

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.

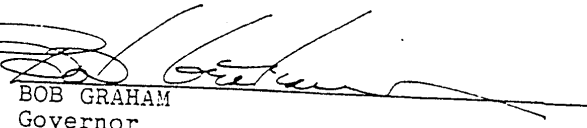
DONE AND ENTERED this 17 day of August 1981, subsequent
to a vote of the Governor and Cabinet at a duly constituted
Cabinet meeting of August 4, 1981.

FILING AND ACKNOWLEDGEMENT

FOR THE GOVERNOR AND FLORIDA CABINET:

FILED, on this date, pursuant to S120.52 (9),
Florida Statutes, with the designated Depart-
ment Clerk, receipt of which is hereby acknow-
ledged.

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


BOB GRAHAM
Governor

VOTE:

FOR

AGAINST

ABSENT

Honorable George
Firestone
Honorable Jim Smith
Honorable Bill Gunter
Honorable Doyle Conner

Honorable Ralph D. Turlington
Honorable Gerald A. Lewis

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 33302

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

For SNFWMD: 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

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" Owen, 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

be used by Unit No. 4, but approximately 3,000 feet of conductors will be installed to connect the new unit to the existing switchyard located just east of the existing station. Other associated facilities include storage and handling facilities for limestone necessary to operate the flue gas desulfurization system, storage and disposal areas for the by-product produced by that system and storage and disposal for ash. A spur from the Seaboard Coast Line Railroad to the site was constructed for previous projects and will be used in connection with construction of proposed Unit No. 4. An additional spur will be constructed entirely within the site boundaries and no offsite rail construction will be necessary.

2. As a primary energy source, proposed Unit No. 4 will burn high sulfur bituminous coal. The unit will be equipped with an electrostatic precipitator for the purpose of controlling the emission of particulates, and will also be equipped with a flue gas desulfurization system for the purpose of controlling emissions of sulfur dioxide. These pollution control devices have been determined by the Department of Environmental Regulation to constitute the "best available control technology." In order to prevent significant deterioration of air quality from the operation of Unit No. 4, various alternative strategies have been studied by TECO and its consultants. These studies demonstrate that the most economical strategy which will comply with state and federal regulations calls for the use of a 99.74% efficient electrostatic precipitator for the removal of particulate emissions, boiler and burner design for oxides of nitrogen and carbon monoxide and a system for the removal of sulfur dioxide which includes a flue gas desulfurization system, coal washing and retention of certain of the sulfur dioxide in the ash during combustion. The entire sulfur dioxide control system

will provide a removal efficiency of 90 percent. Tampa Electric Company and its consultants have modeled and analyzed the projected effects of air pollution from proposed Unit No. 4. The evidence developed from such studies shows that the operation of Unit No. 4 as proposed pursuant to the attached conditions of certification will comply with State and federal standards for ambient air quality and the prevention of significant deterioration of air quality.

(3) Big Bend Unit No. 4 will generate three basic byproduct materials. These are fly ash, bottom ash and flue gas desulfurization byproduct. The fly ash generated by Unit No. 4 will be collected in the electrostatic precipitator prior to the boiler gas being discharged to the atmosphere. This material will be marketed as a raw material for the production of cement. However, in the event no market is available, provisions have been made to store fly ash at the site of Unit No. 4. The unsold fly ash will be sluiced to a settling pond and then ultimately transported to the final storage area. Bottom ash is the material resulting from combustion of coal which is collected at the bottom of the boiler. Bottom ash will be sluiced to a bottom ash area which will consist of a pond for settling the material and a final disposal area. The flue gas desulfurization system byproduct, a commercial grade gypsum, will be stored as necessary on site. It is anticipated that this will be a marketable product.

(4) Fresh water necessary to operate the facility, other than for cooling purposes, will be obtained from Hillsborough County. This fresh water will be used to supply make-up water to the boiler and in the flue gas desulfurization system. In addition, fresh water will be used to sluice ash and to service the sanitary facilities for the plant, for fire protection and for other limited miscellaneous uses. All such water will be

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 discharge. 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.

