, then zero and span to 51% opacity during a 2-minute period, then automatically resets to the normal mode.

Neil Oakes is in charge of checking and logging data from this instrument during this operational test period, which consists of a daily manual zero and span mode and recording the undisturbed data. This routine will be done for 7 consecutive days and only re-done on a 7-day repetition if the CEM itself is disturbed or malfuction.

~~INSPECTION COMMENTS FOR APIS (LIMIT 50 SPACES)~~

D. E. R.

RECEIVED
OCT 19 1985
SOUTH WEST DISTRICT
TAMPA

INSPECTOR'S SIGNATURE Neil C Oakes

The test started Friday (day 1). This is the information taken from Neal Oakes records:

		Cal zero	Cal Span
8/13/85	10:18	0.5	51%
8/14/85	10:18	—	—

The instrument dial was reading 2.5 - 3.0 % @ 10:25
The instrument is located on the second floor.
The control room records was reading 0 - 2.0 % on the dial records; so there appears to be a discrepancy.
The production rates were: 830,000 # steam/Hr
@ 108 MW.

OCT 1 5 1981

Federal Approved on 10/16/81

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Heywood A. Turner
Senior Vice President Production
Tampa Electric Company
Post Office Box 111
Tampa, Florida 33601

Re: PSD-FL-040 / Tampa Electric Company
Big Bend Station, Unit 4

Dear Mr. Turner:

The review of your March 1980 application to construct a coal-fired steam electric generating unit (Unit 4) located at Big Bend Station near Ruskin, Florida, has been completed. The construction is subject to rules for the Prevention of Significant Air Deterioration (PSD) contained in 40 C.F.R. §52.21.

We have determined that the construction as described in the application meets all applicable requirements of the PSD regulations. Accordingly, enclosed with this letter is your permit package including a Permit to Construct, Part I: Specific Conditions, and Part II: General Conditions. This authorization to construct is based solely on the requirements of 40 C.F.R. §52.21 and does not apply to other permits issued by this or any other agency.

This final permit decision is subject to appeal under 40 C.F.R. §124.19 by petitioning the Administator of the EPA within 30 days after receipt of this notice of the final permit decision. The petitioner must submit a statement of reasons for the appeal and the Administrator must decide on the petition within a reasonable time period. If the petition is denied, the permit becomes immediately effective. The petitioner may then seek judicial review.

Authority to construct this facility will take effect on the date specified in the permit. The complete analysis which justifies this approval has been fully documented for future reference is necessary. Any questions concerning this approval may be directed to Mr. Richard Schutt, Chief, Permit Processing Section, at 404/881-2017.

Sincerely yours,

Original signed by
James T. Wilburn

Howard O. Zeller
Acting Director
Enforcement Division

cc: Mr. Steve Smallwood, FL DER

Permit No.: PSD-FL-040

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30365

PERMIT TO CONSTRUCT UNDER THE RULES FOR THE
PREVENTION OF SIGNIFICANT DETERIORATION OF AIR QUALITY

Pursuant to and in accordance with the provisions of Part C, Subpart 1 of the Clean Air Act, as amended, 42 U.S.C. § 7470 et seq., and the regulations promulgated thereunder at 40 C.F.R. § 52.21, as amended at 45 Fed. Reg. 52676, 52735-41 (August 7, 1980),

Tampa Electric Company
Post Office Box 111
Tampa, Florida 33601

is hereby authorized to construct/modify a stationary source at the following location:

Big Bend Station, Unit 4
Tampa Electric Company
Ruskin, Florida

UTM Coordinates: 361.6 East, 3075.0 North

Upon completion of this authorized construction and commencement of operation/production, this stationary source shall be operated in accordance with the emission limitations, sampling requirements, monitoring requirements and other conditions set forth in the attached Specific Conditions (Part I) and General Conditions (Part II).

This permit shall become effective on November 14, 1981.

If construction does not commence within 18 months after the effective date of this permit, or if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time this permit shall expire and authorization to construct shall become invalid.

This authorization to construct/modify shall not relieve the owner or operator of the responsibility to comply fully with all applicable provisions of Federal, State, and Local law.

12/15/81
Date Signed

Howard D. Zeller
Acting Director
Enforcement Division

PART I: SPECIFIC CONDITIONS

1. The proposed steam generating station shall be constructed and operated in accordance with the capabilities and specifications of the application including the 417 megawatt net generating capacity and the 4330 MMBtu/hr heat input rate. DELETED BY EPA MODIF'N, 1988

2. Emissions shall not exceed the allowable emission limits listed in Table 1 for SO_2, NO_x, PM, and CO.

3. Compliance with the boiler allowable emission limits required in Condition 2 will be demonstrated with performance tests conducted in accordance with the provisions of 40 CFR 60.46a, 48a and 49a, including applicable test methods, sampling procedures, sample volumes, sampling periods, etc. Compliance with opacity limits on the limestone and flyash handling system baghouse, the limestone day silos and the flyash silos will be determined with EPA reference method 9 (Appendix A, 40 CFR 60). These facilities are exempted from mass emission rate compliance tests unless opacity limits are exceeded or the Administrator (or his representative) otherwise determines that such performance testing is required. All facilities will operate within 10 percent of maximum operating capacity during performance tests.

4. The applicant will install and maintain continuous monitoring and recording opacity meter, sulfur dioxide and nitrogen oxide analyzers, oxygen and/or CO_2 analyzer in accordance with the provisions of 40 CFR 60.47a.

5. The following requirements will be met to minimize fugitive emissions of particulate from the coal storage and handling facilities, the limestone storage and handling facilities, haul roads and general plant operations:

   a. All conveyors and conveyor transfer points will be enclosed to preclude PM emissions excepting the coal handling stacker reclaimer, the tail end conveyor feeding the tripper and the barge unloading belt which are exempted for feasibility considerations;

   b. Coal storage piles will be shaped, compacted and oriented to minimize wind erosion;

   c. Water sprays for storage piles, handling equipment etc., including the handling equipment exempted from the conveyor enclosure requirement, will be applied during dry periods and as necessary to all facilities to maintain opacity (determined with reference Method 9) below 20 percent;

   d. The limestone handling receiving hopper, conveyor transfer points and day silos will be maintained at negative pressures with the exhaust vented to a control system(s); and

   e. The flyash handling system (including transfer and silo storage) will be maintained at negative pressures and vented to a control system.

6. The applicant will perform post-construction continuous ambient monitoring of sulfur dioxide emissions in accordance with EPA Region IV policies and procedures and the guidance offered in "Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD)", EPA-450/2-78-019, May 1978 and the quality

assurance procedures of 40 CFR 58 Appendix B. Such monitoring will be continued for a period of at least 1 year and until determined by the Administrator (or his representative) that the effects of the modification on ambient air quality have been quantified.

7. The applicant will comply with all requirements and provisions of the New Source Performance Standard for electric utility steam generating units (40 CFR 60 Part Da). In addition, the applicant must comply with the provisions and the requirements of the attached General Conditions.

8. While Tampa Electric Company has complied with the regulations entitling them to this PSD permit (40 CFR 52.21), this does not constitute an environmental endorsement of this permit nor does it in any way prejudge or predetermine the ongoing EIS review.

9. If it is determined through the NPDES permitting process or related EIS review, that cooling towers would be required for the construction and operation of the facility at this location, this permit would be revoked and a complete new application would be required addressing all new emissions and subsequent requirements for this new plant configuration.

10. The applicant must submit to EPA Region IV's Consolidated Permits Branch within five (5) working days after it becomes available, copies of all technical data pertaining to the selected control devices, including formal bids from vendors, guaranteed efficiencies or emission rates. Although the type of control equipment described in the application has been determined by EPA to be adequate, EPA may, upon review of the data, disapprove the application if EPA determines the selected devices to be inadequate to meet the emission limits specified in this conditional approval.

11. The applicant shall maintain records of all coal washing and preparation activities for any coal which is to be fired in Big Bend Unit No. 4. These reports shall be submitted to EPA on a quarterly basis.

6. Any change in the information submitted in the application regarding facility emissions or changes in the quantity or quality of materials processed that will result in new or increased emissions must be reported to the permitting authority. If appropriate, modifications to the permit may then be made by the permitting authority to reflect any necessary changes in the permit conditions. In no case are any new or increased emissions allowed that will cause violation of the emission limitations specified herein.

7. In the event of any change in control or ownership of the source described in the permit, the permittee shall notify the succeeding owner of the existence of this permit by letter and forward a copy of such letter to the permitting authority. Such notification must be given prior to transfer of ownership.

8. The permittee shall allow representatives of the State environmental control agency and/or representatives (including contractors) of the Environmental Protection Agency, upon the presentation of credentials:

   (a) to enter upon the permittee's premises, or other premises under the control of the permittee, where an air pollutant source is located or in which any records are required to be kept under the terms and conditions of the permit;

   (b) to have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit, or the Act;

   (c) to inspect at reasonable times any monitoring equipment or monitoring method required in this permit;

   (d) to sample at reasonable times any emission of pollutants;

   and

   (e) to perform at reasonable times an operation and maintenance inspection of the permitted source.

9. All correspondence required to be submitted by this permit to the permitting agency shall be mailed to the:

   Chief, Compliance Branch
   Enforcement Division, EPA Region IV
   345 Courtland Street, NE
   Atlanta, Georgia 30365

10. The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

The emission of any pollutant more frequently or at a level in excess of that authorized by this permit shall constitute a violation of the terms and conditions of this permit.

TABLE 1

ALLOWABLE EMISSION LIMITS

Facility	POLLUTANTS								
	SO_2		NO_x		PM		CO		
	lb/MMBtu	lb/hour	lb/MMBtu	lb/hr	lb/MMBtu	lb/hr	lb/MMBtu	lb/hr	Opacity
1. Unit 4 Boiler (4330 MMBtu/hr) Continuous Limit					0.03	130	0.014	61	20%[a]
30 Day Rolling Average	0.82	3576 3551	0.6	2598					
2. Limestone and Handling System Baghouse						0.65[b]			5%
3. Limestone Day Silo						0.05[b]			5%
4. Flyash Silos and Handling System						0.2[b]			5%

[a] Not to be exceeded for more than one six minute period per hour and never to exceed 27 percent opacity.

[b] Exempt from compliance testing provided opacity limit is maintained.

Response to Comment on the Revised Preliminary Determination

Tampa Electric Company

PSD-FL-040

Comments were received from one source during the public comment period for Tampa Electric Company's (TECO) proposed electric generating unit (Big Bend Unit 4). The public comment period, which closed on September 2, 1981, was for the Revised Preliminary Determination issued in the Draft Environmental Impact Statement. A summary of the comments received and EPA Region IV responses are as follows:

Comment 1:

The commenter noted that a sentence in the BACT discussion for NO_x and CO referred to a requirement for a flue gas O_2 or CO_2 monitor. They felt it should have been deleted since the monitor requirement had been deleted.

Response 1:

That reference to the flue gas O_2 or CO_2 monitor was included in error. It has been omitted in the Final Determination.

Comment 2:

The commenter questioned the need to "always provide 25% or greater reduction in potential SO_2 emissions" through coal washing and preparation as they understand Condition 11 to require.

Response 2:

Condition 11 requires that "The applicant shall maintain records of all coal washing and preparation activities. . . "; however, in order to prevent any misinterpretation the reference to a minimum potential SO_2 emission removal will be stricken. Condition 11 will remain in the Final Determination but will be reworded for clarity and precision.

Comment 3:

The commenter noted that the potential annual SO_2 emissions in Table I was incorrect.

Response 3:

The correct number of 15,552 tons/yr will be inserted in the Final Determination.

RESPONSE TO COMMENT

TAMPA ELECTRIC COMPANY

(PSD-FL-040)

One letter of comment was received during the public comment period for Tampa Electric Company's (TECO) proposed electric generating unit (Big Bend Unit 4). The Public Notice was published December 31, 1980. Due to a substantial error in the BACT evaluation for the SO_2 emission limit, EPA has decided to issue this revised Preliminary Determination for public comment prior to a Final Determination. A summary of the substantive comments received and EPA Region IV responses are as follow:

Comment 1:

The commenter pointed out that the basis for the SO_2 allowable emission limit included in the Preliminary Determination was in error and that the resulting limit (0.63 lb/MMBtu) was too restrictive.

