

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
ELECTRIC POWER PLANT SITE CERTIFICATION REVIEW
FOR
PALM BEACH COUNTY RESOURCE RECOVERY FACILITY
CASE NO. PA 84-20

Staff Analysis

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This report was prepared by the Power Plant Siting Section after coordination with and receipt of oral and written review and comments from many other Departmental staff members, in particular, the following:

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Also participating in this review were personnel of the Resource Recovery Council.

Pursuant to Chapter 403, Part II, Florida Statutes, this report constitutes the Department of Environmental Regulation's required analysis and recommended Conditions of Certification for the Palm Beach County Resource Recovery Facility, PA 85-21. This report and attached Conditions of Certification are hereby approved.

Date

Victoria J. Tschinkel
Secretary

State of Florida Department of Environmental Regulation
Palm Beach County - Resource Recovery Project
Electric Power Plant Site Certification Review
Case No. PA 84-20

I. INTRODUCTION

Pursuant to Chapter 403, Florida Statutes, Part II, Palm Beach County applied in June 1985 for certification of a solid waste-fired electric power plant at a site in the northeast region of the county near the intersection of the Beeline Highway and the Florida Turnpike.

The proposed project will be an energy recovery facility which will be designed to initially generate approximately 50 megawatts (MW) of electrical power. In the anticipation of future needs, certification is being sought for an ultimate electric generating capacity of 75 MW. Palm Beach County will contract with a full service vendor to design, construct, and operate the plant for 20 or more years. Generated electricity will be transmitted to the Florida Power and Light's transmission line network. The primary purpose of the facility is to dispose of solid waste. Non-processible waste (including non-combustibles and demolition debris) and unusable residue will be buried at a to-be-developed, on-site sanitary landfill. The sale of electricity will help offset the overall cost of owning and operating the facility.

II. DESCRIPTION OF SITE AND FACILITIES

A. Site

The Energy Recovery Facility will be located on approximately 1,320 acres which is bordered on the north by the Beeline Highway, on the east by the Florida Turnpike, on the south by a line approximately 610' south of 45th street, and on the west by the City of West Palm Beach Water Catchment Area. Past and present property use has altered the topography of the

site in certain areas. In the northeast portion of the site, there is an 82 acre (approximately) borrow lake which supports an active dredge operation. Two areas exist where a total of 28.2 acres have been excavated to an elevation of three feet below the natural ground elevation. Three abandoned shell pit operations encompassing approximately 171 acres are also evident on site. Areas of pine flatwoods, sabal palm hammocks, palmetto praries and cypress stands are also situated on the proposed site. The site topography is low and uneven due to the the scraped areas and the presence of a few depressional pockets in the upland areas across the tract. The geology on the site consists pre-dominantly of sand, shell, sandstone and limestone. The Anastasia Formation, composed chiefly of sand and shells, lies beneath the proposed site at a depth of approximately 100-250'. It contains the shallow aquifer which is the principal source of drinking water in Palm Beach County. It is underlain by a relatively impermeable layer of clayey materials which in turn overlie the permeable formations of the Floridan Aquifer.

The proposed facilities will consist of a gatehouse/weigh station, three RDF manufacturing lines, one OBW and ferrous processing line, two spreader stoker boilers, one 50 megawatt turbogenerator, an ash disposal area and a cooling system.

III. NEED FOR THE FACILITY/POWER

The primary purpose for the proposed facility is to dispose of the county's refuse and trash. The escalating cost of land for landfilling operations, limitations of land availability and environmental concerns such as leaching of contaminants from putrescible materials into the already stressed groundwater system were all factors in determining the need for a better solid waste handling system. The proposed resource recovery facility helps allow the retirement of the other county landfills, the conservation of land by reduction of the amount needed for future landfilling, a reduction of pollution of groundwater, a reduction of flies, odors, rodents and birds

associated with current landfills.

The sale of electricity will help offset the cost of the system. Over the life of the plant, the new facility is estimated to save several million dollars over the cost of landfilling for a similar length of time.

Electric system reliability will be increased by the addition of a small generating facility because it offsets some of the problems associated with a large unit when that unit goes down. The cost to the consumer per unit of electricity may be less than a similarly sized coal-fired unit because it does not require certain air pollution control equipment such as SO₂ scrubbers necessary for a coal-fired plant. Production of resource conservative electric power which does not depend on oil is in conformance with state and federal energy policy. It is also in conformance with the legislative intent of the Florida Electrical Power Plant Siting Act to provide abundant, low cost electrical energy that is of minimum adverse impact on human health and the environment and with the legislative intent of the Florida Resource Recovery and Management Act (Chapter 403, Part IV, Florida Statutes).

The Florida Public Service Commission has determined that the facility is needed. Their conclusions are contained in a latter section of this report.

IV. ZONING AND LAND USE PLANNING

The Palm Beach Solid Waste Authority requested and received a Special Exception to the Agriculture Residential zoning of the property to allow its use for the Resource Recovery Facility. In approving the special exception, the Palm Beach Board of County Commissioners attached sixteen conditions to the approved rezoning application which was accepted by the authority with the intent that every effort be made to make the project technically excellent and a "good neighbor" to all citizens of the County.

Existing land use on the site includes a broadcasting tower (occupying 10 acres), an area of low density housing (6.6 acres),

an active dredge lake (82 acres), abandoned shell pits (171 acres) and areas which have been excavated to below sea level (28.2 acres). Pine flatwoods, palmetto prairies, sabal palm hammocks and upland flatwoods occupy a considerable portion of the relatively undisturbed vegetative cover on the site. There are no abnormal changes in population trends or industrial patterns anticipated for this area. As a result, the siting of the resource recovery project at the Beeline Highway and Florida Turnpike site will accomodate projected County population growth.

V. AGENCY COMMENTS

Copies of the application were furnished in June 1985 to the Public Service Commission, the Department of Community Affairs, and to the South Florida Water Management District as required by Section 403.507, F.S. Shortly thereafter, copies of the application were furnished to the following agencies for their review and comments:

1. Florida Game and Fresh Water Fish Commission
2. Florida Division of Archives, History and Records Management
3. Treasure Coast Regional Planning Council
4. Florida Department of Commerce
5. Northern Palm Beach County Water Control District

A. Public Service Commission

The Florida Public Service Commission has reviewed the resource recovery facility application and furnished comments to the Department on October 21, 1985. PSC Order No. 15280 of Docket 850435 was adopted by the PSC as their Final Report as indicated by the Notice of Proposed Agency Action Order Granting Determination of Need and the Consummating Order No. 15349 issued November 12, 1985.

The Notice of Proposed Agency Action states as follows:

" Notice is hereby given by the Florida Public Service

Commission that the action discussed herein is preliminary in nature and will become final unless a person whose interests are substantially affected files a petition for formal proceeding pursuant to Rule 25-22.29, Florida Administrative Code.

"Pursuant to the Florida Electric Power Plant Siting Act, Section 403.501, Florida Statutes, et. seq., this Commission is charged with the responsibility of determining whether the construction of a proposed electrical generation facility is necessary to meet the present or expected need for electricity in all or part of Florida. Under the Act, the Department of Environmental Regulation must determine whether the proposed plant will comply with all relevant environmental standards and whether the proposed site for the plant is suitable for that use. Weighting all of these determinations, the Governor and Cabinet, sitting as the Power Plant Siting Board, ultimately determine whether approval will be granted for construction of the proposed plant.

"For the construction of any generating facility 50 MW or greater or the expansion of any existing electrical power plant, certification under the Act must be obtained. Palm Beach County Solid Waste Authority (Authority) proposes to construct and operate a solid-waste-fired electrical power plant that will have an initial generating capacity of 50 MW (gross) derived from processing 2,000 tons per day of refuse. The estimated ultimate generating capacity for the facility is estimated to be 75 MW (gross) which is to be derived from processing 3,000 tons per day of refuse. The projected in-service date for the facility is January, 1989, with construction scheduled to begin in the Spring of 1986. By a petition filed on August 6, 1985, the Authority seeks an affirmative determination of need for a 75 MW generating facility. The Authority's proposed facility is a small power production facility within the meaning of the Public Utilities Regulatory Policies Act and Rule 25-17.80 through 25-17.87, Florida Administrative Code.

"The purpose of requiring the Commission's need determination for a generating facility is to protect electric utility

ratepayers from unnecessary expenditures. As listed in the Statute, the four criteria the Commission must consider in determining need are as follows:

1. the need for electric system reliability and integrity;
2. the need for adequate electricity at a reasonable cost;
3. whether the proposed plant is the most cost effective alternative; and
4. conservation measures taken or reasonably available to the applicant that might mitigate the need for the new plant. (Section 403.519, Florida Statutes)

"Congress and the Florida Legislature have determined that cogeneration and small power production should be encouraged on the premise that they constitute alternate sources of power that either displace production of fossil fuel electricity or use fossil fuels more efficiently. Moreover, the proliferation of cogeneration and small power production facilities may obviate the need for construction of additional generating facilities by electric utilities. Therefore, in the present context, we find that the County's proposed small power production facility will increase electrical system reliability and integrity and will maintain the supply of adequate electricity at a reasonable cost while reducing our dependence on fossil fuel. When viewed as an alternative to construction of additional generating facilities by electric utilities, and considering the permissible level of payment to small power producers outlined in Rules 25-17.80 through 25-17.87, Florida Administrative Code, the proposed facility is the most cost effective alternative available. Construction of the plant is a conservation measure which we have encouraged precisely because it may mitigate the need for additional construction by electric utilities. Finally, in 1984 the Florida Legislature enacted legislation designed to assist local governments in financing projects such as that proposed by the County, and in so doing declared it to be the policy of this State that 'the combustion of refuse by solid waste facilities to supplement the electricity supply not only represents effective conservation efforts but also represents an environmentally pre-

ferred alternative to conventional solid waste disposal in this State. Therefore, the Legislature directs the Florida Public Service Commission to establish a funding program to encourage the development by local governments of solid waste facilities that use solid waste as a primary source of fuel for the production of electricity.' Chapter 377.709(1), Florida Statutes. Therefore, the relief sought in this petition, an affirmative determination of need, will be and the same is hereby granted. It is, therefore,

"ORDERED by the Florida Public Service Commission that this Order constitute the final report required by Section 403.507(1)(b), Florida Statutes, the report concluding that a need exists, within the meaning of Section 403, Florida Statutes, for the 75 MW generating facility proposed by Palm Beach County, Florida. It is further

"ORDERED that a copy of this Order be furnished to the Department of Environmental Regulation, as required by Section 403.507(1)(b), Florida Statutes. It is further

"ORDERED that the action proposed herein is preliminary in nature and will not become effective or final, except as provided by Florida Administrative Code Rule 25-22.29. It is further

"ORDERED that any person adversely affected by the action proposed herein may file a petition for a formal proceeding, as provided by Florida Administrative Code Rule 25-22.29. Said petition must be received by the Commission Clerk on or before May 30, 1985, in the form provided by Florida Administrative Code Rule 25-22.36(7)(a) and (f). It is further

"ORDERED that in the absence of such a petition, this order shall become effective on November 12, 1985, as provided by Florida Administrative Code Rule 25-22.29(6). It is further

"ORDERED that if this order becomes final and effective on November 12, 1985, any party adversely affected may request judicial review by the Florida Supreme Court by the filing of a notice of appeal with the Commission Clerk and the filing of a copy of the notice and the filing fee with the Supreme Court. This filing must be completed within 30 days of the effective

date of this order, pursuant to Rule 9.110, Florida Rules of Appellate Procedure. The notice of appeal must be in the form specified in Rule 9.900(a), Florida Rules of Appellate Procedure.