(11) A potential concern exists that groundwater flow from the waste water treatment facilities and byproduct storage areas may result in leaching of pollutants into the groundwaters of the State. The groundwater at the existing site has been designated as Class I-B waters. The conditions of certification include a groundwater monitoring program designed to assess the ambient water quality and identify the potential impacts of leachate contamination with respect to the State groundwater quality standards.

(12) The impact to the existing water quality as a result of the discharge of the boiler blowdown, bottom ash blowdown and flue gas desulfurization system blowdown streams through the circulating water system to the discharge canal and ultimately to the Bay will be undetectable across the plant, from the point where the circulating water is taken into the plant, combined with the three streams and released at the point of discharge. There will be no measurable change in water quality as a result of these discharges.

(13) The flue gas desulfurization blowdown stream and the bottom ash blowdown stream will be subject to treatment to meet State and federal effluent limitations. The flue gas desulfurization system will be treated for pH adjustment, suspended solids removal and oil and grease removal prior to discharge. The bottom ash system will include an adequately sized pond to remove suspended solids so that the effluent limitations will be met. Boiler blowdown will not require treatment to meet applicable effluent limitations. In addition to the treatment methods proposed above, Tampa Electric Company evaluated other options relating to the treatment of these streams to meet water quality standards for these discharges. Alternatives investigated included a zero discharge option, further recycling of the waste streams and

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.

various treatment methods to remove heavy metals prior to discharge. The cost of these alternatives ranges from \$1.2 million to \$1.8 million. Even with the treatment systems in place, there will be no detectable change in water quality from the point of intake to the point of discharge, after addition of the discharges from the three identified waste streams. Tampa Electric Company concluded that based upon these factors, and primarily upon the fact that even with additional treatment there will be no detectable change in water quality from the point of intake to the point of discharge, the expenditures are not justified in this circumstance.

(14) Tampa Electric Company requested variances from certain regulations of the Department of Environmental Regulation relating to ground and surface water quality standards. The request for variances from water quality standards for groundwater discharges contained in Rules 17-3.071 and 17-3.101(1),(3),(4), (8), (9) and (13), Florida Administrative Code, can be resolved by defining a zone of discharge and implementation of the groundwater monitoring program as outlined in the attached conditions of certification. This variance request was therefore withdrawn by Tampa Electric Company at the hearing. The variance request from surface water quality standards contained in Rules 17-3.061(2)(a) (arsenic), 17-3.121(9) (cadmium), 17-3.061(2)(d) (chromium), 17-3.121(11) (copper), 17-3.121(16) (iron), 17-3.121(18) (mercury), 17-3.121(19) (nickel), and 17-3.121(26) (selenium), Florida Administrative Code, for the discharges of boiler blowdown, bottom ash blowdown and flue gas desulfurization system blowdown are recommended by the Department of Environmental Regulation to be granted for a period of two years after the start of commercial operation during which time TECO shall institute a study program, including monitoring, in accordance with the attached conditions of certification. The request for variances from surface water quality standards

contained in Rules 17-3.061(2)(h) and 17-3.121(7)(lead), 17-3.051 (minimum criteria) and 17-3.061(2) (general prohibition), Florida Administrative Code, were withdrawn by TECO at the hearing.

(15) Tampa Electric Company also requested variances from the Hillsborough County Environmental Protection Commission rules relating to noise level standards and surface water quality standards. No representative of the Hillsborough County Environmental Protection Commission appeared at the hearing.