Response 1:

Following reevaluation of the application and review of the additional information submitted with the comments, EPA concludes that the data in the application was misinterpreted in developing the SO_2 allowable emissions limit in the original Preliminary Determination. In response to the comment, EPA has reevaluated the SO_2 BACT analysis and determined an SO_2 allowable limit (0.82 lb/MMBtu), based on the higher end of a proposed allowable range contained in an addendum to the application.

Comment 2:

The commenter was concerned that water spraying of the coal pile and drop points, as proposed in the application, was required during all dry and high wind periods, second that water spraying of the limestone was unnecessarily required, and third that enclosed limestone conveyors need not be exhausted to a control system.

Response 2:

The applicant is required, as specified in Condition 5c. to utilize water sprays during dry periods to maintain opacity of all fugitive sources below 20 percent. Compliance with this condition of approval does not necessarily require water spraying during all dry periods or periods of high wind. Neither does it mandate water spraying of limestone. If the limestone storage pile is enclosed, as specified in the comments, it likely will not require spraying. With respect to the comment on transfer conveyor exhaust, the language of the Preliminary Determination was somewhat misleading. The intent was to require exhaust and control of conveyor transfer points, (as proposed in the application). The matter has been clarified in this Preliminary Determination.

Comment 3:

The commenter feels that use of a flue gas oxygen meter to balance CO and NO_x emissions from a utility boiler is not practical or feasible due to variations in the allowable O_2 range with boiler load and with the properties of the coal being fired.

Response 3:

EPA acknowledges the commenter's concerns here and has therefore revised this permit providing TECO the option of either monitoring for O_2 or CO_2. EPA will consider either choice as being an effective means of balancing NO_x and CO emission tradeoffs in order to satisfy this particular permit requirement.

Comment 4:

The commenter feels that the SO_2 post-construction monitoring requirement is unjustified.

Response 4:

In as much as the proposed new source will be increasing SO_2 emissions into the Big Bend region by as much as 12,000 tons per year and existing ambient air monitoring data at 4 of the 5 stations in the vicinity show concentrations in excess of 50 percent of the SO_2 NAAQS, EPA maintains the post-construction SO_2 monitoring requirement to establish the impact of the new source on existing ambient air quality.

Comment 5:

The commenter objected to the requirement for monitoring of the pH in the FGD system as unreasonable.

Response 5:

Upon reevaluation of the proposed FGD control instrumentation, EPA agrees that redundant scrubber inlet and exit SO_2 analyzers provides sufficient assurance that compliance of the SO_2 emissions limit should be maintained.

Comment 6:

The commenter questioned the requirement to submit a new PSD permit if the design of the system is modified to include brackish water cooling towers.

Response 6:

As stated by Region IV new source review staff in a meeting with TECO regarding the environmental impact statement, the addition of the cooling towers (PM emitting sources) to the proposed construction would necessitate resubmittal of the PSD application. The air quality analysis, particularly with respect to fugitive PM emissions, would be in question. In addition, the modification would be regarded as a significant modification to the plant design proposed for PSD preconstruction review.

Comment 7:

The commenter requested clarification on the degree of detail necessary for FGD system design parameters required for submittal and was concerned about confidentiality of certain materials.

Response 7:

The required submittal is not meant to be exhaustive or time consuming; however, sufficient detail on scrubber and ESP design (liquid/gas flow characteristics, capacity, controls, performance guarantees etc.) should be submitted to allow a determination on whether or not the unit can achieve the required control levels. The application discusses only "generic" control systems. Integral to this discussion is the characteristics of the selected coal. As to confidentially of submitted materials, any such materials contained in the submittal should be clearly marked. Confidential materials will be maintained in a separate locked file and its review will be restricted to the engineer(s) responsible for evaluating system design. Other individuals and the general public will not be afforded direct access to the materials.

This Preliminary Determination takes into consideration the comments and responses discussed previously and additional minor comments included in the same submittal. A copy of the comments received have been appended to the Preliminary Determination and will be placed on display in the same location as the original Preliminary Determination for public information

Comments on EPA's Preliminary Determination on the Big Bend Unit 4 PSD Application

p. E-5

In the discussion of BACT for NO_x and CO, the sentence "An attachment to this preliminary determination summary specifies combustion control requirements to balance the trade-offs between NO_x and CO emissions through the use of a flue gas oxygen or CO_2 monitor." should be deleted since the attachment and requirements have been deleted from the preliminary determination as noted in the response to Comment No. 3 on page E-23.

p. E-14 (Condition No. 11)

The applicant will demonstrate compliance with the NSPS requirements for percent reduction of potential sulfur dioxide emissions by monitoring coal characteristics and flue gas sulfur dioxide content, and through other procedures established in 40 CFR Subpart Da, as discussed on p. E-4. The BACT analysis assumed 25% reduction in potential sulfur dioxide emissions (not sulfur) through coal washing and preparation. This assumption was based on coal washing data indicating 25% reduction is possible. However, should the coal washing and preparation not always provide 25% or greater reduction in potential SO_2 emissions, flexibility has been designed into the control equipment to achieve an overall reduction in potential SO_2 emissions of 90%. For these reasons, Condition No. 11 should be deleted.

p. E-17, Table 1

The potential emissions of SO_2 should be 15,552 tons/hr to reflect the 0.82 lbs. SO_2/MMBTU emission rate.

(Submitted by Mr. Heywood A. Turner at the EIS Public Hearing on August 19, 1981; to be entered into the official record.)

TECO
TAMPA ELECTRIC COMPANY

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

January 28, 1981

Mr. Tommie A. Gibbs, Chief
Air Facilities Branch
United States Environmental
Protection Agency
Region IV
345 Courtland Street
Atlanta, Georgia 30308

RE: Tampa Electric Company
Big Bend Station - Unit 4
PSD Application #PSD-FL-040

Dear Mr. Gibbs:

We have reviewed the Big Bend Unit 4 PSD Application Preliminary Determination and are submitting the attached comments. These comments are presented in a format and sequence similar to that of the Preliminary Determination.

As discussed with EPA representatives on January 14, 1981, we are most concerned with the calculated 30 day rolling average SO_2 limitation and specific conditions 5,7 and 8. Our comments with respect to these major items as well as numerous other items are provided within.

Should you have any questions regarding this matter, please contact Mr. Jerry Williams, Manager, Environmental Planning.

Sincerely,

Alex Kaiser
Vice President-Energy Supply

attachment

TAMPA ELECTRIC COMPANY COMMENTS ON THE
PSD - FL - 040 APPLICATION PRELIMINARY DETERMINATION

II. LOCATION

o Page 1

The northern and southern property boundaries are not Big Bend Road and U.S. Highway 41. The site is located west of Highway 41 with plant properties both north and south of Big Bend Road.

III. PROJECT DESCRIPTION

o Page 1

Big Bend Unit 4 will have a net generating capacity of 417 MWe. The gross generating capacity will be 486 MWe. The maximum heat input rate is 4[illegible] million BTU's per hour.

Coal washing facilities at the generating site were not included as part of the application and are not planned for Big Bend Station. The coal will be washed prior to delivery to Big Bend Station.

o Page 2

Due to the as-received moist nature of the limestone to be utilized at Big Bend Station and the rainfall amounts throughout the year, the limestone will be stored within a building.

IV. SOURCE IMPACT ANALYSIS

A. Best Available Control Technology Analysis (BACT)

1. Sulfur Dioxide Emissions Control

o Page 3

Five percent of the potential SO_2 Emissions are expected to remain in the ash.

o Pages 3 and 4

The calculated thirty day rolling average emission limitation of 0.63 lbs./MMBTU was based on fuel F-2B, a fuel utilized in specifying the Flue Gas Desulfurization (FGD) system. As noted on page 4-12 of Volume 2 in the application, the fuel quality analysis presented for fuel F-2B reflected a 25% removal of potential SO_2 emissions due to coal washing.

EPA concluded in the determination that 90% reduction in potential SO_2 emissions resulting from 25% removal by washing, 5% retention in the ash, and 86% removal by the FGD system constituted BACT. However, in calculating the SO_2 limitation based on the 90% removal criteria, EPA failed to recognize the washed condition of the coal. The EPA calculations are as follows:

Uncontrolled SO_2 emissions	6.30 lbs./MMBTU	
Emissions after washing	4.72 lbs./MMBTU	90% Removal
Emissions after 5% ash retention	4.50 lbs./MMBTU	
Emissions after FGD system	0.63 lbs./MMBTU	

EPA began their 90% removal calculations with an uncontrolled SO_2 emission rate of 6.3 lbs.MMBTU which is actually an emission rate after coal washing. Thus, a 25% removal from coal washing was calculated twice. The calculations should have been made as follows:

Uncontrolled SO_2 emissions	8.40 lbs./MMBTU	
Emissions after washing	6.30 lbs./MMBTU	90% Removal
Emissions after 5% ash retention	6.00 lbs./MMBTU	
Emissions after FGD system	0.84 lbs./MMBTU	

The correct emission limitation is 0.84 lbs./MMBTU. The 0.63 lbs./MMBTU calculated by EPA reflects an overall reduction in potential SO_2 emissions of 93%.

At the request of EPA, TECO submitted a proposed 30 day rolling average SO_2 emission limitation range of 0.77 to 0.82 lbs./MMBTU. This information was submitted based on data provided by the potential coal suppliers for Big Bend Unit 4. This value range is consistent with and below the above calculated emission limit of 0.84 lbs./MMBTU. EPA, however, rejected the TECO proposal as too high an emission limit and has required the incorrectly calculated emission limit of 0.63 lbs./MMBTU.

2. PARTICULATE MATTER (PM)

o Page 5

It is noted that during dry periods and high winds, water spraying of the coal pile and all drop points is required. It was proposed in the application that water spraying be utilized, for fugitive emissions control during high winds and dry periods. However, these techniques are not necessary control measures during all dry and high wind periods. When weather conditions that may require water spraying for fugitive emissions control are anticipated, arrangements are made for the services of a water tank truck.

The limestone to be utilized by the Unit 4 FGD System will be very moist. To avoid additional moisture from precipitation, the limestone storage pile will be enclosed within a building. Due to the moist, as-received, nature of the limestone, water spraying will not be necessary. The limestone conveyors will be covered or enclosed but venting to a control device is not necessary and has never been proposed. As noted in the application, the rail car/truck unloading facilities and the limestone day silos will be provided with exhaust systems venting to bag filters.

3. NITROGEN OXIDES (NO_x) AND CARBON MONOXIDE (CO)

o Page 5

An attachment to the Preliminary Determination specifies combustion control requirements to balance the tradeoffs between NO_x and CO emissions through the use of a flue gas oxygen monitor. This technique is not considered practical or feasible for a utility boiler. Big Bend Unit 4 and

other utility boilers incorporate flue gas oxygen analyzers for proper control of combustion. For a specific design coal, boiler excess oxygen will range from a high value at low operational load to a low value at maximum design capacity. Even these values are fine tuned by the boiler operator for proper steam temperature and are affected by combustion air temperature and other boiler conditions. As the coal (and its carbon content) change, the excess oxygen requirements change over the various load conditions. Therefore, if some maximum excess oxygen value is used for one coal to control NO_x, another coal may still comply with NO_x limits even though the excess oxygen value is higher than the set limit. These values also change at low loads for different coals and boiler conditions and apply in the same manner to CO compliance. During startups, shutdowns and load changes, it would be normal for the excess oxygen to vary outside of the set range while still being in compliance. Note that there will be a continuous monitor for showing compliance with NO_x emission limits. The excess oxygen analyzer is not load dependent; it is used for boiler combustion control and can not be reasonably used for CO and NO_x emission limit control based on some specific coal or operational condition.