"By Order of the Florida Public Service Commission, this 12th day of November, 1985."

B. Department of Community Affairs

On August 11, 1985 the Department of Environmental Regulation received the following comments from the Department of Community Affairs:

"In accordance with Section 403.507, Florida Statutes, the Department of Community Affairs submits the attached preliminary report on the Palm Beach County Resource Recovery Facility power plant site certification application. The preliminary report provides a description of the process which will be used in the final study to evaluate the compatibility of the proposed power plant with the State Comprehensive Plan."

Introduction:

"On June 18, 1985, Palm Beach County submitted an application for power plant site certification to the Florida Department of Environmental Regulation. The proposed plant is a resource recovery facility which will utilize a mass burning stoker incineration system. Although the disposal of solid waste is the primary purpose of the facility, the plant will have a gross electrical generating capacity of approximately 50 megawatts, produced from the combustion of the refuse.

"Under section 403.506 of the Florida Statutes, no construction of any new electrical power plant of more than 50 megawatts in capacity may be undertaken without first obtaining site certification as provided in the Florida Electrical Power Plant Siting Act (Sections 403.501-403.517, F.S.). Section 403.507 of this act requires the Department of Community Affairs (DCA) to review power plant siting applications and submit preliminary and final reports to the Department of Environmental Regulation (DER), the lead agency in coordinating the power plant siting certification

process. The purpose of this preliminary report is to provide a description of the process which will be used in the final study to evaluate the compatibility of the proposed power plant with the State Comprehensive Plan (SCP). This report will also present the goals and policies of the SCP which will be most directly applicable to the siting of a resource recovery facility."

State Comprehensive Plan

"The SCP, authorized under the State Comprehensive Planning Act of 1972, is intended to 'provide long-range guidance of the orderly social, economic and physical growth of the state' (Section 23.0114, F.S.). The current SCP, adopted by the legislature in 1985, addresses 25 major areas as provided below:

Education	Energy	Children
Mining	Property Rights	Families
The Elderly	Land Use	Housing
Public Facilities	Health	Transportation
Governmental Efficiency	Public Safety	The Economy
Water Resources	Agriculture	Tourism
Plan Implementation	Employment	Air Quality
Coastal and Marine Resources	Cultural and Historical Resources	
Natural Systems and Recreational Lands		
Hazardous and Nonhazardous Materials and Waste		

"In the SCP, goals have been established for each of the 25 subject areas. These goals are defined as an 'expression of states to which Florida should aspire during the next 10 or 15 years'. (Summary, Conference Committee Amendments to HB 1338, SCP). Each goal contained in the SCP is accompanied by policies which indicate specific ways in which to achieve the particular goal."

Method of Review

"Although the Power Plant Siting Act directs the DCA to review site certification applications, no specific process by which to evaluate the compatibility of the project with the SCP is given, either in the law or the administrative rule. To assess the compatibility of the plant application with the SCP, DCA employs a method by which the projected impacts of the power

plant are compared directly with the goals and policies of the state comprehensive plan. Comparison of the projected facility impacts with these goals and policies enables the identification of specific consistencies and inconsistencies of the project with the SCP. In the final report, a determination of the project's overall compatibility with the SCP will be made by assessing these positive and negative impacts of the project."

Project Description

"The proposed solid waste energy plant, known as the Palm Beach County Resource Recovery Facility, will be located on a 1320 acre tract at the southwest intersection of the Beeline Highway and the Florida Turnpike. Development of the site will involve building a resource recovery facility which includes a gatehouse/weigh station, receiving and handling building, furnace boilers, turbine generators, ash disposal area, cooling system and an electrical substation. Two landfill cells will be located on the project site to accommodate the non-combustibles and inert ash residue resulting from the plant's combustion process.

Initially, the proposed facility will have a continuous design rated capacity of 2352 tons per day of solid waste, and a gross electrical generating capacity of approximately 50 megawatts. Certification is being sought for an eventual generating capacity of 75 gross megawatts, produced by burning 1872 tons of refuse derived fuel per day. The proposed plant is to be owned by a full service vendor (as yet unselected), while the land is to be leased from the county. Construction of the project is scheduled to begin in January of 1986, and it is expected to be in-service July 1, 1988."

Applicable Goals and Policies of the SCP

"The DCA will assess the compatibility of the proposed power plant with the SCP as a whole. It will do so, however, by concentrating on those SCP goals and policies that are directly applicable to the proposed resource recovery project. The goals and policies which are most relevant in evaluating resource recovery facilities are within the SCP subject areas of Health, Water Resources, Coastal and Marine Resources, Natural Systems and

Recreational Lands, Air Quality, Energy, Hazardous and Nonhazardous Materials and Waste, Public Facilities, Cultural and Historical Resources, and Governmental Efficiency. The applicable goals and policies associated with these subjects areas are presented below. As the certification review process continues, additional goals and policies contained in the SCP may be recognized as being directly applicable to the proposed resource recovery project and will also be utilized in the final report to assess compatibility."

Health

Policy #19 - Expand and improve current efforts to protect public health through clean air and water requirements.

Water Resources

Goal - Florida shall assure the availability of an adequate supply of water for all competing uses deemed reasonable and beneficial and shall maintain the functions of the natural systems and the overall present level of surface and groundwater quality. Florida shall improve and restore the quality of waters not presently meeting water quality standards.

Policy #1 - Ensure the safety and quality of drinking water supplies and promote the development of reverse osmosis and desalinization technologies for developing water supplies.

Policy #2 - Identify and protect the functions of water recharge areas and provide incentives for their conservation.

Policy #5 - Ensure that existing development is compatible with existing local and regional water supplies.

Policy #8 - Encourage the development of a strict floodplain management program by state and local governments designed to preserve hydrologically significant wetlands and other natural floodplain features.

Policy #9 - Protect aquifers from depletion and contamination through appropriate regulatory programs and through incentives.

Policy #10 - Protect surface and groundwater quality and quantity in the state.

Policy #11 - Promote water conservation as an integral part

of water management programs as well as the use and reuse of water of the lowest acceptable quality for the purpose intended.

Policy #12 - Eliminate the discharge of inadequately treated wastewater and stormwater runoff into the waters of the state.

Policy #13 - Identify and develop alternative methods of wastewater treatment, disposal, and reuse of wastewater to reduce degradation of water resources.

Natural Systems and Recreational Lands

Goal - Florida shall protect and acquire unique natural habitats and ecological systems such as wetlands, tropical hardwood hammocks, and virgin longleaf pine forests, and restore degraded natural systems to a functional system.

Policy #1 - Conserve forests, wetlands, fish, marine life, and wildlife to maintain their environmental, economic, aesthetic, and recreational value.

Policy #3 - Prohibit the destruction of endangered species and protect their habitats.

Policy #7 - Protect and restore the ecological functions of wetlands systems to ensure their long-term environmental, economic, and recreational value.

Policy #8 - Promote restoration of the Everglades system and of the hydrological and ecological functions of degraded or substantially disrupted surface waters.

Air Quality

Goal - Florida shall comply with all national air quality standards by 1987, and by 1992 meet standards which are more stringent than 1985 state standards.

Policy #1 - Improve air quality and maintain the improved level to safeguard human health and prevent damage to the natural environment.

Policy #2 - Ensure that developments and transportation systems are consistent with the maintenance of optimum air quality.

Policy #3 - Reduce sulfur dioxide and nitrogen oxide emissions and mitigate their effects on the natural and human environment.

Policy #4 - Encourage the use of alternative energy resources that do not degrade air quality.

Energy

Goal - Florida shall reduce its energy requirements through enhanced conservation and efficiency measures in all end-use sectors, while at the same time promoting an increased use of renewable energy resources.

Policy #5 - Reduce the need for new power plants by encouraging end-use efficiency, reducing peak demand, and using cost-effective alternatives.

Policy #9 - Promote the use and development of renewable energy resources.

Hazardous and Nonhazardous Materials and Waste

Goal - All solid waste, including hazardous waste, wastewater, and all hazardous materials, shall be properly managed, and the use of landfills shall be eventually eliminated.

Policy #1 - By 1995, reduce the volume of nonhazardous solid waste disposed of in landfills to 55 percent of the 1985 volume.

Policy #7 - Encourage the research, development, and implementation of recycling, resource recovery, energy recovery, and other methods of using garbage, trash, sewage, slime, sludge, hazardous waste, and other waste.

Policy #9 - Identify, develop, and encourage environmentally sound wastewater treatment and disposal methods.

Land Use

Goal - In recognition of the importance of preserving the natural resources and enhancing the quality of life of the state, development shall be directed to those areas which have in place, or have agreements to provide, the land and water resources, fiscal abilities, and the service capacity to accommodate growth in an environmentally acceptable manner.