(16) A variance from the noise level standards contained in the Hillsborough County Environmental Protection Commission's Rule 1-10.04A is requested for the steam blowing operation that is necessary prior to commercial operation of proposed Unit No. 4. This procedure is recommended by the equipment manufacturer to minimize damage to the steam turbine resulting from debris which may accumulate during construction of the unit. The noise levels produced from this steam venting operation vary from unit to unit and it is impossible to accurately predict what the noise levels will be. Violation of the provisions of the Commission's Rule 1-10.04A for short durations during the operation is possible. Tampa Electric Company will institute a notification procedure designed to inform residents in the area that the operation will occur over a short period of time. No adverse impact to residents and the environment in the affected area is anticipated and only minor inconvenience to the residents is expected to occur. The entire operation occurs only intermittantly prior to initial start up of the unit and should encompass a period not to exceed thirty (30) days from the start of the steam blowing operation.

(17) The surface water quality rules from which TECO seeks a variance from the Hillsborough County Environmental Protection Commission relate to the standards for chromium, lead, iron and arsenic for the discharges of boiler blowdown, bottom ash blowdown and flue gas desulfurization system blowdown from

Unit No. 4. This variance request is made for the life of the certification for Unit No. 4. The evidence demonstrates that the three waste streams indentified above are discharged to the circulating water system and then to the discharge canal existing at the facility. The request for a variance from these pollutant parameters is based upon data compiled by the applicant and submitted to the Department of Environmental Regulation which shows that ambient water quality existing in Hillsborough Bay contains concentrations of the identified parameters (chromium, iron, and arsenic) in amounts which are already above applicable Hillsborough County Enviornmental Protection Commission surface water quality standards for Hillsborough Bay. The data concerning lead concentrations is inconclusive. The evidence demonstrates that with the exception of lead, the maximum values contained in the applicant's sampling data for chromium, iron, and arsenic are all above the applicable water quality standards.

(18) Access roads on the site which have been constructed for previous projects at the Big Bend Station are capable of assimilating additional traffic caused by the Unit No. 4 construction activities.

(19). There is very little opportunity for public access to the site during construction and operation. The vehicular traffic will be intercepted and controlled by a guard system at the entrance to the site on a 24-hour basis. In addition, all other fenced areas will be equipped with locked gates and patrolled by roving guards.

(20) Except for intermittent traffic congestion, plant construction is not expected to have an impact on the nearest residential communities of Apollo Beach and Adamsville.

(21) There are no historic, scenic, cultural, or natural areas or state parks and recreation areas which will be disturbed by the construction of Big Bend Unit No. 4.

(22) The construction of Unit No. 4 and its related facilities will involve the loss of approximately 272 acres of vegetation and habitat on the eastern shore of Hillsborough Bay, some of which has been previously disturbed by construction activities associated with existing Units 1, 2 and 3. Noise levels predicted as a result of construction activities are below the maximum permissible sound levels in accordance with the Hillsborough County noise code limit of 60 dBA during the day-time in a residential area. The majority of construction will take place during daylight hours and no significant noise impact is expected at the surrounding residences from onsite construction activities. Most bird and animal species located near the site are expected to have adjusted to the existing sound levels resulting from Units 1, 2 and 3 operation. Although birds and animals nearest the plant may experience periodic "startle reaction" and move away from the noise source, no measurable effects of construction noise levels on organisms occurring near or beyond the immediate site location are anticipated. The area wide effect of construction and operation on wildlife and vegetation is not expected to be significant. Appropriate steps have been proposed to minimize the environmental impact of construction and operation of Unit No. 4.

(23) The Florida Public Service Commission has determined that there is a need in the State of Florida for the electric power to be produced by proposed Big Bend Unit No. 4.

(24) The Tampa Bay Regional Planning Council has generally concluded that there are no over-riding objections to the proposal for Unit No. 4 so long as adequate steps are taken to mitigate problems associated with air and water pollution.

(25) The Hillsborough County City-County Planning Commission has commented on the project and offered no objections to it.

(26) The Division of Archives, History and Records Management concluded that the proposed coal fired power plant is unlikely to affect any archeological or historical sites.

(27) The National Marine Fisheries Service has made several recommendations regarding once through cooling concerns including the use of fine mesh screens, but does not object to the overall project. The United States Fish and Wildlife Service expressed concerns similar to those of the National Marine Fisheries Service and also does not object to the overall project.