A. Air Quality Analysis

1. Increment Analysis

o Page 7

In the last paragraph, third line "... area source has occurred..." should be "... area sources have occurred..."

2. NAAQS Impact

o Page 10

It is noted in the preliminary determination that the applicant proposes and EPA agrees that an adequate demonstration has been made that NAAQS level will not be violated. However, the EPA will require continuous SO_2 monitoring by the applicant to verify the results of the analysis. Guidelines for when post construction monitoring should be required are provided on Page 4, Section 2.1.2 of Ambient Monitoring Guidelines For Prevention of Significant Deterioration (PSD), EPA - 450/4-80-012, November 1980 and are as follows:

2.1.2 Criteria Pollutants -Postconstruction Phase

EPA has discretion in requiring postconstruction monitoring data under section 165 (a)(7) of the Clean Air Act and in general will not require postconstruction monitoring data. However, to require air quality monitoring data implies that the permit granting authority will have valid reasons for the data and, in fact, will use the data after it is collected. Generally, this will be applied to large sources or sources whose impact will threaten the standards or PSD increments. Examples of when a permit granting authority may require postconstruction monitoring data may include:

a. NAAQS are threatened - The postconstruction air quality is projected to be so close to the NAAQS that monitoring is needed to certify attainment or to trigger appropriate SIP related actions if nonattainment results.

b. Source impact is uncertain or unknown - Factors such as complex terrain, fugitive emissions, and other uncertainties in source or emission characteristics result in significant uncertainties about the projected impact of the source or modification. Postconstruction data is justified as a permit condition on the basis that model refinement is necessary to assess the impact of future sources of a similar type and configuration.

It is felt that the Big Bend situation does not fit these guidelines for required postconstruction modeling. The predicted ambient air quality impacts do not threaten NAAQS or PSD increments. The preconstruction ambient air monitoring data provided in the application indicate that the SO_2 ambient air quality in the site vicinity does not approach AAQS except for one reading at a particular station. On May 7, 1977, maximum 24 hour and 3 hour values representing 90% of the respective standard were recorded. However, since that time SO_2 emissions from Big Bend have been reduced by 3.5 tons per hour on a 3-hour average and by 7 tons per hour on a 24-hour average. In addition, the SO_2 ambient air quality data indicate that no other reading exceeded 80% of the standard with the arithmetic mean concentrations not exceeding 30% of the applicable standard. Therefore, based on the EPA guidelines, the ambient air monitoring data, and the Big Bend emission reductions, the requirement for postconstruction monitoring is not justified.

C. Class I Area Impact

o Page 10

In the last paragraph, fourth line, distance is misspelled.

D. Growth Impacts

o Page 11

Based on surveys and previous construction at Big Bend, approximately 90 percent of the construction workers will be hired from within the Tampa area work force.

V. CONCLUSION

o Page 12

#1 As previously noted, Big Bend 4 will have a gross generating capacity of 486 MW_e with a net generating capacity of 417 MW_e. The maximum heat input rate is 4330 MMBTU/HR.

#3 In the last sentence, it is believed opacity should be capacity.

#5 As previously noted, compliance with the condition "Use of Flue Gas Oxygen Meter as BACT for combustion controls" is not considered feasible or pratical.

#6c As previously noted, water spraying will not be provided for limestone handling and storage.

#6d As previously noted, it is unnecessary for the limestone conveyors to be maintained at negative pressures with the exhaust vented to a control system.

#7 While the effluent pH of some FGD systems may provide an indication of SO_2 removal efficiency, such is not the case for the Big Bend Unit 4 system.

The FGD System that Tampa Electric Company has purchased is a limestone based two loop process which produces a gypsum by-product. Control of reagent addition is by an SO_2 mass flow signal. The inlet and outlet SO_2 values are compared, controlling the SO_2 removal efficiency to the setpoint (i.e. 86%) removal. In the two loop process, the first loop operates at a low pH for production of gypsum and some SO_2 removal, while the second loop operates at high pH for dissolution of limestone and the major amount of SO_2 removal. It is possible for the system to meet the required SO_2 removal efficiency while the pH in any one loop is less than it was at some other time for the same overall SO_2 removal. This is because of the two independent loops. While pH is monitored, it is not a direct control value and should not be used as such. Therefore, it is not reasonable to maintain or require a minimum pH value in this system.

#8 As noted, earlier, the need for post construction monitoring is not warranted.

#11 It is not clear why a complete new application would be necessary if cooling towers were required for the facility. The use of cooling towers would have no effect on the information in the application as submitted to date. It would be more reasonable to require that the additional necessary information and analyses due to cooling tower operation be submitted if towers are to be utilized. Then the permitting authority could make the proper changes in the permit conditions. This condition is redundant in light of general condition number 6.

#12 It is not clear as to what detail of technical data is required by the Agency. In addition, formal bids from vendors are considered confidential and are not available for reproduction and distribution.

GENERAL CONDITIONS

#1 & #2

The definitions of start of construction and start of operation are not clear. It is assumed that start of construction is the physical placement of facilities. Start of operation is assumed to mean the beginning of steady on-line commercial operation.

#8a This condition should include the wording ..."at reasonable times....", similar to items 8(b) through 8(e).

ATTACHMENT - "Use of flue gas oxygen meter as BACT for combustion controls"

As previously noted, this procedure is not practical or feasible and as written may constitute non-compliance when, in fact, all emission limitations are met.

Table 1 For the pollutant CO the potential emissions should be 267 Tons/Year.

Table 5 As previously noted the 30 day rolling average SO_2 emission limitation was calculated incorrectly.

In Item 2, flyash should not be included. The flyash handling system and flyash silos are vented to the same bag house. Flyash handling is included in the Item 4 emission rate of 0.2 lb./HR.

file
Teco Big Bend
Unit 4

D. E. R.

JUL 29 1985

SOUTH WEST DISTRICT
TAMPA

TAMPA ELECTRIC
A TECO ENERGY COMPANY

July 26, 1985

Richard D. Garrity, Ph.D.
Southwest District Office
Florida Department of
Environmental Regulation
7601 Highway 301 North
Tampa, Florida 33610

Hamilton S. Oven, Jr., P.E.
Florida Department of
Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

Re: Tampa Electric Company Big Bend Unit No. 4, PA 79-12 Flue Gas Desulfurization System (Scrubber) Upset

Gentlemen:

In accordance with the Big Bend Station Unit No. 4 Conditions of Certification, Condition XV, we reported by telephone on July 25, 1985, to the Southwest District Office the referenced incident. In accordance with that same condition, this letter constitutes written notification.

On July 25, 1985, it was determined from readings on the continuous emission monitoring system that the sulfur dioxide (SO_2) emissions from 12:00 noon to 2:00 p.m. averaged 1.3 lb. SO_2/MMBTU which is above the 1.2 lb. SO_2/MMBTU limit for Big Bend Unit No. 4. The cause of the elevated value was a temporary imbalance in the chemical process of the scrubber system.

The chemical equilibrium was regained in the scrubber system after a short period of time. The daily and 30-day rolling average SO_2 emissions were 0.77 lb. SO_2/MMBTU and 0.50 lb. SO_2/MMBTU respectively.

If you should have any questions concerning this matter, please feel free to give me a call at (813) 228-4111.

Sincerely,

A. Spencer Autry
Manager
Environmental Planning

ASA/jrh

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

APPENDIX I

Conditions of Certification

State of Florida Department of Environmental Regulation
Tampa Electric Company
Big Bend Unit 4
PA 79-12
CONDITIONS OF CERTIFICATION (Revised 3-15-84)

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State of Florida Department of Environmental Regulation
Tampa Electric Company
Big Bend Unit 4
PA 79-12

CONDITIONS OF CERTIFICATION (Revised 6-2-81)

I. Air

The construction and operation of Big Bend Unit 4 at the Tampa steam electric power plant site shall be in accordance with all applicable provisions of Chapters 17-2, 17-4, 17-5 and 17-7, Florida Administrative Code. In addition to the foregoing, the permittee shall comply with the following conditions of certification:

A. Emission Limitations

1. Based on a maximum heat input of 4,330 million BTU per hour, stack emissions from Big Bend Unit 4 shall not exceed the following when burning coal:

   a. SO_2 - 1.2 lb. per million BTU heat input, maximum two hour average, 0.84 lb/MMBtu on a 30-day rolling average.

   b. NO_x - 0.60 lb. per million BTU heat input.

   c. Particulates - 0.03 lb. per million BTU heat input.

   d. Visible emissions - 20% (6-minute average), except one 6-minute period per hour of not more than 27% opacity.

2. The height of the boiler exhaust stack for Unit 4 shall not be less than 490 ft. above grade.

3. Particulate emissions from the coal handling facilities:

   a. The permittee shall not cause to be discharged into the atmosphere from any coal processing or conveying equipment, coal storage system or coal transfer and loading system processing coal, visible emissions which exceed 20 percent opacity. Particulate emissions shall be controlled by use of control devices.

   See MODIFICATION

   b. The permittee must submit to the Department within ten (10) working days after it becomes available, copies of technical data pertaining to the selected particulate emissions control for the coal handling facility. These data should include, but not be limited to, guaranteed efficiency and emission rates, and major design parameters such as air/cloth

   To be submitted

ratio and flow rate. The Department may, upon review of these data, disapprove the use of such device if the Department determines the selected control device to be inadequate to meet the emission limits specified in 3(a) above. Such disapproval shall be issued within 30 days of receipt of the technical data.

4. Particulate emissions from limestone and flyash handling shall not exceed the following:

   a. Limestone silos - 0.05 lb/hr.

   b. Limestone hopper/transfer conveyors - 0.65 lb/hr.

   c. Flyash handling system - 0.2 lb/hr.

5. Visible emissions from the following facilities shall be limited to (5%) opacity: (a) limestone and flyash handling system, (b) limestone day silos and (c) flyash silos.

6. Compliance with opacity limits of the facilities listed in Condition 5 will be determined by EPA reference method 9 (Appendix A, 40 CFR 60).

7. Construction shall reasonably conform to the plans and schedule given in the application.

8. The permittee shall report any delays in construction and completion of the project to the Department's Southwest District Office.

9. Reasonable precautions to prevent fugitive particulate emissions during construction, such as coating of roads and construction sites used by contractors, will be taken by the permittee.

10. Coal should not be burned in the unit unless both electrostatic precipitator and limestone scrubber are operating properly.

11. Coal burned in the unit should be washed before it is transported to the plant site.

B. Air Monitoring Program

1. The permittee shall install and operate continuously monitoring devices for the Unit 4 boiler exhausts for sulfur dioxide, nitrogen dioxide, oxygen and opacity. The monitoring devices shall meet the applicable requirements of Section 17-2.08, FAC, and 40 CFR 60.47a. The opacity monitor may be placed in the duct work between the electrostatic precipitator and the FGD scrubber.

2. The permittee or Hillsborough county shall operate the two ambient monitoring devices for sulfur dioxide in accordance with EPA reference methods in 40 CFR, Part 53, and two ambient monitoring devices for suspended particulates. The monitoring devices shall be specifically located at a location approved by the Department. The frequency of operation shall be every six days commencing as specified by the Department.

3. The permittee shall maintain a daily log of the amounts and types of fuels used and copies of fuel analyses containing information on sulfur content, ash content and heating values.

4. The permittee shall provide sampling ports into the stack and shall provide access to the sampling ports, in accordance with DER publication, Standard Sampling Techniques and Methods of Analysis for the Determination of Air Pollutants from Point Source, July, 1975.