Policy #3 - Enhance the liveability and character of urban areas through the encouragement of an attractive and functional mix of living, working, shopping, and recreational activities.

Policy #6 - Consider, in land use planning and regulation, the impact of land use on water quality and quantity, the avail-

ability of land, water, and other natural resources to meet demands, and the potential for flooding.

Public Facilities

Goal - Florida shall protect the substantial investments in public facilities that already exist, and shall plan for and finance new facilities to serve residents in a timely, orderly, and efficient manner.

Policy #1 - Provide incentives for developing land in a way that maximizes the uses of existing public facilities.

Policy #10 - Encourage development of gray-water systems to extend existing sewerage capacity.

Cultural and Historical Resources

Policy #3 - Ensure the identification, evaluation, and protection of archaeological folk heritage and historic resources properties of the state's diverse ethnic population.

Policy #6 - Ensure that historic resources are taken into consideration in the planning of all capital programs and projects at all levels of government, and that such programs and projects are carried out in a manner which recognizes the preservation of historic resources.

Governmental Efficiency

Policy #8 - Replace multiple, small scale, economically inefficient local public facilities with regional facilities where they are proven to be more economical, particularly in terms of energy efficiency, and yet can retain the quality of service expected by the public.

Economy

Policy #3 - Maintain, as one of the state's primary assets, the environment, including clean air and water, beaches, forests, historic landmarks, and agricultural and natural resources.

Summary

"The State Comprehensive Planning Acts states that 'the plan shall be construed and applied as a whole, and no specific goal or policy in the plan shall be construed or applied in isolation from the other goals or policies in the plan'. Consequently, in the final report, the consistency of the project with the SCP

will be assessed in terms of its overall compatibility with the plan rather than with specific policies. This should assure a consideration of the positive and negative impacts of the proposed power plant."

On December 24, 1985, the Department of Community Affairs submitted their final report on the South Broward Resource Recovery Facility.

"In accordance with Section 403.507, Florida Statutes, the Department of Community Affairs (DCA) submits the attached final report on the Palm Beach County Resource Recovery Project power plant site certification application. The final report presents an evaluation of the compatibility of the proposed power plant with the State Comprehensive Plan.

"After reviewing the application against the stated goals and policies of the State Comprehensive Plan, we find that the proposed resource recovery facility would be compatible overall with the State Comprehensive Plan if the DCA's recommended conditions of certification were met."

The applicable goals and policies and a discussion of the consistency of the project with the goals and policies is contained in the complete DCA report in Appendix B of the report.

"The purpose of this final report is to present the goals and policies of the SCP which will be most directly applicable to the siting of the resource recovery facility and to provide an evaluation of the compatibility of the proposed power plant with these goals and policies and with the SCP as a whole."

"The DCA assessed the compatibility of the proposed power plant with the SCP as a whole. It did so, however, by concentrating on those SCP goals and policies that are directly applicable to the proposed resource recovery project. The goals and policies which are most relevant in evaluating resource recovery facilities are within the SCP subject areas of Water Resources, Natural Systems and Recreational Lands, Air Quality, Energy, Hazardous and Nonhazardous Materials and Waste, Public Facilities and Cultural and Historical Resources. The applicable goals and policies associated with these subject areas are presented below,

followed by a discussion of the consistency or inconsistency of the project with these goals and policies."

The DCA's final report concluded the following:

"The Power Plant Siting Act requires that DCA evaluate the compatibility of electrical power plants with the State Comprehensive Plan (SCP). The State Comprehensive Planning Act states that 'the plan shall be construed and applied as a whole, and no specific goal or policy in the plan shall be construed or applied in isolation from the other goals or policies in the plan'. Consequently, in this report, the compatibility of the project with the SCP is ultimately assessed in terms of its overall compatibility rather than its compatibility with specific goals and policies.

"In summation, the Department of Community Affairs finds that the proposed Palm Beach County Resource Recovery Facility would be consistent with the following policies and goals:
Water Resources: Policies #1, 9, 10, 11, 12, and 13. (The project was determined to be consistent with the water quality and water reuse portions of Water Resources Policies #9, 10, and 11, while being inconsistent with the water conservation portions of the same policies.)

Natural Systems and Recreational Lands: Policy #7. (The project was determined to be consistent with the wetlands-restoration portion of Natural Systems and Recreational Policy #7 while being inconsistent with the wetlands-protection portion of the same policy.)

Energy: Policies #5 and 9

Hazardous and Non-Hazardous Materials and Waste: Policies #1, 7, and 9

Land Use: Policy #6

Public Facilities: Goal, Policy #1

Cultural and Historical Resources: Policy #3 and 6

The DCA finds that the proposed project would be inconsistent with the following policies:

Water Resources: Policies #2, 5, 9, 10, and 11

Natural Systems and Recreational Lands: Policies #1, 3, and 7

Air Quality: Policies #1, 2, 3, and 4

Land Use: Policy #3.

"The Department considered the following considerations important in determining overall consistency with the SCP:

(1) The DCA judges that Palm Beach County used a thorough and orderly process to identify and evaluate potential sites. A comprehensive consideration of technical, environmental and regulatory aspects of each potential site was used in the selection of the proposed site for the resource recovery project.

(2) In its analysis, the DCA considered the alternatives to the construction of a resource recovery facility in Palm Beach County. One such alternative would be to increase the number of landfills in Palm Beach County. Palm Beach County is highly urbanized and acceptable landfill sites are becoming increasingly difficult to locate and expensive to operate. Although there will be some negative aesthetic impacts on the area surrounding the project site, the proposed facility would reduce the amount of landfill area required, thus contributing to the overall enhancement of character and liveability in Palm Beach County. Another alternative to the resource recovery project's secondary function as a generator of electricity would be an earlier construction of a new base-load electrical generating station to serve south Florida. These large power plants are very expensive and often have significant environmental impacts. Certification of the resource recovery facility should contribute to postponing construction of a new base load electric generating station.

(3) The project would destroy approximately 190 acres of wetland area. Much of this wetland land area has already been extensively disturbed and is probably not as productive as it once was. In addition a one to one mitigation plan has been proposed for areas on and off the site which should offset much of the negative impact associated with the removal of wetlands.

(4) The development and use of resource and energy recovery facilities is a policy that is directly stated in the SCP. The reduction of the volume of solid wastes and the utilization of

renewable energy sources are functions of the project which are clearly consistent with and encouraged by the policies and goals of the SCP.

"In conclusion, the DCA considers the aspects of the resource recovery project which would be incompatible with the SCP to be outweighed by the aspects of the project which would be compatible with the SCP and therefore finds the proposed Palm Beach County Resource Recovery Facility to be compatible overall with the State Comprehensive Plan.

"DCA finds that the negative impact of the project on endangered and threatened plant species can be mitigated through the following recommended condition of certification:

(1) The certification-holder shall develop the site so as to retain endangered and threatened plants, or replant these plants in another suitable environment.

"The above recommended condition of certification is intended to reduce the propose resource recovery project's incompatibility with the SCP Natural Systems and Recreational Lands Policy #3."

C. South Florida Water Management District

On January 13, 1986, the South Florida Water Management District forwarded a final report to the department as approved by the governing board on January 9, 1986. The entire report is attached to this report as Appendix C. The District's letter of transmittal stated the following:

"Pursuant to Chapter 403.507(1)(c), attached the South Florida Water Management District's Report pertaining to matters within our jurisdiction for the Certification of the above referenced project.

"The District's Governing Board officially approved transmittal of the Report during the Regulatory meeting of January 9, 1986. During the meeting, the Governing Board modified the staff recommendation of transmittal of the Report to DER, to include the statement that, in the opinion of the District Governing Board, and from the perspective of water quality and protection

of drinking water quality, the subject site is inappropriate.

"Similar to requests we have made in the past, the District would also appreciate being consulted by the Department with regard to its development of proposed conditions on post-certification monitoring and enforcement activities, and would like to participate in any review and evaluation by the Department of the applicant's compliance with the terms and conditions of the certification."

The District's conclusions and recommendations are as follows:

"District staff have reviewed the Application for Power Plant Site Certification with respect to current and proposed District criteria.

"It should be noted that the District's environmental assessment addresses specifically the issues of wetland quality, their productivity, the impacts of development and the adequacy of mitigation as related to the site's wetland ecology. It is recognized, however, that a development of this nature may have other direct or indirect ecological impacts. For example, at this site, concern has been expressed that the Everglades Kite, an endangered species, might be adversely affected. The Florida Game and Fresh Water Fish Commission and the United States Fish and Wildlife Service, agencies with specific expertise in wildlife behavior and habitat protection, are currently negotiating the degree of mitigation necessary to satisfy these concerns. In addition to on-site mitigation already agreed to (relocation of Jog Road and repositioning of the resource recovery facility) additional off-site mitigation may result from these negotiations.

"Based on information contained in the application, staff is of the opinion that the project could be developed at this site to conform with current and proposed District criteria. This report contains recommendations to the Florida Department of Environmental Regulation (which is the lead reviewing agency) for inclusion in the Agency's report. In addition, District staff have recommended the following thirteen Applicable General Agency

Standards and twenty-two Site Specific Standards to ensure the District's continued involvement as the project progresses from site selection to construction/operation."

The District's standards are incorporated in the Conditions of Certification attached to this report and also attached in Appendix C. The following additional conclusions and recommendations were submitted by the District:

"Surface Water Management"

1) "At the time of District report preparation, a ten acre parcel adjacent to the West Palm Beach Water Catchment Area and surrounded by the Solid Waste Authority's (SWA) property had not been purchased. However, the Solid Waste Authority has indicated the Authority will either purchase, or enter into condemnation proceedings in order to obtain the land. Revised surface water management system calculations submitted in December account for this outparcel. In addition, the District agrees with the Solid Waste Authority's position not to accept any off-site runoff from the proposed 320 acre Planned Unit Development, located adjacent to the project site north and west boundaries. A Homeowner's Association could be responsible for water quality monitoring prior to discharging through the Authority's site, and if monitoring parameters were exceeded, it could be difficult to determine the source, if off-site flows are part of the discharge.