(28) The Department of Veteran and Community Affairs has concluded that the application is generally compatible with the State Comprehensive Plan.

(29) The Department of Environmental Regulation has made no recommendation concerning the grant or denial of the variance requests from Hillsborough County Environmental Protection Commission Rules.

(30) The Department of Environmental Regulation, the Department of Veteran and Community Affairs and the Southwest Florida Water Management District have all recommended certification of the proposed Big Bend Unit No. 4 subject to the stipulated conditions of certification which are attached to this Recommended Order.

(31) At the conclusion of the site certification hearing, members of the general public were given the opportunity to comment upon the application for site certification. No public testimony was offered.

CONCLUSIONS OF LAW

This proceeding was conducted pursuant to the "Florida Electrical Power Plant Siting Act," Chapter 403, Part II, Florida Statutes, and Chapter 17-17, Florida Administrative Code, to consider Tampa Electric Company's application for site certification of proposed Big Bend Unit No. 4. In accordance with Chapters 403

and 120, Florida Statutes, and Chapter 17-17, Florida Administrative Code, notice was given to all persons and parties entitled thereto, as well as to the general public.

The purpose of the site certification hearing was to receive testimony and evidence concerning whether the location and operation of the proposed facilities will produce minimal adverse effects on human health, the environment, the ecology of the land and its wildlife, and the ecology of State waters and their aquatic life in an effort to fully balance the increasing demand for electric power plant location and operation with the broad interests of the public. Section 403.502, Florida Statutes.

The record of this proceeding establishes that all the necessary and required governmental agencies were parties to this proceeding and that all required reports and studies were completed and presented to the Department of Environmental Regulation. These include the report of the Department of Veteran and Community Affairs as to the compatibility of the proposed electrical power plant with the State Comprehensive Plan (§403.507(1)(a), Fla. Stats.), the Florida Public Service Commission's report as to the present and future need for the electrical generating capacity to be supplied by the proposed plant (§403.507(1)(b), Fla. Stats.), and the report of the Southwest Florida Water Management District as to its position on the impact of the proposed facility on water resources (Rule 17-17.04(5), Fla. Admin. Code). The record further establishes that the Department of Environmental Regulation conducted or contracted for the enumerated studies required by Section 403.507(2), Florida Statutes, and completed its report and recommendations with respect thereto. The Department of Environmental Regulation recommends certification of proposed Big Bend Unit No. 4 subject to the attached conditions of certification which have been accepted by the applicant Tampa Electric Company.

The oral and documentary evidence adduced at the hearing demonstrate that the operational safeguards for the proposed Unit No. 4 are technically sufficient for the welfare and protection of the citizens of Florida. If performed in accordance with the attached conditions of certification, the construction, operation and location of the proposed new unit are expected to produce minimal adverse effects on human health, the environment, the ecology of the land and its wildlife and the ecology of State waters and their aquatic life. Certification is consonant with the premise of abundant, low-cost electrical energy. If certified pursuant to the attached conditions, proposed Big Bend Unit No. 4 will comply with pertinent State and federal regulations concerning ambient air quality, the prevention of significant deterioration of air quality and the application of the "best available control technology."

The applicant's request for a variance from the DER's surface water quality standards for discharges of boiler blowdown, bottom ash blowdown and flue gas desulfurization system blowdown, if carried out in accordance with page 23 of the attached conditions of certification, is supported by the evidence adduced at the hearing. This variance request should be granted for a period of two years.

In order to minimize damage to the proposed unit's steam turbine, it is necessary that TECO perform an operation known as steam blowing or steam venting. This operation may result in a violation of the noise level standards of the Hillsborough County Environmental Protection Commission. The operation occurs only intermittantly over a thirty (30) day period prior to the initial startup of Big Bend Unit No. 4. Provided that TECO agrees to engage in a prior public notification program to notify residents in the area of the steam blowing operation, TECO should

be granted a variance from the Commission's noise level standards (Rule 1-10.04A) for a period not to exceed thirty (30) days from the commencement of the steam blowing operations.