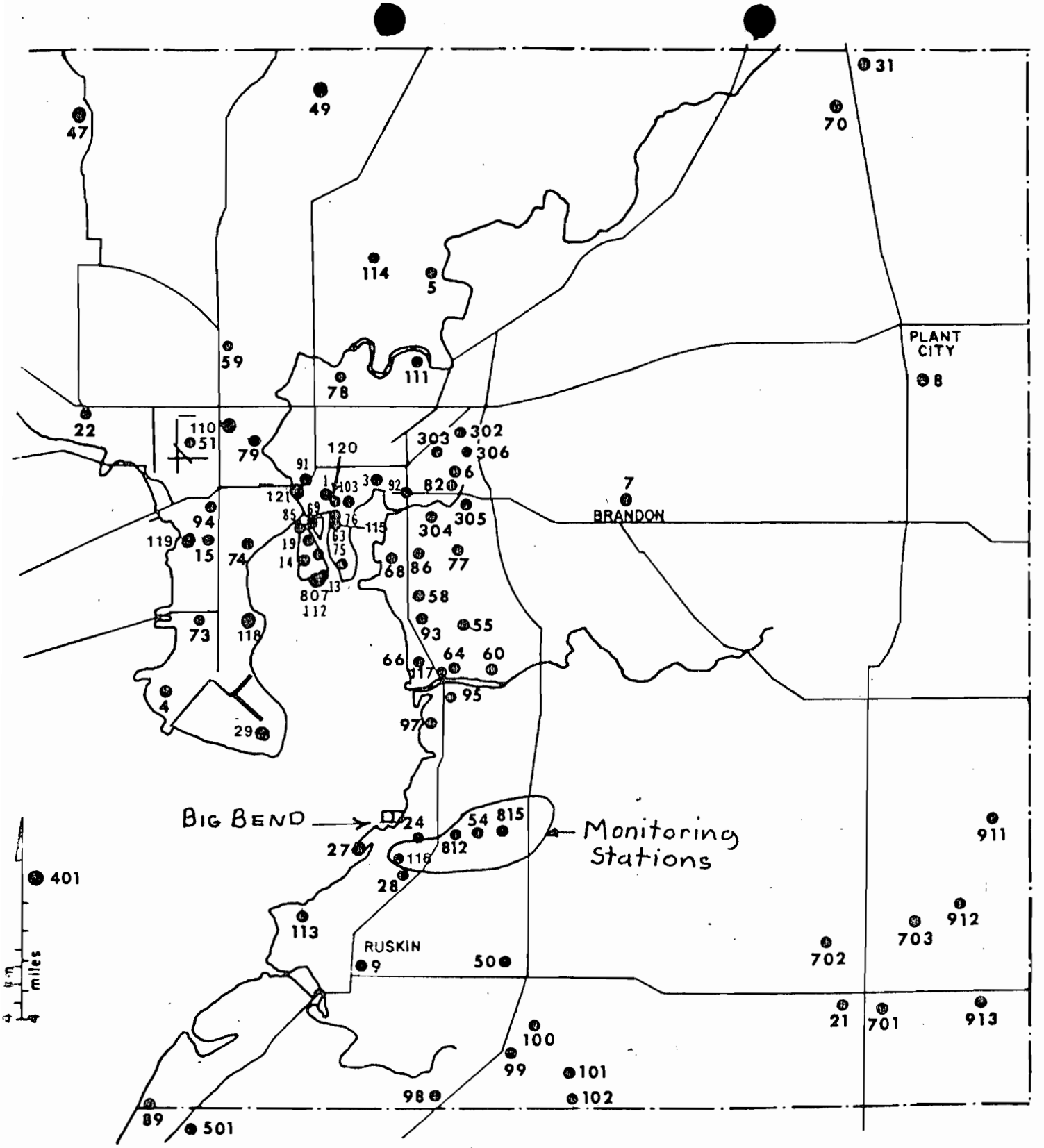
5. The ambient monitoring program may be reviewed by the Department and the permittee annually beginning two years after start-up of Unit 4.

6. Prior to operation of the source, the permittee shall submit to the Department a standardized plan or procedure that will allow the permittee to monitor emission control equipment efficiency and enable the permittee to return malfunctioning equipment to proper operation as expeditiously as possible.

C. Stack Testing:

1. Within 60 calendar days after achieving the maximum capacity at which each unit will be operated, but no later than 180 operating days after initial start-up, the permittee shall conduct performance tests for particulates SO_2, NO_x and visible emissions during normal operations near 4,330 MMBtu/hr heat input and furnish the Department a written report of the results of such performance tests within 30 days. The performance tests will be conducted in accordance with the provisions of 40 CFR 60.46a, 48a, and 49a.

2. Performance tests shall be conducted and data reduced in accordance with methods and procedures in accordance with DER's Standard Sampling Techniques and Methods of Analysis for Determination on Air Pollutants from Point Sources, July, 1975.



AIR SAMPLING STATIONS
HILLSBOROUGH COUNTY, FLORIDA
1979

Figure I

3. Performance tests shall be conducted under such conditions as the Department shall specify based on representative performance of the facility. The permittee shall make available to the Department such records as may be necessary to determine the conditions of the performance tests.

4. The permittee shall provide 30 days prior notice of the performance tests to afford the Department the opportunity to have an observer present.

5. Stack tests for particulates and SO_2 shall be performed annually in accordance with conditions C. 2, 3, and 4 above.

D. Reporting

1. For Unit 4, stack monitoring, fuel usage and fuel analysis data shall be reported to the Department's Southwest District Office on a quarterly basis commencing with the start of commercial operation in accordance with 40 CFR, Part 60, Section 60.7., and in accordance with Section 17-2.08, FAC.

2. Utilizing the SAROAD or other format approved in writing by the Department, ambient air monitoring data shall be reported to the Bureau of Air Quality Management of the Department quarterly. Commencing on the date of certification, such reports shall be due by the last day of the month following the quarterly reporting period.

3. Beginning one month after certification, the permittee shall submit to the Department a quarterly status report briefly outlining progress made on engineering design and purchase of major pieces of equipment (including control equipment). All reports and information required to be submitted under this condition shall be submitted to the Administrator of Power Plant Siting, Department of Environmental Regulation, 2600 Blair Stone Road, Tallahassee, Florida, 32301.

II. Water Discharges

Any discharges into any waters of the State during construction and operation of Big Bend Unit 4 shall be in accordance with all applicable provisions of Chapter 17-3, Florida Administrative Code, and 40 CFR, 423, Effluent Guidelines and Standards for Steam Electric Power Generating Point Source Category, except as provided herein. Also, the permittee shall comply with the following conditions of certification:

A. Plant Effluents and Receiving Body of Water

For discharges made from the power plant the following conditions shall apply:

1. Receiving Body of Water (RBW)

The receiving body of water has been determined by the Department to be those waters of the Tampa Bay and any other waters affected which are considered to be waters of the State within the definition of Chapter 403, Florida Statutes.

2. Point of Discharge (P.O.D.)

The point of discharge will be determined by the Department to be where the effluent physically enters the waters of the State.

3. Thermal Mixing Zone

The instantaneous zone of thermal mixing for the cooling system shall not exceed an area of 4980 acres. The temperature at the point of discharge into the Tampa Bay shall not be greater than 109 degrees F. The temperature of the water at the edge of the mixing zone shall not exceed the limitations of Paragraph 17-3.05(1)(d). The permittee shall validate the size of this mixing zone by submission of a verified or calibrated thermal dispersion model at least six months prior to commencement of operation. The Department and TECO shall agree to a program for selecting, verifying and utilizing an appropriate model.

4. Chemical Wastes

All discharges of low volume wastes (demineralizer regeneration, floor drainage, lab drains and similar wastes) shall comply with Chapter 17-3. If violations of Chapter 17-3 occur, corrective action shall be taken. These wastewaters shall be discharged to an adequately sized and constructed treatment facility. Preoperational and operational metal cleaning wastes, low volume wastes, boiler fireside wash, air preheater wash, and stack wash shall be disposed of in an adequately sized percolation pond and spray irrigation facility.

5. Coal Pile

Coal pile runoff shall be disposed of in the wastewater treatment/spray irrigation system and shall not be directly discharged to surface waters.

6. Chlorine

The concentration of total residual chlorine discharged from Unit 4 shall not exceed 0.2 mg/l at the POD

nor 0.01 mg/l beyond an instantaneous mixing zone of 6.1 acres. The condensers for Unit 4 shall not be chlorinated more than two hours per day and shall not be chlorinated simultaneously with any other unit.

7. pH

The pH of the combined discharges shall be such that the pH be within the range of 6.0 to 8.5.

8. Polychlorinated Biphenyl Compounds

There shall be no net discharge of polychlorinated biphenyl compounds.

9. FGD Chloride Bleedstream

The bleedstream from the FGD system shall be treated to control pH, turbidity, solids and toxic metals prior to discharge into the cooling water system. The following effluent limitations will apply:

Effluent	Daily Maximum	Maximum 30-Day Daily Average
TSS	100 mg/l	30 mg/l
Oil and Grease	20 mg/l	15 mg/l
pH	6-9	6-9

The design plans and specifications of the treatment system shall be submitted to the Department for review and approval prior to construction.

10. Boiler and Bottom Ash Sluice System Blowdown

Blowdown from the boiler and from the bottom ash sluice system shall be treated as appropriate prior to discharge to the cooling water system. The following effluent limitations shall apply:

Effluent	Daily Maximum	Maximum 30-Day Daily Average
TSS	100 mg/l	30 mg/l
Oil and Grease	20 mg/l	15 mg/l
pH	6-9	

TECO shall provide the dimensions of the bottom ash system settling pond and provide calculations demonstrating that sufficient residence time will be provided to achieve the above limitations.

11. Gypsum Storage Areas

There shall be no direct discharge of stormwater runoff to surface waters from the gypsum storage area.

12. Storm Water Runoff

During plant operation, necessary measures shall be used to settle, filter, treat or absorb silt-containing or pollutant-laden stormwater runoff to limit the suspended solids to 50 mg/l or less at the POD during rainfall periods less than the 10-year, 24-hour rainfall, and to prevent an increase in turbidity of more than 50 Jackson Turbidity Units above background in waters of the State beyond 150 meters from the POD at Station E 4500 and N 3712.

Control measures shall consist at the minimum of filters, sediment traps, barriers, berms or vegetative planting. Exposed or disturbed soil shall be protected as soon as possible to minimize silt - and sediment-laden runoff. The pH shall be kept within the range of 6.0 to 8.5 at the POD.

13. Percolation Pond Overflow

There shall be no discharge from the wastewater treatment system percolation pond except during emergency conditions caused by severe weather. Any discharge from the existing overflow pipe shall be reported to the Department and the Environmental Protection Agency. All discharges from this overflow system shall be monitored for pH, TSS, oil and grease, and the metals listed in condition II, B.1.; the flow and duration of flow shall be estimated.

B. Water Monitoring Programs

The permittee shall monitor and report to the Department the listed parameters on the basis specified herein. The methods and procedures utilized shall receive written approval by the Department. The monitoring program may be reviewed annually by the Department, and a determination may be made as to the necessity and extent of continuation, and may be modified in accordance with Condition No. XXV.

1. Chemical Monitoring

The following parameters shall be monitored during discharge as shown, discharge commencing with the start of commercial operation of Unit 4 and reported quarterly to the Departments Southwest District Office:

Parameter	Location	Sample Type	Frequency
Flow, Cooling	Intake	Pump Log	Continuous
Flow, Bottom Ash	Prior to CWS	Recorder	Continuous
Flow, Boiler Blowdown	Prior to CWS	Daily Log	Daily
Flow, FGD Bleed	Prior to CWS	Recorder	Continuous
pH	CWS and prior to CWS on FGD Bleed Boiler & Bottom Ash Blowdown	Grab "	Two per Week
Temperature	CWS Outfall	Recorder	Continuous
TSS	Bottom Ash Blowdown, FGD Bleed, & Boiler Blowdown	Grab	Two per Week Two per Month
Chlorine, Total Residual	Outfall	Multiple Grab	Weekly
Oil and Grease	Boiler Blowdown Bottom Ash Blowdown and FGD bleed	Grab	Two per Month
Metals	Intake, Outfall FGD Bleed Stream Bottom Ash Blowdown & Boiler Blowdown Prior to discharge to CWS	Two-Grab composite, not less than two hours between samples	Two per Month for the first year, then monthly thereafter
Arsenic	"		"
Cadmium	"		"
Iron	"		"
Lead	"		"
Mercury	"		"
Selenium	"		"
Zinc	"		"
Copper	"		"
Chromium	"		"
Nickel	"		"

2. Biological Monitoring

a. Thermal Studies

Sampling shall be done on a bi-monthly basis commencing one month after certification and shall continue for a period of one year after Unit 4 is on-line. Such sampling shall consist of a baseline survey and an intensive survey. Sampling methodology shall be the same as that in the 1979 aquatic biology studies. Deviations from that methodology shall be approved by the DER.