2) "In order for the Northern Palm Beach County Water Control District to receive the discharges from the Facility, an improvement is needed at the Florida Power and Light crossing on the District's EPB 10 Canal. Northern Palm Beach County Water Control District's consultants have recommended one additional 60 inch Corrugated Metal Pipe (CMP), or equivalent replacement for three 60 inch CMP's. District staff therefore has developed Site Specific Standard No. 19 which states that any facilities permitted by the SFWMD which are not constructed, but would be affected by this project must be fully operational prior to stormwater discharging from the SWA site.

3) "The proposed discharge pipe would be located under the Class

I Landfill. District staff did not evaluate the route with respect to structural integrity nor long term maintenance capabilities. From a planning and design standpoint, it appears that the SWA has chosen the most economical route; however, long term maintenance could be a problem. The SFWMD has therefore developed a special condition which states that any further modifications to the surface water management system drawings and calculations, including relocation of the discharge route, must be submitted to the District for verification of compliance with current regulatory criteria.

4) "The District recommends that spreader swales (or other District approved equivalent) be used to approximate sheetflow discharges (as opposed to point source discharges) into wetland areas, and that sedimentation traps be designed to reduce sediment loads into the wetland areas which would serve as outfall areas. Site Specific Standard No. 12 addresses the District's concerns.

5) "In fulfillment of their obligation under the Water Quality Assurance Act of 1983, Chapter 83-310 of Florida, the Treasure Coast Regional Planning Council designated this proposed facility as a potential site for storage, transfer, and treatment of hazardous materials. The Solid Waste Authority officially opposes the treatment designation, but is willing to be designated as a storage and transfer site. As part of the Refuse Derived Fuel operation, the Authority will separate hazardous materials from the waste stream, but the designation specified under the Water Quality Assurance Act should be considered by the Department as a different licensing function from the Power Plant Siting Act. Site Specific Standard No. 9 addresses this issue."

"Wastewater Management"

1) "Under normal proceedings, the SFWMD coordinates the construction of deep well injection projects with the DER and provides an advisory report prior to issuance of the DER permit. This process ensures that the concerns of the SFWMD are adequately addressed prior to issuance of a DER construction permit.

"Since the Power Plant Site Certification process supercedes all other permitting processes, the District recommends the DER incorporate into the Certification the following Conditions:"
(The District's Conditions are included in the Department's Conditions of Certification.)

"Environment"

- 1) "Staff have held one on-site inspection and several aerial inspections of the subject property. Conclusions drawn include that the majority of the marshes on the eastern half of the site have been impacted by drainage swales and ditches, which is reflected in that the vegetative community in many of these former wet prairies are now more transitional, as indicated by establishment of wax myrtle, willow, pine seedlings and melaleuca. Staff have concluded that the wet prairies on the eastern half of the property are not sufficiently innundated during the wet season for much secondary productivity to occur. Staff have concluded that the marshes on the western half of the site are in much better environmental condition. Drainage swales are not as prevalent and the higher stage maintained in the adjacent Water Catchment Area has probably lengthened the period of inundation by seepage. In addition, the abandoned rock pits in the southwest corner of the site have now stabilized as a deepwater aquatic habitat.
- 2) "The most significant species-environmental feature of the site is an Ibis rookery and roost for wading birds in the area. In addition, a Snail Kite population apparently migrates into the area when drought conditions are experienced in this species' usual foraging habitat. Staff concurs with the Solid Waste Authority's consultant's conclusions that, although the on-site location used by the birds is not unique, a combination of characteristics of the area itself and adjacent and nearby habitats account for the pattern of usage observed. The Authority has been working with the Florida Game and Fresh Water Fish Commission and the U.S. Fish and Wildlife Service for off-site mitigation, and a site layout which would least affect the Snail Kite population. The District therefore defers to

those agencies who are more familiar with birds' behavior patterns and subsequently responsibility for endangered species protection.

3) "District staff recommends that the water control structures outfalling to the conservation area should be adjustable to allow for fine tuning of wetland water levels, if necessary. The District also recommends that care should be exercised to maximize sediment removal from runoff prior to discharging to the conservation area, so as not to affect the abandoned shell rock pits, which have now stabilized as a deepwater aquatic habitat. An acceptable method of discharging stormwater into the conservation area is addressed through Site Specific Standard No. 12. As a point of information, the control elevations and locations of outfall structures and sedimentation traps should be field located with District staff.

"In addition, the District should be incorporated into the development of the proposed littoral zone schemes for the proposed on-site lakes.

4) "This site represents approximately nine years of searching for an alternative site for resource recovery in Palm Beach County. During the site selection process, District staff advised Palm Beach County Solid Waste Authority and County representatives that construction on this site, while feasible from an engineering perspective, would be expensive in order to mitigate water resource concerns. It should be noted that this was not the original site chosen by the Authority, but is the one which was approved by the local agencies."

D. Florida Game and Fresh Water Fish Commission

On December 4, 1985, a copy of the letter from the Florida Game and Fresh Water Fish Commission to the U.S. Army Corps of Engineers was received by the Department. A copy of the letter and attachments are found in their entirety in Appendix D. The letter stated as follows:

"At the October 29 and 30, 1985 Interagency Meeting in your

The SWA, with technical assistance from the GFC, would be responsible for all permits, engineering, purchases, and structure installation for the marsh restoration. A summary of restoration work needed is found in Table 1 and Figure 2. Critical to this process would be a detailed hydrological analysis of the L-8 marsh to indicate the optimal design of structures to restore natural hydroperiods. A preliminary review of this project was done by Mr. Robert Rodgers, Engineering Design Section Chief of the South Florida Water Management District (enclosed). He indicated the preliminary needs outlined in Table 1 were fairly reasonable and would serve as a guideline for a proper engineering study."

E. Florida Division of Archives, History, and Records Management

"As per your request we have reviewed the above cited project. As stated in our September 10, 1984, correspondence with the applicant's consultant (see Appendix 10.11 of Document), it is the opinion of this agency that because of the project location it is unlikely to affect any sites listed, or eligible for listing in the National Register of Historic Places, or otherwise of national, state or local significance. Therefore, Historic Preservation concerns are not an issue in this project."

F. Treasure Coast Regional Planning Council

On August 26, 1985, the following comments were received from the Treasure Coast Regional Planning Council:

"The attached is an analysis of the Palm Beach County Solid Waste Authority application to construct a resource recovery facility which was considered by the Council on August 16, 1985. Based upon this analysis and the testimony provided at the meeting, Council adopted the following comment and directed that it be transmitted to your office.

"The Council commends the Solid Waste Authority for initiating a public recycling facility that will be of regional

benefit, providing an alternate energy source and ensuring sufficient land area for landfills, and, therefore, the Council recommends approval of the application provided that the applicant, in cooperation with all appropriate agencies, is able to prepare site mitigation plans which shall mitigate, to the satisfaction of this Council, the potential regional impacts on:

1. wetlands;
2. groundwater; and
3. wildlife species of special concern including the endangered Everglade Kite.

"Further, the Council will take the action necessary to secure standing as provided in Chapter 403, Florida Statutes, and hereby directs the Council attorney and staff to participate in the Land Use Hearing scheduled for September 12, 1985 to the extent necessary to preserve the Council's opportunities to resolve the regional impacts related to wetlands, groundwater and wildlife species including the Everglade Kite, and to participate in the Certification Hearing, if necessary."

The following conclusions of the TCRPC are found in the analysis, which can be found in its entirety in Appendix E.

"The benefits of developing a resource recovery facility are recognized; recycling, alternate energy source development and development of sufficient land area for landfills are important long-range regional planning goals that should be supported by Council. However, the project as proposed will result in certain environmental impacts and, therefore, should not be constructed on this site as presently designed. Development of this project as proposed would negatively impact a large breeding colony of wading birds and essential habitat of the endangered Everglade Kites. The project as designed on the proposed site would negatively impact wetland habitat, as least for some period of years, and poses some risk to potable water supplies. It may or may not be possible to eliminate the impacts of this project by redesigning aspects of the proposed plan. Council should work with the Palm Beach County Solid Waste Authority to resolve the identified areas of concern (i.e., wetland, wildlife and potable

water supply)."

G. State of Florida Department of Commerce

The following comments were received from the State of Florida Department of Commerce of August 26, 1985:

"This facility will increase Palm Beach County's attractiveness to sophisticated industry. The County has a solid base of high technology firms such as Pratt and Whitney and IBM and has been selected as a site for Gould's 500 acre science and technology campus. The executives of such firms are very much concerned with government services. The resource recovery facility will serve as a symbol of the County's modern, ecologically sound manner of turning a problem (solid waste) into an asset (electricity).

"This example of efficient local government, combined with the amenities of the area, will foster the economic development needed to maintain and enhance a quality standard of living for Palm Beach County citizens."

H. Northern Palm Beach County Water Control District

On September 23, 1985, the following comments were received from the Northern Palm Beach County Water Control District:

"We have reviewed the Surface Water Management Program for the above referenced project. The proposed system will meet the discharge requirements of the District for this project. However, no mention is made in the report for conveyance of the off-site drainage areas through or around this project. These off-site areas were mentioned in our letter dated March 21, 1985. They include a 10-acre parcel west of the Solid Waste Authority's facility and north of 45th Street. The other parcel is a 320-acres north and west of this project.

"It should be noted that in order for the District to receive this discharge from the Solid Waste Facility an improvement is needed at the FP&L crossing on EPB-10. An additional 60" CMP should be added or equivalent replacement for 3 - 60" CMP's."

Jacksonville office, Tom Keith of the Palm Beach County Solid Waste Authority (SWA) expressed an interest in possible off-site mitigation measures to compensate for the loss of wetlands associated with the proposed resource recovery facility. The potential for on-site mitigation is extremely limited, yet the loss of approximately 190 acres of wetland habitat will require substantial measures to prevent significant, long-term loss of fish and wildlife resources.

"Enclosed is a potential mitigation project involving wetland habitat enhancement within the Game and Fresh Water Fish Commission's J.W. Corbett Wildlife Management Area, which is located west of the SWA site. This proposal would improve critical wildlife habitat on state-owned lands which are managed for conservation purposes. We believe it would appropriately mitigate wetland losses incurred in the SWA project, and ask that you give it your consideration.