There being no opposition to the variance request from the surface water quality standards of the Hillsborough County Environmental Protection Commission, and the request being otherwise supported by the evidence adduced by the applicant (with the exception of the lead parameter), this variance request relating to general, chromium, iron and arsenic standards should be granted for the life of the certification. The requested variance from the lead standard should be denied since the evidence failed to demonstrate that variance relief is necessary for that parameter.

RECOMMENDATION

Based upon the entire record of this proceeding and the above findings of fact and conclusions of law,

IT IS RECOMMENDED THAT:

(1) Tampa Electric Company be granted certification pursuant to Chapter 403, Part II, Florida Statutes, for the location, construction and operation of Big Bend Unit No. 4, the associated facilities and the directly associated transmission line, as proposed in the amended application and evidence in the record;

(2) The certification be subject to the conditions of certification attached to this Recommended Order as Appendix I;

(3) The variance request from the Department of Environmental Regulation's surface water quality standards be granted in accordance with the conditions of certification which are attached hereto;

(4) The variance request from Hillsborough County Environmental Protection Commission Rule 1-10.04A governing noise requirements be granted for a period not to exceed thirty (30) days from the commencement of steam blowing operations, conditioned upon Tampa Electric Company's agreement to notify the affected members of the public prior to the steam blowing operation;

(5) The variance request from Hillsborough County Environmental Protection Commission surface water quality standards contained in Rules 1-5.04, 2. (general), 1-5.04, 2.n (chromium), 1-5.04, 2.q (iron), and 1-5.04, 2.r (arsenic) be granted for the life of the certification for Big Bend Unit No. 4; and

(6) The variance request from Hillsborough County Environmental Protection Commission surface water quality standards pertaining to lead, Rule 1-5.04, 2.p., be denied.

Respectfully submitted and entered this 21st day of July, 1981, in Tallahassee, Florida.


DIANE D. TREMOR
Hearing Officer
Division of Administrative Hearings
The Oakland Building
2009 Apalachee Parkway
Tallahassee, Florida 32301
(904) 488-9675

Filed with the Clerk of the Division of Administrative Hearings this 21st day of July, 1981, in Tallahassee, Florida.

Copies furnished:

See attached page

Copies furnished:

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

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

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

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

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

Hamilton S. Oven, Jr.
Administrator, Power Plant Siting
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

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

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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. SO₂ - 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.
 - 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

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.