All raw data shall be available upon request by DER. At the end of the first year of post-operational study, the Department shall review all of the data in the form of an annual report and shall determine if

*CWS - Cooling Water System

mitigative action must be taken by TECO and shall determine if the impacts of the thermal discharge are in compliance with the requirements of Section 17-3. 05(1)(f) and if the thermal mixing zone granted by Condition II.A.3 is appropriate. If the data are sufficient to convince the Department that severe thermal effects have been confined to an acceptably limited area, the monitoring studies shall be terminated. If not, the studies shall be continued until such time as the thermal impact can be thoroughly evaluated.

(1) Baseline Survey

In order to put the 1979 benthic study in proper ecological perspective regarding the regular cyclical biotic fluctuations which are known to occur in Tampa Bay, the following program shall be implemented:

i. Benthic macroinvertebrate sampling shall be carried out on a bi-monthly basis one month after the time of enactment of certification until a period of 12 months prior to commencement of operation of Unit 4. Five stations corresponding to stations 5, 6, 8, 11, and 12 of the 1979 Benthic Ecology Study* shall be sampled according to the methods outlined in the TECo benthic report. Deviations from that methodology shall be approved by the DER.

ii. Water quality parameters shall be monitored during the benthic sampling program on a bi-monthly basis at each of the above stations. Parameters to be examined shall include salinity, dissolved oxygen, turbidity, and water temperature (top and bottom).

iii. A sediment analysis shall be carried out at each of these stations on a bi-monthly basis corresponding to the benthic sampling according to the methods outlined in the 1979 Benthic Study. If sediment samples show little bi-monthly variability, TECo may request a less rigorous sampling frequency.

(2) Intensive Survey

In order to adequately assess the thermal impact of Big Bend Unit 4 in conjunction with the combined plume discharge from Units 1, 2, and 3, the following biological monitoring program shall be implemented one-year before and shall continue for one year after commencement of operation of Unit 4. A proposal for these intensive studies shall be prepared by the applicant and shall be submitted to DER for approval at least 18 months prior to commercial operation of Unit 4. Such a proposal shall reflect the methodologies employed during the 1979 study so that both data sets can be compared for evaluation of thermal impact from Unit 4.

*"A Study of Thermal Effects on Benthic Communities of Big Bend, Tampa Bay (Florida)", July 1980. TECO

Revised 6/2/81

i. The applicant shall collect bi-monthly benthic, samples. The stations to be chosen for the Benthic sampling program shall be taken from the 1979 Benthic Ecology Study plus three additional stations. These three stations shall be located on a transect running into the bay from station 8, paralleling stations 5, 6, and 7 of the 1979 study. Water quality parameters and sediment samples shall be collected and analyzed as in the baseline survey.

ii. Stations 1 and 2 shall be deleted from the proposed studies.

iii. Trammel (or gill net) and trawl samples shall be taken each month during the day and at night in the vicinity of the embayment--Apollo Beach pass. If possible, night sampling shall be during a flood tide. Additionally, monthly seine samples shall be collected in the area during the day.

b. Entrainment

1. In order to evaluate the entrainment mortality at the Big Bend Station, TECO shall conduct a Fine Mesh Screen Survivability Study (similar to the 1980 Prototype FMS study) for one full spawning period (March through September). Sampling for the study will be conducted at three locations pertaining to Unit 4:

Station 1: Front of screen after organisms are impinged and washed to the screen return system.

Station 2: Behind the screen.

Station 3: At the discharge point in the Organism Return Canal(ORC).

Stations 1 and 2 will be sampled simultaneously to estimate the total number of organisms entrained at the plant. Initial and latent mortality tests will be conducted on organisms collected at stations 1 and 3 only. A detailed scope of study shall be submitted by TECO at least twelve months prior to the commencement of commercial operation of Unit 4.

III. Water Use

A. Use of Water

TECO shall use the lowest quality water which it has the ability to use. To the extent that a dependable supply of non-potable water can be provided, TECO shall use the non-potable water in lieu of the potable water from the public

water supply system of Hillsborough County. However, if TECO can demonstrate that non-potable water is not available due to technical or environmental reasons, then the use of potable water may be authorized by the Secretary upon the concurrence of the Southwest Florida Water Management District (SWFWMD).

B. Consumptive Use of Groundwater

1. In the event that fresh groundwater in excess of quantities permitted by SWFWMD should be required for the operation of Big Bend Unit 4, TECO shall demonstrate to the satisfaction of the SWFWMD that such a consumptive use of groundwater will be in compliance with the regulations and policies of the District and will have no significant adverse effect on regional water supplies.

2. In the event that use of brackish groundwater should become necessary, an intensive investigation and aquifer testing program shall be performed by TECO. The aquifer

testing program shall be submitted to the Department and the Director, Regulatory Division of SWFWMD, and approved prior to commencement of the investigation. The investigation should include but need not be limited to the following:

a. The geology encountered while drilling the well, with emphasis placed on the depth, thickness and hydraulic characteristics of formations encountered.

b. The aquifer systems that are encountered, along with the discussion on water quality and availability.

c. Performance of a pump test, description of aquifer characteristics and evaluation procedure.

d. Interpretations of geophysical logs.

e. Discussion of aquifer recharge and ultimate source.

Upon completion of the investigations, TECO shall submit a report on the feasibility of utilizing brackish groundwater for cooling tower make-up, and at that time the SWFWMD may authorize withdrawals. If SWFWMD should authorize withdrawals of brackish water, TECO shall submit monthly pumpage reports and chlorides, sulfate and TDS analysis on the production well to the SWFWMD.

C. Emergency Shortages

In the event an emergency water shortage should be declared pursuant to Section 373.175 or 373.246, F.S., by Southwest Florida Water Management District for an area including Hillsborough County, the Department pursuant to Section 403.516, F.S., may alter, modify, or declare to be inactive all or parts of Condition III.A.-E. An authorized SWFWMD representative at any reasonable time may enter the property to inspect the facilities.

D. Monitoring and Reporting

Tampa Electric Company shall implement the following groundwater monitoring program:

1. The groundwater levels shall be monitored at wells as approved by DER and the Southwest Water Management District. Chemical analyses shall be made on samples from all monitored wells identified in this Condition. The location, frequency, water levels and selected chemical analyses shall be as given in Condition III.D.3.

2. The groundwater monitoring program shall be implemented at least one year prior to operation of Big Bend Unit 4. The chemical analyses shall be in accord with the latest edition of Standard Methods for the Analysis of Water and Wastewater. The data shall be submitted within 30 days of collection/analysis to the Southwest Florida Water Management District and to the DER Power Plant Siting Section.

3. After consultation with the DER and SWFWMD, TECO shall install a monitoring well system, as generally shown on Figure 3, to monitor groundwater quality in the top 40 feet of the surficial aquifer. One well shall be installed to a depth greater than 40 feet but less than 100 to monitor vertical dispersion or groundwater contaminants. Monitoring well locations and designs shall be submitted to the Department and SWFWMD for review. Approval or disapproval of the locations and design shall be granted within 60 days. The water samples collected from each of the monitor wells shall be collected immediately after removal by pumping of a quantity of water equal to two casing volumes. The water quality analyses shall be performed monthly during the year prior to commercial operation and for two years after operation and quarterly thereafter. Results shall be submitted to the Department and the SWFWMD by the fifteenth (15th) day of the month following the month during which such analyses were performed. Testing for the following constituents is required:

Conductance	Nickel
pH	Selenium
Chloride	Chromium
Iron	Arsenic
Cadmium	Beryllium
Zinc	Mercury
Copper	Lead
Sulfate	Gross Alpha
Silver	Barium

4. After the second year of monitoring and periodically thereafter, the Department and the permittee shall review the results of the monitoring program and determine the necessity for modifying or continuing the program.

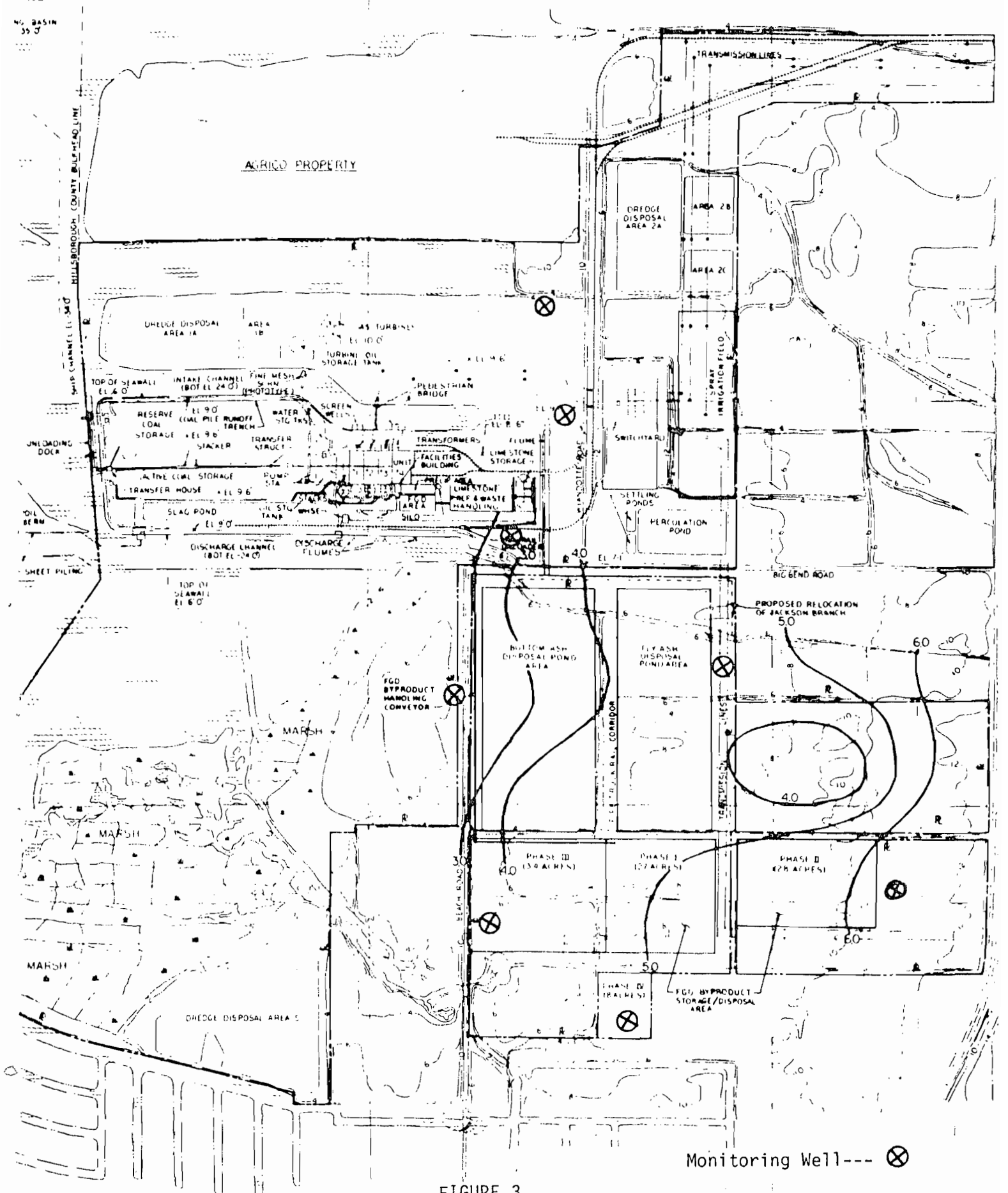


FIGURE 3

E. Leachate

1. Zone of Discharge

Leachate from the FGD/gypsum landfill, coal storage pile, bottom ash pond, wastewater treatment ponds, ash disposal cells, and spray irrigation field shall not contaminate waters of the State (including both surface and groundwaters) in excess of the limitations of Chapter 17-3, FAC., beyond the boundary of the site.