"The Florida Game and Fresh Water Fish Commission's (GFC) J.W. Corbett Wildlife Management Area is composed largely of wetlands. The goal of the Commission is to maintain or enhance existing wetland areas within the Corbett Area utilizing natural hydrological processes. There is a 3,400 acre relict sawgrass march (L-8 marsh) along the southwest border adjacent to the L-8 canal and levee. Rock weirs originally allowed natural discharge of surface water from Corbett to the southwest. These structures were replaced by steel culverts and stop-log risers. During the past 10 to 15 years, these structures have been degenerating and they currently have unregulated discharge into the L-8 canal. As a result, the L-8 marsh has been severely overdrained. Overdrainage has resulted in the loss of muck topsoil by erosion and oxidation, invasion of the marsh by upland shrubs, and loss of regular and consistent use of the marsh by waterfowl.

"As mitigation for wetland losses incurred in the construction of a resource recovery facility and landfill, the Palm Beach County Solid Waste Authority (SWA) would install water control structures and refurbish levees to restore natural hydroperiods to the L-8 marsh (Figure 1).

VI. DEPARTMENT OF ENVIRONMENTAL REGULATION EVALUATION

Florida's Electric Power Plant Siting Act (PPSA), specifically subsections 403.507(2)(a-h), F.S., and Chapter 17-17, FAC, identify minimum criteria which must be studied by the Department in its review of a steam electric facility. The review process is concerned with many of the same factors as an environmental impact statement. This includes some factors more socio-economic in nature than environmental, but which may have associated environmental impacts. An example of this would be land use plans. Proper land use planning can help steer development away from environmentally sensitive areas, and also into areas more suited for certain types of development as well.

In return, facility-specific environmental impacts, particularly ones adverse to human health, welfare and safety, may preclude site development in areas thought to be appropriate from land use perspectives. An example of this would relate to air pollution. If emissions cannot be controlled within the limits of the new source emission standards, or if the ambient air quality standards in the area reasonably considered to be affected by the facility cannot be achieved, then further review is unwarranted and the site may be considered unacceptable. The concerns with water are adequacy of supply and chemical and biological effects of discharges. The long-term effects of noise and the disposal of solid wastes are additional aspects to be considered.

With these factors in mind, the Power Plant Siting Act criteria and others have been evaluated in the following sections. PPSA criteria include: accessibility to transmission corridors; proximity to transportation systems; cooling system requirements; environmental impacts; soil and foundation conditions; impact on water supplies; impact on terrestrial and aquatic plant and animal life; impact on water and air quality; site specific studies; impact on surrounding land uses; impact on public lands and submerged lands; impact on archaeological sites

and historic preservation areas; and construction and operational safeguards.

A. Accessibility to Transmission

The project is in the Florida Power and Light Company's (FPL) service area. There is an existing FPL transmission line corridor that crosses Haverhill Boulevard approximately 1000 feet south of 45th Street. A connecting transmission line will be 138,000 volts phase to phase, and will be sized to carry the ultimate output of the plant (75 MW) continuously. The transmission will be supported by singlepole towers (concrete) with horizontal post insulators in a delta configuration with an overhead static conductor for lightning protection. There will be one 12 to 15 foot wide shell rock access road running the length of the corridor, south of 45th Street, adjacent to the concrete poles.

The 138kV transmission line will exit from the resource recovery plant substation south along the roadway across 45th Street to the south edge of the Authority's property, go east along the south edge of the property across Florida's Turnpike to Haverhill Boulevard, and turn south on the west side of Haverhill Boulevard right-of-way to the existing FPL transmission corridor. Connection to the transmission line would be by gang operated disconnect switches. The Solid Waste Authority line would be protected as a part of the FPL line by means of remote tripping.

B. Fuel

The fuel for the electrical generating unit is refuse derived, processed from municipal solid waste, which will be collected mostly from within Palm Beach County. The proposed project will have an initial and maximum (or ultimate) installed capacities of 12,000 and 18,000 tons per week respectively.

The availability of energy, and of the fuels to supply that energy, is of grave concern to the State and the Nation. The choice of processed refuse as the primary fuel source has three benefits: (1) It reduces the amount of putrescible material deposited in landfills, which reduces potential water pollution from water leaching through putrescible organic material placed

in a landfill. (2) Generation of electricity by the burning of refuse at this new facility is anticipated to reduce the amount of imported fuel oil by over 600,000 barrels per year and more than 12 million barrels over the life of the project (20 years). (3) The use of solid waste as fuel to generate electricity conforms to state and federal energy and resource recovery policies.

C. Proximity to and Impacts on Transportation Systems

The site for the resource recovery facility is located immediately southwest of the intersection of the Beeline Highway (S.R. 710) and the Florida Turnpike and is directly west of the existing Dyer Boulevard Sanitary Landfill.

There will be some impact on the roads surrounding the site due to increased utilization by construction and operation vehicles. It is expected that the existing roads will be maintained by the County or the State. Neither aquatic nor rail transportation systems are expected to be utilized nor subsequently impacted as a result of the facility.

Since the wastes to be processed at the facility are normally transported to the landfills, there is expected to be little difference in impacts on transportation systems as a result of the facility. Haverhill Boulevard and 45th Street will experience greater traffic.

D. Cooling System Requirements

The electric generating portion of the resource recovery plant will use water cooled condensers to condense the low pressure steam discharge from the turbine. The cooling water will pass through a wet mechanical draft cross flow cooling tower for the dissipation of the waste heat. Blow down from the tower will be conveyed to a sump where it is combined with boiler blowdown, demineralizer, and reverse osmosis reject waters, from which ash quench water will be drawn. The water remaining will be combined with treated sanitary system effluent and landfill leachate, and then discharged by deep well injection.

The proposed source of primary cooling water will be from wells that will tap the shallow aquifer at depths between 50 and

100 feet at locations along the eastern boundary of the site landfills and in the Dyer Boulevard Landfill. These wells are to be located to reduce and control the mineralized water from the new site. Changes in temperature are not likely to be significant and there is no reason to suspect significant stratification in water quality within the zone to be tapped by the cooling-water well.

E. Environmental Considerations and Impacts

E.1. Soil and Foundation Conditions

The facility site is initially covered by 16 soil types, four having a dominant presence and occupying 50 percent of the entire location. They are Basinger, Myakka, Hallandale, and Riviera Sands, all of which generally lie level and are poorly drained. Cone penetration tests indicate that the area is covered by a layer of shelly sand to about 50 to 70 feet. Generally in between these depths, penetration resistance increases dramatically indicating the top of a sandstone bed. Borings were extended to a depth great enough to ensure the presence of this layer thus providing adequate support for deep foundations supporting major structural elements.

There will be no alterations to topography or soils that will affect the potential for subsidence or sink hole development. Likewise, no alterations will affect the soil bearing strength or soil stability.

No subsurface construction is contemplated and only load bearing piles will be installed underneath those areas of the structure requiring support.

E.2. Availability of Water

Potable water and non-potable water will be supplied to the facility by wells installed for both supplies. Non-potable water interceptor wells will be located along the eastern boundaries of the site landfills and in the Dyer Boulevard Landfill area where mineralized water has been identified. The non-potable water supplied by interceptor wells will affect the water level in three public water supply wells slightly (0.4'-0.7' drawdown). This drawdown should not significantly affect the water supply

capability of these wells. The landfill design should adequately protect groundwater quality. The construction and operation of the facility will reduce groundwater availability on site by 279 million gallons per year. Water stored on site will increase by 10,731 million gallons. The facility operation could cause a slight drop in water level in the West Palm Beach Water Catchment Area of 0.02 feet. No significant impacts on water availability are expected due to operation of the facility.

E.3 Site Modifications

Site modifications will include construction of the boiler, an electrostatic precipitator, 250 foot stack, a water cooled condenser, a turbine generator, refuse unloading and storage facilities, a RDF facility, administrative offices, truck weighing station, two landfill areas, stormwater retention ponds, borrow lakes and associated equipment.

E.4. Plant and Animal Communities/Rare or Endangered Species

The proposed site includes within its boundaries one of the largest nesting assemblages of wading birds catalogued within the Treasure Coast. Additionally, it has become known that the site is currently being used by a significant number of Everglade Kites. A census of the roost taken in 1985 indicated 372 Everglade Kites, a number representing more than 50 percent of the entire population of this endangered and unique bird species. The species is considered endangered by the U.S Fish and Wildlife Service, the Florida Game and Freshwater Fish Commission and the Florida Committee on Rare and Endangered Plants and Animals. One active Everglade Kite nest has been identified to date within the roost which occurs on-site. Few other nests are known to be active in the entire state this year.

Four other species identified as species of special concern by the Florida Game and Fresh Water Fish Commission (FGFWFC) were directly observed on the site. All are bird species. They are: Little Blue Heron, Snowy Egret, Tricolor Heron, and Limpkin. All of the species are closely associated with wetland habitats. The areas most heavily utilized by these species on the site are the

large marshes at the west end of the site. The swamp areas in the central portion of the site appear to be used for foraging after heavy rains. The wood stork may also occur on site, although it has not been observed.

A single species on the Federal threatened species list was directly observed on the site. This was the American Alligator. This species is also on the FGFWFC species of special concern list. This species was observed in the larger canals and in the abandoned borrow lake area. Many of the marsh areas on the site are lacking water of a depth great enough to provide optimal alligator habitat.

Two species of orchids on the Florida threatened species list were observed on the site and several more may be present. The Wild Pine Bromeliad was observed on the site and is listed as endangered. One other threatened bromeliad was observed, and several other probably occur mainly within the cypress woods that are scattered over the site.

Site design is anticipated to provide protection for the rookery area and wetlands on the western part of the site. This should help maintain habitat for the threatened or endangered birds and the Alligator.

The construction of this Resource Recovery Facility will have a significant ecological impact on the site. Species diversity and composition, and the proportion of various habitats on the site will undergo both short and long term alterations.

When construction begins, diversity and composition will be affected. Secretive and sensitive animal species will leave the site. The catchment area and the undeveloped area south of the site may serve as a refuge for those taxa that seek to escape. The size of the site and the length of time required to develop it will influence the rate at which this shift occurs. Areas left undisturbed will not have a shift as immediate or dramatic as the first areas to be altered.