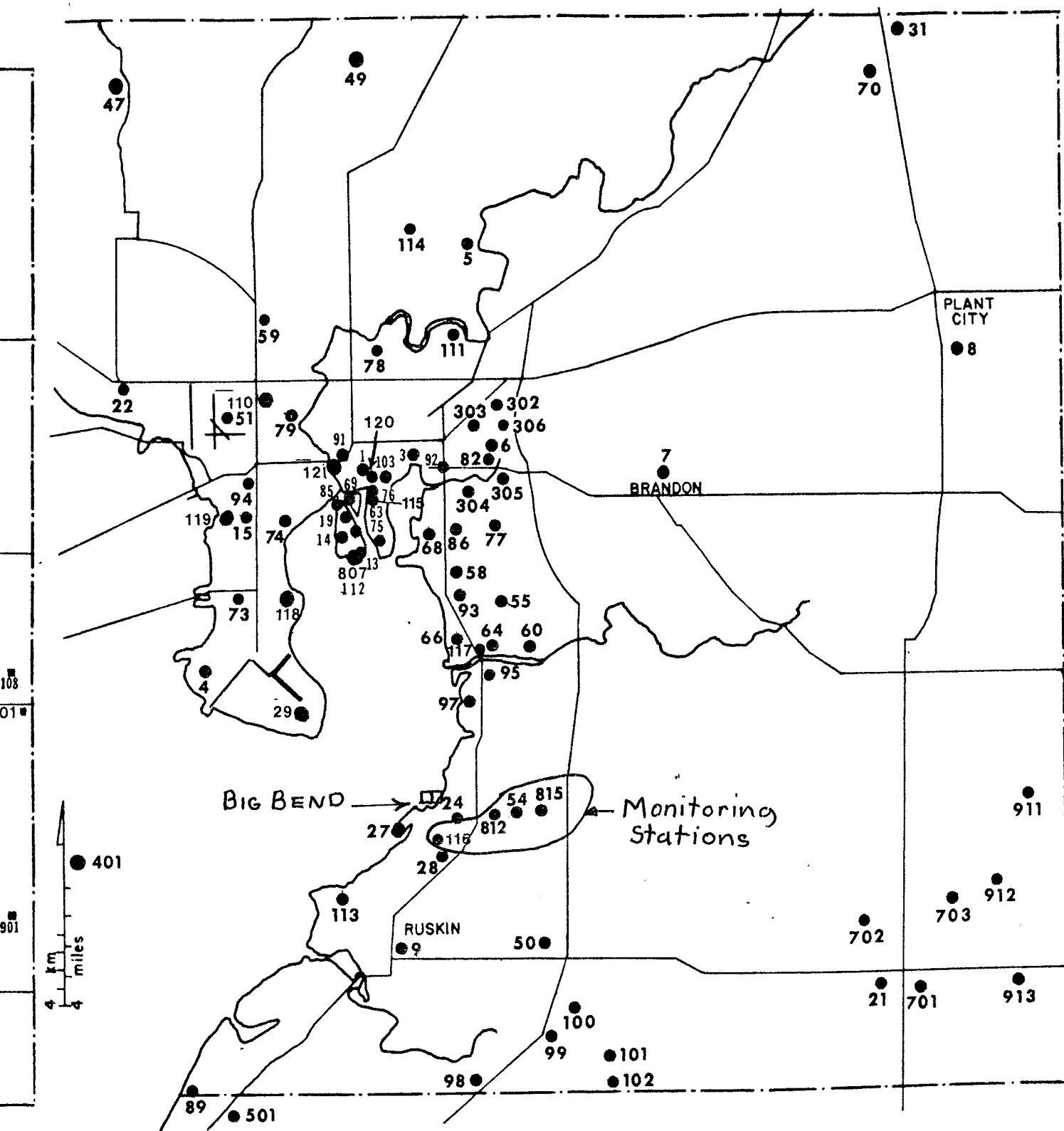
B. Air Monitoring Program

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 SO₂ 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:

<u>Parameter</u>	<u>Location</u>	<u>Sample Type</u>	<u>Frequency</u>
Flow, Cooling	Intake	Pump Log	Continuous
Flow, Bottom Ash	Prior to CWS	Recorder	Continuous
Flow, Boiler Blow-down	Prior to CWS	Daily Log	Daily
Flow, FGD Bleed	Prior to CWS	Recorder	Continuous
pH	CWS and prior to CWS on FGD Bleed	Grab	Two per Week
	Boiler & Bottom Ash Blowdown	"	
Temperature	CWS Outfall	Recorder	Continuous
TSS	Bottom Ash Blow-down, FGD Bleed, & Boiler Blowdown	Grab	Two per Week
Chlorine, Total Residual	Outfall	Multiple Grab	Two per Month Weekly
Oil and Grease	Boiler Blowdown Bottom Ash Blow-down and FGD bleed	Grab	Two per Month
Metals	Intake, Outfall FGD Bleed Stream Bottom Ash Blow-down & 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

- 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.