2. Corrective Action

When the groundwater monitoring system shows a violation of the groundwater water quality standards of Chapter 17-3, FAC., the appropriate ponds, FGD landfill, or coal pile shall be sealed, relocated or closed, or the operation of the affected facility shall be altered in such a manner as to assure the Department that no violation of the groundwater standards will occur beyond the boundary of the site.

IV. Control Measures During Construction

A. Stormwater Runoff

During construction, necessary measures shall be used to settle, filter, treat or absorb silt-containing or pollutant-laden stormwater runoff to limit the suspended solids to 50 mg/l or less at the POD during rainfall periods less than the 10-year, 24-hour rainfall, and to prevent an increase in turbidity of more than 50 Jackson Turbidity Units above background in waters of the State beyond 150 meters from the POD.

Control measures shall consist at the minimum of filters, sediment traps, barriers, berms or vegetative planting. Exposed or disturbed soil shall be protected as soon as possible to minimize silt- and sediment-laden runoff. The pH shall be kept within the range of 6.0 to 8.5 at the POD.

B. Sanitary Wastes

Disposal of sanitary wastes from construction toilet facilities shall be in accordance with applicable regulations of the Department and appropriate local health agency. The sewage treatment plant shall be operated in accordance with Chapters 17-3, 17-6, 17-16, and 17-19, FAC.

C. Environmental Control Program

An environmental control program shall be established under the supervision of a qualified person to assure that all construction activities conform to good environmental practices and the applicable conditions of certification.

The permittee shall notify the Department by telephone if unexpected harmful effects or evidence of irreversible environmental damage are detected during construction, shall immediately report in writing to the Department and shall within two weeks provide an analyses of the problem and a plan to eliminate or significantly reduce the harmful effects or damage and a plan to prevent reoccurrence.

D. Discharge of Construction Dewatering Effluent

Construction dewatering effluent shall be treated as appropriate to limit suspended solids to no more than 50 mg/l. The discharge of construction dewatering liquids shall not cause turbidity in excess of 50 Jackson Turbidity Units above ambient beyond a 20 meter radius from the point of discharge. Weekly grab samples will be collected and analyzed for suspended solids.

V. Solid Wastes

Solid wastes resulting from construction or operation shall be disposed of in accordance with the applicable regulations of Chapter 17-7, FAC. The permittee shall submit a program for approval outlining the methods to be used in handling and disposal of solid wastes. Such program shall indicate at the least methods for erosion control, covering, vegetation and quality control.

Open burning in connection with land clearing shall be in accordance with Chapter 17-5, FAC. No additional permits shall be required, but the Division of Forestry shall be notified prior to burning. Open burning shall not occur if the Division of Forestry has issued a ban on burning due to fire hazard conditions.

VI. Operation Safeguards

The overall design, layout, and operation of the facilities shall be such as to minimize hazards to humans and the environment. Security control measures shall be utilized to prevent exposure of the public to hazardous conditions. The Federal Occupational Safety and Health Standards will be complied with during construction and operation. The Safety Standards specified under Section 440.56, F.S., by the Industrial Safety Section of the Florida Department of Commerce will also be complied with.

VII. Screening

The permittee shall provide screening of the site through the use of aesthetically acceptable structures, vegetated earthen walls and/or existing or planted vegetation in accordance with Hillsborough County ordinances.

VIII. Potable Water Supply System

The potable water supply system shall be designed and operated in conformance with Chapter 17-22, FAC. Information as required in 17-22.108 shall be submitted to the Department prior to construction and operation. The operator of the potable water supply system shall be certified in accordance with Chapter 17-16, FAC.

IX. Transformer and Electric Switching Gear

The foundations for transformers, capacitors, and switching gear necessary to connect Big Bend Unit 4 to the existing distribution system shall be constructed of an impervious material and shall be constructed in such a manner as to allow complete collection and recovery of any spills or leakage of oily, toxic, or hazardous substances.

X. Toxic, Deleterious, or Hazardous Materials

The spill of any toxic, deleterious, or hazardous materials shall be reported in the manner specified by Condition XV.

XI. Construction in Waters of the State

A. Intake and Discharge

1. No construction on sovereignty submerged lands shall commence without obtaining lease or title from the Department of Natural Resources.

2. Construction of intake and discharge structures should be done in a manner to minimize turbidity. Turbidity screens should be used to prevent turbidity in excess of 50 JTUs above background beyond 150 meters from the dredging, pile driving, or construction site.

3. The construction methodology for the intake structure and screens shall be provided to the Department's Southwest District Office for review prior to construction.

4. All spoil shall be piped hydraulically or trucked to an upland disposal site of sufficient capacity to retain all material.

5. Effective stabilization of submerged bottom sediments at the Cooling Water System discharge should be achieved and maintained during the period of operation by the placement of concrete, riprap or other suitable material.

B. Relocation of Jackson Branch

1. An equivalent square footage of mangroves will be replanted in the new creek cut.

2. The new creek will have 6:1 side slopes from +1' MSL to -1' MSL.

3. Juncus sp. are to be planted at three foot intervals for the entire length of the relocated segment of the branch according to sound management practices.

4. The 90^{o} turn in the creek should be stabilized by riprap as well as the planting of a higher concentration of Juncus sp. on the outside of the turn.

5. The relocated cut is to be excavated and stabilized behind an upstream plug before being connected to the existing creek; conversely, the existing branch shall not be taken off line until the new cut is stabilized and JTUs are less than 25 in the new channel.

6. Permittee should submit to the Southwest District Office a replanting proposal at least 60 days prior to commencement of construction, including species, methods and placement details.

7. Permittee will monitor the outfall of Jackson Branch twice daily during construction for turbidity in JTUs and report these results weekly to the Southwest District Office.

C. Newman Branch

1. In the construction of the FGD/gypsum disposal areas, TECO shall not alter the ditch along the east side of Beach Road, as that ditch is tidally connected to Newman Branch.

2. To mitigate against the loss of the grass pond in the area designated as Phase I of the FGD/gypsum disposal area, TECO shall reconstruct the northernmost east-west drainage canal. The side slopes of this drainage canal from Beach Road to the eastern side of the Phase I area shall be reduced to at least 6:1 (horizontal to vertical) and planted with juncus sp. The remaining portion of the reconstructed ditch from the Phase I area east to U.S. Highway 41 shall have side slopes of at least 3:1 (horizontal to vertical). Such reconstruction shall be done in a manner to prevent violation of Section 17-3.121, F.A.C., Water Quality Criteria, and in accordance with the plans approved by the Department.

XII. FGD/Gypsum Landfill

The proposed FGD/gypsum landfill area shall be monitored and studied pursuant to a detailed groundwater testing and monitoring program as defined in Condition III D.

The results of the program will be used by the Department in determining whether TECO has affirmatively demonstrated that Florida Water Quality Criteria (Chapter 17-3, F.A.C) will not be violated.

If the Department determines that TECo has failed to affirmatively demonstrate that Florida Water Quality Criteria (Chapter 17-3, F.A.C) will not be violated, TECo shall within 90 days of such determination present to the Department a plan of correction (which may include, if appropriate, an impermeable liner) for review and approval by the Department and for timely implementation by TECO.

Construction of perimeter berms shall be in conformance with the provisions of Chapter 17-9, FAC, regarding earthen dams.

XIII. Transmission Lines

Directly associated transmission lines shall be constructed and maintained in order to minimize environmental impacts in accordance with Chapter 403, F.S.

XIV. Change in Discharge

All discharges or emission authorized herein shall be consistent with the terms and conditions of this certification. The discharge of any pollutant not identified in the application or any discharge more frequent than, or at a level in excess of, that authorized herein shall constitute a violation of the certification. Any anticipated facility expansions, production increases, or process modification which will result in new, different or increased discharges or expansion in steam generating capacity will require a submission of a new or supplemental application pursuant to Chapter 403, Florida Statutes.

XV. Noncompliance Notification

If, for any reason, the permittee does not comply with or will be unable to comply with any limitation specified in this certification, the permittee shall notify the Manager of DER's Southwest District Office by telephone during the working day in which permittee becomes aware of said noncompliance and shall confirm this situation in writing within seventy-two (72) hours supplying the following information:

a. A description and cause of noncompliance; and

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying event.

XVI. Facilities Operation

The permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this certification. Such systems are not to be bypassed without prior Department approval. The one exception is that during periods when light oil is used for ignition, the FGD system may be bypassed.

XVII. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact resulting from noncompliance with any limitation specified in this certification, including, but not limited to, such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying event.

XVIII. Right of Entry

The permittee shall allow the Secretary of the Florida Department of Environmental Regulation and/or authorized respresentatives, upon the presentation of credentials:

a. To enter upon the permittee's premises where an effluent source is located or in which records are required to be kept under the terms and conditions of this permit; and

b. to have access to and copy all records required to be kept under the conditions of this certification; and

c. to inspect and test any monitoring equipment or monitoring method required in this certification and to sample any discharge or pollutants; and

d. to assess any damage to the environment or violation of ambient standards.

XIX. Revocation or Suspension

This certification may be suspended or revoked pursuant to Section 403.512, Florida Statutes, or for violations of any Condition of Certification.

XX. Civil and Criminal Liability

This certification does not relieve the permittee from civil

or criminal responsibility or liability for noncompliance with any conditions of this certification, applicable rules or regulations of the Department, or Chapter 403, Florida Statutes, or regulations thereunder.

Subject to Section 403.511, Florida Statutes, this certification shall not preclude the institution of any legal action or relieve the permittee from any responsibilities or penalties established pursuant to any other applicable State Statutes or regulations.

XXI. Property Rights

The issuance of this certification does not convey any property rights in either real or personal property, tangible or intangible, nor any exclusive privileges, nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. The applicant will obtain title, lease or right of use to any sovereign submerged lands occupied by the plant, transmission line structures, or appurtenant facilities from the State of Florida.

XXII. Severability

The provisions of this certification are severable, and, if any provision of this certification or the application of any provision of this certification to any circumstances is held invalid, the application of such provision to other circumstances and the remainder of the certification shall not be affected thereby.

XXIII. Definitions

The meaning of terms used herein shall be governed by the definitions contained in Chapter 403, Florida Statutes, and any regulation adopted pursuant thereto. In the event of any dispute over the meaning of a term used in these general or special conditions which is not defined in such statutes or regulations, such dispute shall be resolved by reference to the most relevant definitions contained in any other state or federal statute or regulation or, in the alternative, by the use of the commonly accepted meaning as determined by the Department.

XXIV. Review of Site Certification

The certification shall be final unless revised, revoked or suspended pursuant to law. At least every five years from the date of issuance of this certification or any National Pollutant Discharge Elimination System Permit issued pursuant to the Federal Water Pollution Control Act Amendments of 1972 for the plant units, the Department shall review all monitoring data that has been submitted

to it during the proceeding five-year period for the purpose of determining the extent of the permittee's compliance with the conditions of this certification of the environmental impact of this facility. The Department shall submit the results of its review and recommendations to the permittee. Such review will be repeated at least every five years thereafter.

XXV. Modification of Conditions

The conditions of this certification may be modified in the following manner:

A. The Board hereby delegates to the Secretary the authority to modify, after notice and opportunity for hearing, any conditions pertaining to consumptive use of water, monitoring, sampling, groundwater, mixing zones, zones of discharge or variances to water quality standards.

B. All other modifications shall be made in accordance with Section 403.516, Florida Statutes.

XXVI. Flood Control Protection

The plant and associated facilities shall be constructed in such a manner as to comply with the Hillsborough County flood protection requirements.