Following this short-term phenomenon, the species composition and diversity on the site will go through a longer readjustment period. As the amount of various habitat types on

the site shifts, so will species composition. The greatest amount of habitat loss is expected to be from the upland communities.

Pine flatwoods will be the native vegetation community most significantly reduced in acreage on the site.

Since most or all of the wetland areas eliminated will be replaced, the long term diversity of the wetland communities will not experience as great a disruption. There will be a shift in the proportion of various wetland types. The shrub dominated swamps, particularly those dominated by myrtle, will be reduced and the proportion of marshes will increase. The proportion of cypress forest on the site will be slightly reduced.

The large conservation area on the west side of the site designated as a buffer and mitigation area should retain much of its diversity and productivity, or regain it relatively soon. The catchment area will provide a source of colonization of the area. Although there will be minor disturbance in this western portion, it will recover its diversity and ecological value quickly.

The area encompassed by the resource recovery plant itself (approximately 40 acres) will be significantly altered. The areas encompassing the landfills will also be changed. In the short term, the habitats and communities taken by these facilities will be lost.

The amount of deepwater and lake habitat on the site will be increased. The existing dredge lake will be expanded and additional lakes will be created. These areas should provide fish habitat at the termination of the project, and the margins of the lakes will provide littoral zones and wetland habitat.

E.5. Wastewater/Water Quality Impacts

a. Plant Waters

The following volumes of water are expected to be produced by the resource recovery facility during normal daily operation:

- | | |
|--|----------|
| 1. Cooling Tower Blowdown | 340 gpm |
| 2. Boiler Blowdown | 30 gpm |
| 3. Cooling Tower Evaporation and Drift | 1065 gpm |

- | | |
|--------------------------------|---------|
| 4. Potable and Sanitary Wastes | 14 gpm |
| 5. Injection Well | 392 gpm |
| b. Surface Water | |

Surface water impacts would largely arise from stormwater runoff from site alteration, construction of buildings, parking lots, and other impermeable surfaces. Also, foundation soils for the plant will probably be less permeable than naturally-occurring soils, thereby increasing runoff

The wetland areas in the site will be incorporated into the stormwater management plan. Runoff from the resource recovery plant and landfill will be directed through siltation mechanisms, then released into the conservation area. Detention and/or retention of surface water in the conservation area will provide some treatment. A control structure (weir) will be installed at the site outfall into the EDB-10 canal, to limit the surface water discharge. Previously, surface water discharge from the undeveloped site into the EDB-10 canal was uncontrolled. The landfills will be designed such that contaminated runoff (precipitation which comes in contact with active landfill) and uncontaminated runoff will not come in contact with one another. Stormwater runoff that comes in contact with landfill waste materials will be collected and treated like leachate. This collection and disposal system is separate from the stormwater management facilities.

c. Groundwater

Due to the highly environmentally sensitive nature of the shallow aquifer (i.e., unconfined aquifer with high horizontal and vertical hydraulic conductivity, and it being the major source aquifer for the potable water supply in Palm Beach County), the department is concerned about protecting this aquifer. Groundwater levels measured in wells on the site fluctuated generally through a range from +13 to +17.5 feet NVGD depending on location. The pattern of fluctuations and the ranges in water-level elevations in the deep wells compared to the shallow wells were similar but distinct; differences between the two depended upon the time in question relative to the

incidence of rainfall. The influence of the WCA (West Palm Beach Water Catchment Area) and other surface water bodies were also apparent in the water level data. The WCA has a major influence on the ground-water elevations and the gradient across the site. The affects of alternating rainfall and dry periods are superimposed on water levels dominantly controlled by the WCA. The quality of the groundwater beneath the site is good and the water can and will be used as a potable supply for the facility. There are no significant instances where drinking water Minimum Contaminant Levels (MCL's) are exceeded.

E.6 Air Quality Impacts

Palm Beach County proposes to construct a resource recovery facility near the intersection of the Beeline Highway and the Florida Turnpike in Palm Beach County, Florida. The facility will be a major source of the air pollutants particulate matter, sulfur dioxide, nitrogen oxides and carbon dioxide from the combustion of refuse derived fuel in two incinerators with provisions for adding a third incinerator at a later date. Thermal energy from the combustion will be used to produce steam for electric power generation.

a. Construction

The primary source of air pollutants during construction will originate from vehicular and heavy equipment exhaust emissions and fugitive dust from wind and the movement of equipment and vehicles over unpaved areas.

The acts of stripping and filling of the construction site will produce some dust clouds. Estimates by the EPA indicate that suspended dust levels from heavy construction activities approximate 1.2 tons per acre per month of construction activity. The applicant indicates that water sprays and other dust suppression measures will be applied on problem sites as necessary.

b. Operation

(i) Emissions

During operation of the facility, expected stack emissions

will be particulate matter, sulfur dioxide, nitrogen oxides, carbon monoxide, volatile organic compounds, lead, mercury, beryllium, fluorides and sulfuric acid mist. Other site emissions will arise from the preparation of the refuse derived fuel from municipal solid waste and from landfilling and truck movement around the site causing possible fugitive dust.

The emission of particulate matter from the boilers has been proposed to be controlled by an electrostatic precepitator (ESP). Such emissions are limited to 0.08 grains per dry standard cubic foot corrected to 12% carbon dioxide, 40 CFR 60 Subpart E, and 20% opacity of visible emissions, FAC Rule 17-2.600(1). The applicant has proposed to meet an emission limit of 0.03 grains per dry standard cubic foot corrected to 12% carbon dioxide.

(ii) Rule Applicability

The applicable air quality rules are contained in Chapter 17-2 of the Florida Administrative Code (FAC) and Chapter 40 of the Code of Federal Regulation (CFR). Two broad categories can be distinguished; nonattainment rules, or rules governing pollutants emitted in areas with measured concentrations of these pollutants exceeding the air quality standards; and attainment rules, or rules governing pollutants emitted within areas not exceeding an air quality standard for that pollutant. Palm Beach County is designated as a nonattainment area for the pollutant ozone, 40 CFR 81.310 and FAC Rule 17-2.410. For all other pollutants for which an air quality standard exists (criteria pollutants), the county is designated as attainment, 40 CFR 81.310 and FAC Rule 17-2.420.

Emissions of all pollutants are compared to the significant emission rates used to determine the Prevention of Significant Deterioration (PSD) review applicability, 40 CR 52.21(b)(23) and FAC Rule 17-2.500, Table 500-2, and nonattainment review applicability, FAC Rule 17-2.510(2). The proposed facility has the potential to emit more than 100 tons per year of one or more regulated pollutants and is, therefore, subject to review for PSD, 40 CFR 52.21 and FAC Rule 17-2.500(5)(c). PSD review includes a determination of Best Available Control Technology

(BACT) and an air quality analysis for each attainment or noncriteria pollutant that would be emitted in a significant amount as listed in Table 500-2 of FAC Rule 17-2.500. For the proposed facility, the applicant has addressed PSD review for 9 pollutants: particulate matter, sulfur dioxide, nitrogen oxides, carbon monoxide, lead, fluoride, sulfuric acid mist, beryllium, and mercury.

Nonattainment review, FAC Rule 17-2.510, is required for all nonattainment pollutants which are emitted at a rate of 100 tons per year or greater. The regulated pollutant for ozone is volatile organic compounds (VOC). The controlled emission rate of VOC from this facility is less than 100 tons per year and thus is not subject to nonattainment review.

The facility is subject to the provisions of the federal New Source Performance Standards, 40 CFR 60, Subpart E, for incinerators. Rules require that any standard established by BACT shall be, at a minimum, as stringent as an applicable New Source Performance Standard.

The proposed facility is also subject to the provisions of FAC Rule 17-2.620(2) which states that no person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor.

c. Best Available Control Technology

The applicant plans to construct a 3000 ton per day (TPD) solid waste-to-energy facility to be located near the intersection of the Beeline Highway and the Florida Turnpike in Palm Beach County, Florida. The municipal solid waste (MSW) will be processed into refuse derived fuel (RDF) and then combusted to produce steam for power generation.

The present plans are to construct a 2000 ton per day MSW processing facility and add an additional 1000 TPD capacity within 5 years. The ultimate plant capacity of 3000 TPD MSW will be processed into 1800 TPD RDF. The applicant desires to permit the facility at this ultimate capacity.

Each of the three energy recovery units will have an approximate maximum heat input of 350 million Btu per hour based

on a maximum heat content of 6,200 Btu/lb for RDF. Each incinerator will be scheduled to operate 8760 hours per year and on this basis the tonnage of the various air pollutants emitted were calculated. The applicant has projected the total maximum annual tonnage of regulated air pollutants emitted from the facility to be as follows:

Pollutant		Maximum Annual Emissions (Tons/Year)	PSD Significant Emissions Rate (Tons/Year)
Particulate	(PM)	214	25
Sulfur Dioxide	(SO ₂)	2957	40
Nitrogen Dioxide	(NO)	1314	40
Carbon Monoxide	(CO)	3942	100
Ozone	(O ₃)	65.6 (VOC)	40
Lead	(Pb)	4.6	0.6
Mercury	(Hg)	0.98	0.1
Beryllium	(Be)	0.003	0.0004
Fluorides	(F)	13.2	3
Sulfuric Acid Mist		0.131	7

The Palm Beach County solid waste energy recovery facility was reviewed according to Florida Administrative Code Chapter 17-17, Electrical Power Plant Siting and Rule 17-2.500,

Prevention of Significant Deterioration (PSD). The Bureau of Air Quality Mangement (BAQM) performed the air quality review for the siting committee, which includes this BACT determination. The certification number assigned to the proposed facility is PA 84-20.

Rule 17-2.500(2)(f)3 requires a BACT review for all regulated pollutants emitted in an amount equal to or greater than the significant emission rates listed in Table 500-2, Regulated Air Pollutants. The facility is located in an area classified as attainment for all air pollutants, except ozone. The emission limits for the air pollutant ozone (VOC's are the controlling pollutant) are determined through the application and employment of Lowest Achievable Emission Rate (LAER), Rule 17-2.640, if applicable.

BACT Determination Requested by the Applicant:

The following emission limits are based upon a unit ton of RDF charged.