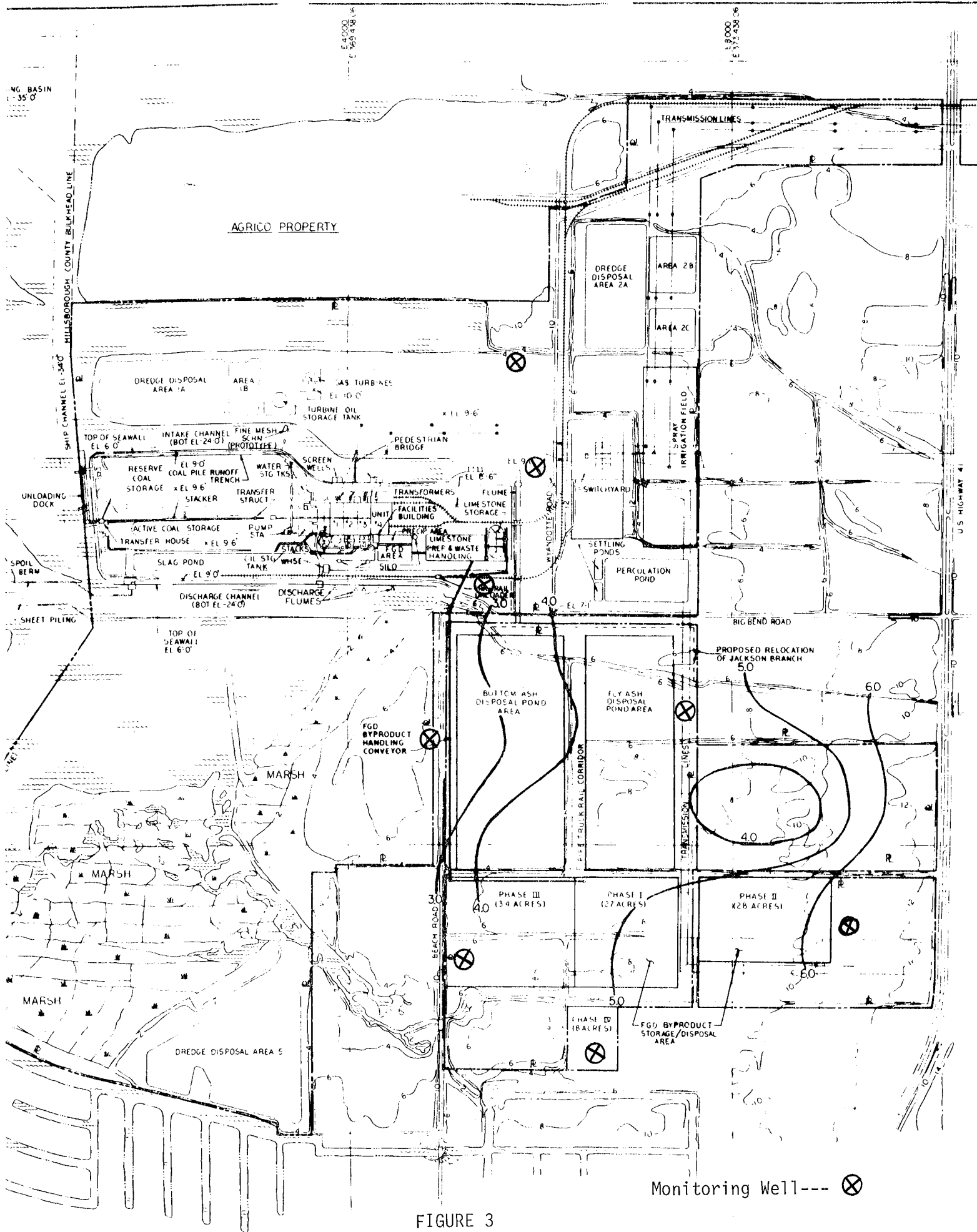


FIGURE 3

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 90⁰ 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 at Phase I of the FGD/gypsum disposal area, TECO shall reconstruct the northernmost east-west drainage canal. The side slopes of this drainage canal on the TECO property shall be reduced to at least 6:1 (horizontal to vertical) and planted with Juncus effusus. Such reconstruction shall be done in a manner to prevent violation of Section 17-3.121, F.A.C., Water Quality Criteria. Plans for canal reconstruction shall be submitted to the Department for approval sixty days prior to reconstruction of the canal.

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 representatives, 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 certification, 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 accommodate 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.