XXVII. Effect of Certification

Certification and conditions of certification are predicated upon design and performance criteria indicated in the application. Thus, conformance to those criteria, unless specifically amended, modified, or as the Department and parties are otherwise notified, is binding upon the applicant in the preparation, construction and maintenance of the certified project. In those instances where a conflict occurs between the application's design criteria and the conditions of certificaiton, the conditions shall prevail.

XXVIII. Fine Mesh Screens

Fine mesh screens, similar to those tested and described by TECO in the 316 Demonstration, shall be installed on the intakes of Units 3 and 4 with the appropriate sprays and screen wash sluice return system to minimize entrainment. The screen wash sluice return system shall discharge to the east end of the canal north of the intake canal or to a location acceptable to the Department and EPA. TECO shall submit a plan to DER to explore the possibility of re-entrainment of ORC--returned organism.

XXIX. Noise

To mitigate the effects of noise produced by the steam blowout

of steam boiler tubes and by construction of the Phase IV FGD byproduct disposal area, TECo shall conduct public awareness campaigns prior to such activities to forewarn the public of the estimated time and duration of the noise.

XXX. Variances

TECO is granted variances for discharges of boiler blowdown, FGD system blowdown and bottom ash pond blowdown pursuant to Sections 403.201 and 403.511(2) F.S., for a period of two years after the start of commercial operation for the following parameters:

a. Arsenic - 17-3.061(2)(a)
b. Cadmium - 17-3.121(9).
c. Chromium - 17-3.061(2)(d)
d. Copper - 17-3.121(11)
e. Iron - 17-3.121(16)
f. Mercury - 17-3.121(18)
g. Nickel - 17-3.121(19)
h. Selenium - 17-3.121(26)

During the period that the variance is in effect, TECO shall (1) determine the concentrations of the above metals as well as lead in the three discharge streams; (2) operate the FGD blowdown treatment system so as to minimize the metal content of the discharge from the system; (3) explore the practicability of treating the boiler blowdown in the FGD treatment system when there is capacity in the system to accomodate that blowdown; and (4) submit reports of the above studies and analyses after the first year and at least twenty months after the start of commercial operation of Unit 4. Based upon data from existing Units 1, 2, and 3 contained in the application, during the period of the variance, the quality of the boiler blowdown shall not exceed the following:

Arsenic	0.2	mg/l
Cadmium	0.005	mg/l
Chromium	0.065	mg/l
Copper	0.04	mg/l
Iron	0.001	mg/l
Lead	0.05	mg/l
Mercury	0.007	mg/l
Nickel	0.096	mg/l
Selenium	0.032	mg/l

Upon receipt of the aforementioned reports, the Secretary shall determine whether the variances should be renewed and may impose appropriate conditions to minimize the discharges and their impacts.

BEFORE THE GOVERNOR AND CABINET
OF THE STATE OF FLORIDA

In The Matter Of: TAMPA ELECTRIC COMPANY POWER PLANT SITING APPLICATION, BIG BEND STATION UNIT #4 P.A. 79-12.) Case No. 80-1723

The following persons were present and participated in the disposition of this matter:

Honorable Bob Graham
Governor

Honorable George Firestone
Secretary of State

Honorable Jim Smith
Attorney General

Honorable Bill Gunter
Treasurer and Insurance Commissioner

Honorable Gerald A. Lewis
Comptroller

Honorable Doyle Conner
Commissioner of Agriculture

Honorable Ralph D. Turlington
Commissioner of Education

FINAL ORDER ADOPTING HEARING OFFICER'S RECOMMENDATION OF CERTIFICATION SUBJECT TO CONDITIONS

BY THE GOVERNOR AND CABINET:

The Governor and Cabinet, having heard presentation by the parties, reviewed the Recommended Order dated July 21, 1981, (attached and incorporated as Exhibit 1) as well as the special and general conditions referred to therein and attached thereto as Appendix I, and being otherwise fully advised herein, it is,

ORDERED:

1. The Recommended Order is approved and adopted.

2. The general and special conditions referenced therein and attached thereto as Appendix I are approved and adopted, and the certification of Big Bend Station Unit #4 is made specifically subject to those general and special conditions.

DONE AND ENTERED this 17 day of August 1981, subsequent to a vote of the Governor and Cabinet at a duly constituted Cabinet meeting of August 4, 1981.

FOR THE GOVERNOR AND FLORIDA CABINET:

BOB GRAHAM
Governor

FILING AND ACKNOWLEDGEMENT

FILED, on this date, pursuant to S120.52 (9), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

D. Quigg for Linda Bevard 8-17-81
Clerk Date

VOTE:

FOR	AGAINST	ABSENT
Honorable George Firestone		Honorable Ralph D. Turlington
Honorable Jim Smith		Honorable Gerald A. Lewis
Honorable Bill Gunter		
Honorable Doyle Conner		

Copies furnished:

To all parties of record

STATE OF FLORIDA
DIVISION OF ADMINISTRATIVE HEARINGS

IN RE: TAMPA ELECTRIC COMPANY POWER PLANT SITING APPLICATION, BIG BEND STATION UNIT 4 P.A. 79-12

Case No. 80-1723

RECOMMENDED ORDER

Pursuant to notice, an administrative hearing was held before Diane D. Tremor, Hearing Officer with the Division of Administrative Hearings, on June 23, 1981, at the Hillsborough County Courthouse in Tampa, Florida. The issue for determination at the hearing was whether the power plant siting application of Tampa Electric Company for the construction and operation of an electrical generating facility known as Big Bend Unit Number 4 proposed for Hillsborough County should be granted.

APPEARANCES AT THE HEARING

For TECO:
Lawrence N. Curtin
and Robert P. Murray
Holland and Knight
Post Office Drawer BW
Lakeland, Florida 33802

For DER:
Louis F. Hubener
Assistant General Counsel
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

For SWFWMD:
Thomas E. Cone, Jr.
Blain and Cone, P.A.
202 Madison Street
Post Office Box 399
Tampa, Florida 33601

OTHER APPEARANCES OF RECORD

For Department of Veteran and Community Affairs:
C. Laurence Keesey
Room 204, Carlton Building
Tallahassee, Florida 32301

For Florida Public Service Commission:
Arthur C. Canaday
General Counsel
Public Service Commission
101 East Gaines Street
Tallahassee, Florida 32301

Prentice C. Pruitt
Public Service Commission
101 East Gaines Street
Tallahassee, Florida 32301

Exhibit 1

INTRODUCTION

In August of 1980, Tampa Electric Company (TECO) filed with the Department of Environmental Regulation its application for power plant site certification for Big Bend Station Unit 4 in Hillsborough County, Florida. TECO has also requested certain variances from the surface water and ground water quality standards of the Department of Environmental Regulation (DER) and the surface water quality standards and noise level standards of the Hillsborough County Environmental Protection Commission. This Commission made no appearance at the hearing. A land use hearing was held on November 17, 1980, and the Governor and Cabinet, sitting as the Board under Chapter 403, Part II, Florida Statutes, entered an Order on February 19, 1981, concluding that the proposed site of Big Bend Unit No. 4 is consistent with existing land use plans and zoning ordinances and regulations.

Prior to the hearing, the parties filed with the undersigned a Prehearing Stipulation containing certain stipulated facts. All issues concerning certification for the proposed facility were settled by agreement of the parties prior to the hearing. Subsequent to the hearing, proposed findings of fact, proposed conclusions of law and a proposed recommendation was filed with the undersigned. This document constituted the joint effort of all parties with the exception of the Florida Public Service Commission which waived further participation in this proceeding after its order certifying the need for Big Bend Unit No. 4, pursuant to Section 403.519, Florida Statutes.

At the administrative hearing held on June 23, 1981, TECO presented the testimony of five witnesses and its Exhibits 1 through 29 were received into evidence. The witnesses presented by TECO were John B. Ramil, an engineer in the Environmental

Planning Department at TECO; Wallace Wilcher, TECO's superintendent of the Big Bend Station; Steven Marks, accepted as an expert witness in the area of air quality and dispersion modeling; Stephen Jenkins, accepted as an expert witness in the area of pollution control, specifically, flue gas desulfurization and electrostatic precipitators; and Jerry L. Williams, manager of environmental planning for TECO. The DER presented the testimony of Hamilton S. "Buck" Oven, DER's administrator of power plant sitings, transmission line sitings and the review section of the Bureau of Permitting. Received into evidence were DER's Exhibits 1 through 3.

FINDINGS OF FACT

Upon consideration of the stipulations of fact and the oral and documentary evidence adduced at the hearing, the following relevant facts are found:

(1) The applicant is a duly authorized and registered Florida corporation engaged in the business of producing electrical power for sale. It proposes to construct and operate a 486 megawatt (gross) coal fired electrical generating facility immediately adjacent to its existing three coal fired units known as Big Bend Units 1, 2 and 3. The proposed site is located on the eastern shore of Tampa Bay near the mouth of the Hillsborough Bay (designated as a Class III waterbody), and is five miles north of Ruskin, ten miles south of Tampa and fourteen miles from St. Petersburg across Tampa Bay. As noted, the proposed unit will be the fourth unit at the applicant's existing Big Bend site and will share many of the service facilities with the existing units. The shared facilities include the coal dock, loading facilities, the coal storage area, the switchyard, and the existing wastewater treatment pond and spray irrigation field. The existing transmission line towers will

obtained off premises and no production wells will be owned or operated by Tampa Electric Company in connection with Unit No. 4. For some purposes, the applicant will use the lowest quality of water available from the County before drawing from the public potable water supply.

(5) Proposed Unit No. 4 will utilize a once through condenser cooling system and fine mesh screens on the intake structures will be installed for existing Unit No. 3 and the proposed Unit No. 4. Saltwater for the cooling system will be withdrawn from the existing intake canal and will be returned to the existing discharge canal. The plant cooling water flow will be pumped from the intake structure screen wells through the plant and discharged to the discharge canal where the flow from Unit No. 4 will combine with the existing flow from Units 1, 2 and 3. There is sufficient water available in Tampa Bay to supply the volume requirements of the Unit No. 4 once through cooling system. The fine mesh screens installed on the intake structures for existing Unit No. 3 and proposed Unit No. 4 will minimize the impact of entrainment and impingement on organisms in the area. A system will be provided to return organisms impinged on the fine mesh screen structures to a location suitable to the Department of Environmental Regulation and the United States Environmental Protection Agency.

(6) The cooling water passing through the plant will increase in temperature to an expected level of 17 degrees Fahrenheit above the temperature of the ambient intake cooling water prior to ultimate dishcharge. This 17 degree temperature rise is the design maximum for the unit at maximum load conditions. The heated water will be discharged to the existing station discharge canal and will then flow in a westerly direction into the Bay where it will mix with ambient water and continue to reduce in temperature.

(7) Tampa Electric Company performed a 316 Demonstration in accordance with Section 316 of the Clean Water Act of 1977, to assess the impacts of the thermal discharge from the plant on organisms in the Bay. In addition, the effects of the cooling water intake structure on impingement and entrainment of organisms in the intake water were assessed. These reports were submitted to the Department of Environmental Regulation and the Environmental Protection Agency for evaluation. The Department of Environmental Regulation has approved the use of a once through cooling system with fine mesh screens on the intake structures of Unit No. 3 and Unit No. 4. DER recommends establishment of a thermal mixing zone in accordance with Section 17-3.05, Florida Administrative Code, encompassing an area not to exceed 4980 acres. The conditions of certification proposed by DER require further validation of the size of the mixing zone after Unit No. 4 begins operations. The Environmental Protection Agency has tentatively determined that the use of fine mesh screen technology on existing Unit No. 3 and proposed Unit No. 4 constitutes the best technology available for minimizing adverse environmental impacts for the purposes of Section 316(b) of the Clean Water Act of 1977, and has also tentatively determined that the impact of the thermal discharge from proposed Unit No. 4 is within acceptable limits under Section 316(a) of the Clean Water Act of 1977.