PM	-	0.65 lbs	CO	-	12.0 lbs	Hg	-	0.003 lbs
SO ₂	-	9.0 lbs	Pb	-	0.014 lbs	F	-	0.04 lbs
NOx	-	4.0 lbs	Be	-	9.0 lbs	VOC	-	0.20 lbs

Date of receipt of a BACT application:

June 19, 1985

Date of publication with Florida Administrative Weekly:

July 12, 1985

BACT Determination by DER:

Pollutant	Emission Limit Per Unit
Particulate Matter	0.015 grains/dscf, corrected to 12% CO ₂
Sulfur Dioxide	4.0 lb/ton RDF charged
Nitrogen Oxides	4.0 lb/ton RDF charged
Carbon Monoxide	400 ppmv, corrected to 12% CO ₂
Fluorides	90% control
Sulfuric Acid Mists	90% control
Lead	0.005 lb/ton RDF charged
Mercury	3200 grams/day (1)
Beryllium	9.0 x E-6 lb/ton RDF charged
VOC	0.20 lb/ton RDF charged
Visible Emission	15% opacity

(1) Total emissions from the facility shall not exceed this value. Compliance with the mercury emission limit shall be demonstrated in accordance with 40 CFR 61, Method 101, Appendix B.

Compliance with limitations for sulfur oxides, particulate matter, carbon monoxide, fluoride, sulfuric acid mist, VOC, lead, and nitrogen oxides will be demonstrated in accordance with Florida Administrative Code Rule 17-2.700, DER Methods 1, 2, 3, and 6, and 40 CFR 60 Appendix A; Method 4, 5, 7, 8, 10, 12, 13A or 13B, and 18. Compliance with the opacity limit shall be demonstrated in accordance with Florida Administrative Code Rule 17-2.700(6)(a)9., DER Method 9.

A continuous monitoring system to measure the combustion temperature plus CO, O₂, CO₂, and the opacity of the stack's emissions shall be installed, calibrated, and maintained in accordance with the provisions of Rule 17-2.710, Continuous Emission Monitoring Requirements. The CEM's must be installed and operational prior to compliance testing.

BACT Determination Rationale:

Each RDF incinerator will have a charging rate more than 50 tons per day, and therefore, is subject to the provisions of 40 CFR 60.50, Subpart E, New Source Performance Standards (NSPS). The NSPS standard regulates only particulate matter. The particulate matter standard is 0.08 grains/dscf, corrected to 12% CO₂. This NSPS was promulgated in 1971 and no longer reflects state-of-the-art for control of particulate emissions. Recent stack testing data for MSW incinerators indicates that both electrostatic precipitator and fabric filter control technology are capable of controlling particulate emissions well below the applicant's proposal of 0.03 grains/dscf. Based on the control technology available a particulate matter emission limit of 0.015 grains/dscf corrected to 12% CO₂ is judged to represent BACT. All the other requirements as set forth in the NSPS, Subpart E, will apply.

The Department has determined the emission limit for SO₂ to be 4.0 pounds per ton of RDF charged into the incinerator. RDF components that appear to be major contributors of sulfur include rubber, plastics, leather, paper, and paper products.

The SO₂ emission limit was determined to be BACT by evaluating limits set for similar facilities in Florida and other states' determinations which have indicated that an emission limit of 4.0 pounds per ton of RDF charged is reasonable based on the heat content of the fuel. The amount of SO₂ emitted would be comparable to the burning of distillate oil having less than a 0.5% sulfur content. Burning low sulfur fuel is one acceptable method of controlling SO₂ emissions. The installation of a flue gas desulfurization system to control SO₂ emissions alone is not warranted when burning RDF.

The mercury emission limit determined as BACT is equal to the National Emission Standard to Hazardous Air Pollutants (NESHAPs), 40 CFR 61.50, Subpart E, for municipal waste water sludge incineration plants. Although this standard does not apply to the incineration of municipal solid waste, it is an emission limit that should not be exceeded. The BACT is determined to be 3200 grams per day for the entire facility. This level of mercury emissions is not considered to have a major impact on the environment.

The uncontrolled emission of beryllium, according to the California report, when firing MSW is estimated to be 6.2×10^{-6} pounds per million Btu. Uncontrolled beryllium emissions would be approximately 11 grams per 24 hours or 0.01 TPY. The operating temperature of the particulate matter emission control device will be below 500°F. Operation below this temperature is necessary to force adsorption/condensation of beryllium oxides, present in the flue gas stream onto available fly ash particles for subsequent removal by the particulate control device. The annual beryllium emissions are estimated at 0.003 tons per year. This amount of beryllium emitted is considered to have a negligible impact on the environment. The emission factor of 9.0×10^{-6} lb/ton RDF proposed by the applicant is judged to be BACT. If, however, beryllium containing waste as defined in the National Emission Standards for Hazardous Air Pollutants (NESHAPs), Subpart C, Subsection 61.31(g), is charged into the

incinerator, emissions of beryllium to the atmosphere shall not exceed 10 grams per 24 hours or an ambient concentration of 0.01 ug/m³, 30 day average. Compliance with this beryllium emission limit will be in accordance with the NESHAPs, Subpart C.

The applicant has projected abated lead and fluoride(s) emissions to be 4.6 and 13.2 tons per year respectively. These amounts are well in excess of the significant emission rates given in Florida Administrative Code Rule 17-2.500, Table 500-2.

With respect to lead emissions, two conditions are needed to achieve high removal efficiencies of metallic compounds emitted at refuse burning facilities: (1) operation of particulate matter control equipment at temperatures below 260°C (500°F), and (2) consistently efficient removal of submicron fly ash particles. The maximum temperature of the incinerator combustion gases at the inlet to the particulate control device is estimated to be 450°F. At this temperature the particulate control equipment would be capable of removing the lead emissions from the flue gas stream.

When flue gas temperatures are lowered below 260°C (500°F), metallic compounds are removed from the vapor phase by adsorption and condensation preferentially on fine particles with submicron particles receiving the highest concentrations of metals. Properly designed and operational fabric filter systems appear at this time to offer the best method for consistent and efficient removal of fine (and in particular submicron) fly ash. Removal efficiencies of fine fly ash using these systems can be in excess of 99% with respect to MSW incinerators. Studies have indicated the weight percent of submicron particles emitted from combustion is on the order of 45% which clearly indicates the need for efficient control of particles in this range.

The California Air Resources Board (CARB) report on resource recovery facilities indicates that the highest uncontrolled lead emission rate from refuse-fired incinerators tested is 16,000 ug/MJ. Based on a heating value of 6,200 Btu per pound of refuse, this equates to an emission rate of 0.46 lbs per ton refuse charged. Recent testing of baghouses and high efficiency

four field electrostatic precipitators indicates that lead removal efficiencies greater than 99% are being achieved with both types of control devices. Taking into consideration this efficiency and the maximum emission rate, 0.005 lbs per ton of refuse charged is judged to be reasonable as BACT for lead emissions.

Emissions of fluoride originate from a number of sources in the refuse. The mechanisms of governing fluoride release and formation of hydrogen fluoride at refuse-burning facilities are probably similar to those for hydrogen chloride. The control of fluorides can be reduced at refuse-burning plants by removal of selected refuse components with high fluoride contents, and the use of flue gas control equipment. In view of the fact that it is proposed to incinerate materials that contain fluoride, BACT for the control of fluorides is installation of a wet or dry flue gas scrubber system. The addition of a scrubber system would also provide control for SO₂ emissions addressed earlier in this analysis as well as other acid gases which will be addressed in other sections of the analysis.

During combustion of municipal solid waste, NO_x is formed in high temperature zones in and around the furnace flame by the oxidation of atmospheric nitrogen and nitrogen in the waste. The two primary variables that affect the formation of NO_x are the temperature and the concentration of oxygen. Techniques such as the method of fuel firing to provide correct distribution of combustion air between overfire and underfire air, exhaust gas recirculation, and decreased heat release rates have been used to reduce NO_x emission. A few add-on control techniques such as catalytic reduction with ammonia and thermal de-NO_x are still experimental and are not considered to be demonstrated technology for the proposed project. State-of-the-art control of the combustion variables will be used to limit NO_x emissions at 4.0 pounds per ton of RDF charged. This level of control is judged to represent BACT.

Carbon monoxide is a product of incomplete combustion where there is insufficient air. Incomplete combustion will also

result in the emissions of solid carbon particulates in the form of smoke or soot and unburned and/or partially oxidized hydrocarbons. Incomplete combustion results in the loss of heat energy to the boiler. The applicant proposes that good equipment design and practice plus continuous CO monitors are BACT for carbon monoxide. The department feels that an emission limit for carbon monoxide which would correspond to optimum combustion is needed. Based on technical information relating good combustion practices to the control of dioxin emissions and BACT determinations from other states, a limit of 400 ppmv corrected to 12% CO₂ is judged to represent BACT for carbon monoxide emissions.

Furthermore, CO has a calorific value of 4347 Btu/lb and when discharged to the atmosphere represents lost heat energy. Since heat energy is used to produce the steam which drives the generator to produce electric power, there is a strong economic incentive to minimize CO emissions.

Hydrocarbon emissions, like carbon monoxide emissions, result from incomplete oxidation of carbon compounds. Control of CO and HC emissions can be mutually supportive events. BACT for hydrocarbons is good combustion practices which correspond to the carbon monoxide limitation above.

Sulfur dioxide produced by combustion of sulfur containing materials can be oxidized to SO₃ which can then combine with water vapor to produce sulfuric acid mist. The applicant has estimated sulfuric acid mist emissions to be 0.131 tons per year, assuming 99% removal by the electrostatic precipitator (ESP).

In accordance with information supplied by the applicant, data has shown a 1.6 percent conversion to sulfuric acid mist from the SO₂ emission rate. Based on the SO₂ emissions rate supplied by the applicant, uncontrolled sulfuric acid mist emissions are estimated to be 47.3 tons per year. The department has not seen any information or data to substantiate the applicant's claim that the sulfuric acid mist would be a liquid aerosol which would be adsorbed on fly ash particulate and collected at an efficiency of 99%. Flue gas scrubbers have

demonstrated 90+% control of sulfuric acid mist emissions and are considered to be BACT for this proposed facility.