(8) The unit will utilize chlorine in the circulating water system to control the growth of marine organisms in the condenser and intake tunnel. The control of this growth, or biofouling, is necessary to ensure that the flow of the cooling water and transfer of heat is not excessively impeded. The chlorine which is inserted into the circulating system is ultimately discharged to the discharge canal and then to the Bay.

To ensure compliance with Florida Class III water quality standards applicable to discharges of chlorine, the Department of Environmental Regulation recommends in its conditions of certification that an effluent limitation of 0.2 milligrams per liter be imposed and a mixing zone encompassing 6.1 acres be established.

(9) Process waste streams associated with Unit No. 4 will include the boiler blowdown, the bottom ash system blowdown and the flue gas desulfurization system blowdown. These three waste streams will be discharged to the circulating water system and ultimately to the discharge canal currently in existence. Waste streams which are not discharged to surface waters include the various plant drains and waste waters from various plant washing operations that will take place. These waste streams will be collected and transported to the existing waste water pond and, from there, the waste water will be recycled to the extent possible. Final disposal of this waste water will be through the existing stray irrigation system. The existing waste water pond and spray irrigation field are designed to accommodate the additional use. Runoff from the coal pile facility will be contained on the site and transported to the existing waste water pond.

(10) A drainage system is provided for the plant for the runoff from the materials storage areas, the byproduct storage areas, and the construction activity associated with the main structure at Big Bend Unit No. 4. Materials and by-product storage area runoff will be intercepted and contained on site. Runoff from the Big Bend Unit No. 4 main construction area will be contained and pumped to the waste water pond. Other areas subject to construction will employ mitigative measures defined by the conditions of certification attached hereto.

APPENDIX I

Conditions of Certification

State of Florida Department of Environmental Regulation
Tampa Electric Company
Big Bend Unit 4
PA 79-12
CONDITIONS OF CERTIFICATION (Revised 6-2-81)

Table of Contents

1. Receiving Body of Water (RBW)

The receiving body of water has been determined by the Department to be those waters of the Tampa Bay and any other waters affected which are considered to be waters of the State within the definition of Chapter 403, Florida Statutes.

2. Point of Discharge (P.O.D.)

The point of discharge will be determined by the Department to be where the effluent physically enters the waters of the State.

3. Thermal Mixing Zone

The instantaneous zone of thermal mixing for the cooling system shall not exceed an area of 4980 acres. The temperature at the point of discharge into the Tampa Bay shall not be greater than 109 degrees F. The temperature of the water at the edge of the mixing zone shall not exceed the limitations of Paragraph 17-3.05(1)(d). The permittee shall validate the size of this mixing zone by submission of a verified or calibrated thermal dispersion model at least six months prior to commencement of operation. The Department and TECO shall agree to a program for selecting, verifying and utilizing an appropriate model.

4. Chemical Wastes

All discharges of low volume wastes (demineralizer regeneration, floor drainage, lab drains and similar wastes) shall comply with Chapter 17-3. If violations of Chapter 17-3 occur, corrective action shall be taken. These wastewaters shall be discharged to an adequately sized and constructed treatment facility. Preoperational and operational metal cleaning wastes, low volume wastes, boiler fireside wash, air preheater wash, and stack wash shall be disposed of in an adequately sized percolation pond and spray irrigation facility.

5. Coal Pile

Coal pile runoff shall be disposed of in the wastewater treatment/spray irrigation system and shall not be directly discharged to surface waters.

6. Chlorine

The concentration of total residual chlorine discharged from Unit 4 shall not exceed 0.2 mg/l at the POD

nor 0.01 mg/l beyond an instantaneous mixing zone of 6.1 acres. The condensers for Unit 4 shall not be chlorinated more than two hours per day and shall not be chlorinated simultaneously with any other unit.

7. pH

The pH of the combined discharges shall be such that the pH be within the range of 6.0 to 8.5.

8. Polychlorinated Biphenyl Compounds

There shall be no net discharge of polychlorinated biphenyl compounds.

9. FGD Chloride Bleedstream

The bleedstream from the FGD system shall be treated to control pH, turbidity, solids and toxic metals prior to discharge into the cooling water system. The following effluent limitations will apply:

Effluent	Daily Maximum	Maximum 30-Day Daily Average
TSS	100 mg/l	30 mg/l
Oil and Grease	20 mg/l	15 mg/l
pH	6-9	6-9

The design plans and specifications of the treatment system shall be submitted to the Department for review and approval prior to construction.

10. Boiler and Bottom Ash Sluice System Blowdown

Blowdown from the boiler and from the bottom ash sluice system shall be treated as appropriate prior to discharge to the cooling water system. The following effluent limitations shall apply:

Effluent	Daily Maximum	Maximum 30-Day Daily Average
TSS	100 mg/l	30 mg/l
Oil and Grease	20 mg/l	15 mg/l
pH	6-9	

TECO shall provide the dimensions of the bottom ash system settling pond and provide calculations demonstrating that sufficient residence time will be provided to achieve the above limitations.

Parameter	Location	Sample Type	Frequency
Flow, Cooling	Intake	Pump Log	Continuous
Flow, Bottom Ash	Prior to CWS	Recorder	Continuous
Flow, Boiler Blowdown	Prior to CWS	Daily Log	Daily
Flow, FGD Bleed	Prior to CWS	Recorder	Continuous
pH	CWS and prior to CWS on FGD Bleed Boiler & Bottom Ash Blowdown	Grab "	Two per Week
Temperature	CWS Outfall	Recorder	Continuous
TSS	Bottom Ash Blowdown, FGD Bleed, & Boiler Blowdown	Grab	Two per Week Two per Month
Chlorine, Total Residual	Outfall	Multiple Grab	Weekly
Oil and Grease	Boiler Blowdown Bottom Ash Blowdown and FGD bleed	Grab	Two per Month
Metals	Intake, Outfall FGD Bleed Stream Bottom Ash Blowdown & Boiler Blowdown Prior to discharge to CWS	Two-Grab composite, not less than two hours between samples	Two per Month for the first year, then monthly thereafter
Arsenic	"		"
Cadmium	"		"
Iron	"		"
Lead	"		"
Mercury	"		"
Selenium	"		"
Zinc	"		"
Copper	"		"
Chromium	"		"
Nickel	"		"

2. Biological Monitoring

a. Thermal Studies

Sampling shall be done on a bi-monthly basis commencing one month after certification and shall continue for a period of one year after Unit 4 is on-line. Such sampling shall consist of a baseline survey and an intensive survey. Sampling methodology shall be the same as that in the 1979 aquatic biology studies. Deviations from that methodology shall be approved by the DER.

All raw data shall be available upon request by DER. At the end of the first year of post-operational study, the Department shall review all of the data in the form of an annual report and shall determine if

*CWS - Cooling Water System

Revised 6/2/81

mitigative action must be taken by TECO and shall determine if the impacts of the thermal discharge are in compliance with the requirements of Section 17-3. 05(1)(f) and if the thermal mixing zone granted by Condition II.A.3 is appropriate. If the data are sufficient to convince the Department that severe thermal effects have been confined to an acceptably limited area, the monitoring studies shall be terminated. If not, the studies shall be continued until such time as the thermal impact can be thoroughly evaluated.

(1) Baseline Survey

In order to put the 1979 benthic study in proper ecological perspective regarding the regular cyclical biotic fluctuations which are known to occur in Tampa Bay, the following program shall be implemented:

i. Benthic macroinvertebrate sampling shall be carried out on a bi-monthly basis one month after the time of enactment of certification until a period of 12 months prior to commencement of operation of Unit 4. Five stations corresponding to stations 5, 6, 8, 11, and 12 of the 1979 Benthic Ecology Study* shall be sampled according to the methods outlined in the TECo benthic report. Deviations from that methodology shall be approved by the DER.

ii. Water quality parameters shall be monitored during the benthic sampling program on a bi-monthly basis at each of the above stations. Parameters to be examined shall include salinity, dissolved oxygen, turbidity, and water temperature (top and bottom).

iii. A sediment analysis shall be carried out at each of these stations on a bi-monthly basis corresponding to the benthic sampling according to the methods outlined in the 1979 Benthic Study. If sediment samples show little bi-monthly variability, TECo may request a less rigorous sampling frequency.

(2) Intensive Survey

In order to adequately assess the thermal impact of Big Bend Unit 4 in conjunction with the combined plume discharge from Units 1, 2, and 3, the following biological monitoring program shall be implemented one year before and shall continue for one year after commencement of operation of Unit 4. A proposal for these intensive studies shall be prepared by the applicant and shall be submitted to DER for approval at least 18 months prior to commercial operation of Unit 4. Such a proposal shall reflect the methodologies employed during the 1979 study so that both data sets can be compared for evaluation of thermal impact from Unit 4.

*"A Study of Thermal Effects on Benthic Communities of Big Bend, Tampa Bay (Florida)", July 1980. TECO

Revised 6/2/81

i. The applicant shall collect bi-monthly benthic, samples. The stations to be chosen for the Benthic sampling program shall be taken from the 1979 Benthic Ecology Study plus three additional stations. These three stations shall be located on a transect running into the bay from station 8, paralleling stations 5, 6, and 7 of the 1979 study. Water quality parameters and sediment samples shall be collected and analyzed as in the baseline survey.

ii. Stations 1 and 2 shall be deleted from the proposed studies.

iii. Trammel (or gill net) and trawl samples shall be taken each month during the day and at night in the vicinity of the embayment--Apollo Beach pass. If possible, night sampling shall be during a flood tide. Additionally, monthly seine samples shall be collected in the area during the day.

b. Entrainment

1. In order to evaluate the entrainment mortality at the Big Bend Station, TECO shall conduct a Fine Mesh Screen Survivability Study (similar to the 1980 Prototype FMS study) for one full spawning period (March through September). Sampling for the study will be conducted at three locations pertaining to Unit 4:

Station 1: Front of screen after organisms are impinged and washed to the screen return system.

Station 2: Behind the screen.

Station 3: At the discharge point in the Organism Return Canal (ORC).

Stations 1 and 2 will be sampled simultaneously to estimate the total number of organisms entrained at the plant. Initial and latent mortality tests will be conducted on organisms collected at stations 1 and 3 only. A detailed scope of study shall be submitted by TECO at least twelve months prior to the commencement of commercial operation of Unit 4.

III. Water Use

A. Use of Water

TECO shall use the lowest quality water which it has the ability to use. To the extent that a dependable supply of non-potable water can be provided, TECO shall use the non-potable water in lieu of the potable water from the public

to it during the proceeding five-year period for the purpose of determining the extent of the permittee's compliance with the conditions of this certification of the environmental impact of this facility. The Department shall submit the results of its review and recommendations to the permittee. Such review will be repeated at least every five years thereafter.

XXV. Modification of Conditions

The conditions of this certification may be modified in the following manner:

A. The Board hereby delegates to the Secretary the authority to modify, after notice and opportunity for hearing, any conditions pertaining to consumptive use of water, monitoring, sampling, groundwater, mixing zones, zones of discharge or variances to water quality standards.

B. All other modifications shall be made in accordance with Section 403.516, Florida Statutes.

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The plant and associated facilities shall be constructed in such a manner as to comply with the Hillsborough County flood protection requirements.

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Certification and conditions of certification are predicated upon design and performance criteria indicated in the application. Thus, conformance to those criteria, unless specifically amended, modified, or as the Department and parties are otherwise notified, is binding upon the applicant in the preparation, construction and maintenance of the certified project. In those instances where a conflict occurs between the application's design criteria and the conditions of certificaiton, the conditions shall prevail.

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Fine mesh screens, similar to those tested and described by TECO in the 316 Demonstration, shall be installed on the ~~T~~intakes of Units 3 and 4 with the appropriate sprays and screen wash sluice return system to minimize entrainment. The screen wash sluice return system shall discharge to the east end of the canal north of the intake canal or to a location acceptable to the Department and EPA. TECO shall submit a plan to DER to explore the possibility of re-entrainment of ORC--returned organism.

XXIX. Noise

To mitigate the effects of noise produced by the steam blowout