The type of air pollutants emitted when incinerating plastics depends on the atomic composition of the polymer. Plastics composed of only carbon and hydrogen or carbon, hydrogen and oxygen form carbon dioxide and water when completely combusted. Incomplete combustion yields carbon monoxide as the major pollutant.

Plastics containing nitrogen as a heteroatom yield molecular nitrogen, some NO_x , carbon dioxide, and water when completely combusted. Incomplete combustion may yield hydrogen cyanide, cyanogen, nitrites, ammonia and hydrocarbon gases. Complete combustion of plastics containing halogen or sulfur heteroatoms form acid gases such as hydrogen chloride, hydrogen fluoride, sulfur dioxide, carbon dioxide, and water. Halogen or sulfur compounds can form from incomplete combustion of the plastic. Polyvinyl chloride (PVC), one of the many polymers, has been implicated as causing the most serious disposal problem due to the release of hydrogen chloride (HCl) gas when incinerated. This problem has long been realized resulting in other polymers being used in packaging. For example, the weight percent of chlorine in polyurethane is 2.4, with only trace amounts in polyethylene and polystyrene, as compare to the weight percent of 45.3 in PVC.

A recent study of MSW incineration performed for the USEPA has indicated that the plastics content of refuse is expected to grow by from 300-400% from the year 1968 to 2000. This increase can be expected to increase uncontrolled HCl emissions from municipal waste incineration by roughly 400% from 1970 to the year 2000. The applicant has stated that HCl emissions from the incinerator are estimated to be 1150 tons per year based on an emission factor of 3.5 lbs per ton of RDF incinerated. In accordance with recent information available and test results from resource recovery facilities the department feels that HCl emissions have been substantially underestimated.

Data contained in the California Air Resources Board report

on resource recovery facilities states that at least 70 percent of refuse chlorine is converted to HCl at RDF-fired facilities. Based on the RDF chlorine composition of 0.73 percent submitted in the application, the resulting HCl emissions would be at least 10.2 pounds per RDF charged which equates to at least 3,351 tons per year. This value is much higher than the applicant's estimate but is believed to be more representative of these facilities at this time. By comparison, the Mid-Connecticut 2,000 ton per day RDF facility, which was permitted in April 1985, has estimated HCl emissions to be 12 pounds per ton charged.

Emissions of HCl at refuse incineration facilities can be reduced by removal of selected refuse components with high chlorine contents (source separation), combustion modification, and the use of flue gas control equipment. Although the combustor configuration may influence the amount of chlorine conversion, combustion modification is not a viable means of controlling HCl emissions.

Potential emissions of HCl can be reduced significantly by removing plastic items from the waste stream. This is particularly true when the plastics are the PVC type explained earlier. With the exception of limited recycling efforts, source separation of plastics has not been demonstrated and costs are uncertain at this time. In addition to this, the combustion of plastics may be favorable due to their relatively high heat of combustion.

Plastic materials have a high heat of combustion, for example, coated milk cartons - 11,300 Btu/lb, latex - 10,000 Btu/lb and polyethylene 20,000 Btu/lb. For comparison, newspaper and wood have a heat content of 8,000 Btu/lb, and kerosene 18,900 Btu/lb. Here again there is economic incentive to obtain as complete combustion as possible.

At this time flue gas controls are the most conventional means of reducing HCl emissions at refuse burning facilities. Based on the estimates of HCl emissions and the trend for increases due to higher percentages of plastics in future waste

streams, the installation of a wet or dry scrubber to control the acid gases would provide an added benefit of controlling HCl emissions.

An analysis of a proposal to construct a RDF incinerator in 1986 would not be complete unless the subject of dioxins was addressed.

Dioxin is a hazardous material that has received widespread public concern. It is found in trace amounts whenever substances containing chlorine (for example, plant and animal tissues and plastics) are burned. It is also an impurity that can be found in some herbicides, such as "2,4,5-T".

The applicant has stated that excellent combustion controls and auxiliary fuel systems are designed to maintain exit gas temperatures at a level above the control threshold where dioxin could be formed. The department agrees with the applicant that optimum combustion is essential to control the emissions of dioxins. Optimum combustion pertaining to the destruction of dioxins needs to be continually demonstrated by monitoring combustion temperature plus CO, O₂ and CO₂ levels as indications of combustion efficiency. In addition, scientists concerned with the destruction of dioxins in resource recovery facilities generally agree that a CO concentration limit of 400 ppmv, corrected to 12% CO₂ is a good indicator that optimum combustion is present. This CO limit is judged to represent BACT for carbon monoxide also. Combustion temperatures must be maintained at least 1800°F with residence times being at least 1 second.

Although the subject of dioxin is new, and relatively little is known, two important things stand out: 1) Dioxin is readily minimized in properly designed and operated BACT-equipped facilities, and 2) very small amounts cause demonstrable health effects. Although most of the reduction in dioxin emissions is believed to take place in the combustion chamber, the installation of acid gas control and a high efficiency particulate control device (grain loading not to exceed 0.015 gr/dscf) would provide an additional control strategy to remove dioxins from the flue gases based on the assumption which is

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thought by many that dioxins can be adsorbed on the surface of particulate matter. Thus, the greater the TSP collection, especially submicron particles, the better the dioxin control.

Throughout this BACT determination much emphasis has been placed on the controls that are needed to satisfy the BACT requirements. Although the department does not have the authority to stipulate the type of control equipment that should be used on a facility (i.e., ESP vs. baghouse; dry vs. wet scrubber), a dry scrubber used in conjunction with a baghouse appears to be the best method for controlling emissions from this type of facility.

Electrostatic precipitators (ESP's) without acid gas control remove Total Suspended Particulates (TSP) only, collecting submicron particles with difficulty. Submicron particle collection can be done, but as with any control, effectiveness and reliability are questionable in this area. The need for acid gas controls is clearly defined in this analysis and test data show fabric filters to be less sensitive to changes in flue gas volumes, inlet concentrations, and small excursions in temperature than ESP's usually employed at refuse burning facilities.

The recommendation that a dry scrubber baghouse combination should be used as the control strategy for the resource recovery facility is not warranted if the economic costs of installing and operating the recommended control technology outweigh the benefits of controlling the pollutants that would be controlled by the equipment.

The applicant has stated that a dry scrubber system for a 750 TPD unit would cost approximately 2.2 million dollars per year. Assuming that the dry scrubber controls 70% SO₂ and 90% of the acid gases, an analysis of the cost required to control tonnage of pollutants removed is required.

Based on the cost of controlling SO₂ (70% of 2957) and HCl* (90% of 3,351) alone, the installation and operation of a scrubber unit would be \$1,298 per ton of pollutants controlled (\$0.65 per pound). This is not excessive compared to costs of up

to \$2,000 per ton which are considered reasonable in developing EPA New Source Performance Standards. Using the applicant's estimate of 2.2 million dollars for each of three units, the additional cost per ton of MSW handled would be approximately \$6.00. It should be noted that the applicant's annual cost estimate for the control equipment is relatively high in comparison to actual costs projected for adding acid gas scrubbers to other resource recovery facilities.

A review of economic analyses performed for several proposed resource recovery facilities indicates that the highest cost of adding acid gas control was \$4.37 (1984 dollars) per ton of refuse incinerated. It should be noted that an accurate comparison of projected costs can only be determined by equating the amortization periods, interest rates, and site specific costs. The Palm Beach County proposal estimated the cost of adding acid gas control using an interest rate of 11% which is high for the present and is likely one of the discrepancies that account for the difference in the proposed cost.

Previous analyses completed for similar facilities have indicated that the cost of using the scrubber-baghouse combination was not unreasonable compared to using an electrostatic precipitator alone. At rated capacity, a unit proposed for installation in the state of Connecticut showed that the cost of using the scrubber-baghouse combination and the precipitator alone were \$3.36 and \$1.83 respectively per ton of refuse charged. This comparison indicates the costs per ton of pollutant removed using the scrubber-baghouse combination are indeed reasonable when compared to the costs of using an electrostatic precipitator alone. This slight differential in cost can be attributed to the following:

- 1) a scrubber cools the gases and reduces their volume which reduces the size requirement (cost) of the particulate control device, and 2) a dry scrubber is mechanically a simple device and capable of off-site fabrication.

The applicant has also indicated in their economic analysis that the cost of using the dry scrubber-baghouse combination is

to \$2,000 per ton which are considered reasonable in developing EPA New Source Performance Standards. Using the applicant's estimate of 2.2 million dollars for each of three units, the additional cost per ton of MSW handled would be approximately \$6.00. It should be noted that the applicant's annual cost estimate for the control equipment is relatively high in comparison to actual costs projected for adding acid gas scrubbers to other resource recovery facilities.

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The applicant has also indicated in their economic analysis that the cost of using the dry scrubber-baghouse combination is

only slightly higher than using a dry scrubber in conjunction with an ESP. The difference amounted to \$0.17 per ton of MSW handled. The actual cost of using the dry scrubber-baghouse combination was well presented in the recent hearing of the South Broward County Solid Waste Energy Resource Facility.

During testimony at the hearing, Dr. Aaron Teller, President of Teller Environmental Systems, guaranteed that his company could provide acid gas and particulate control using dry scrubbing and fabric filter technology for \$6.00 per ton of municipal solid waste incinerated. This cost would utilize equipment that is capable of reducing, SO₂ emissions by 70%, HCl by 90%, HF by 95%, heavy metals by 99%, and controlling particulate emissions to 0.01 grains/dscf, corrected to 12% CO₂. These control efficiencies are much more stringent than those proposed by the applicant, yet the guaranteed cost of providing the high efficiency control for both particulates and acid gases is equal to the cost provided by the applicant for acid gas control alone. In addition, other states such as Connecticut are seeing that actual tipping fees have increased much less than expected when the dry scrubber-baghouse combination was imposed instead of using an ESP only for controlling emissions from resource recovery facilities.

At a recent conference held in Washington D.C., entitled "Acid Gas and Dioxin Control For Waste-to-Energy Facilities", a topic of great concern was the methods in which emissions from resource recovery facilities should be controlled. The general consensus of the conference speakers (including EPA) is that resource recovery facilities are best controlled with a dry scrubber-baghouse combination.

Based on the scrubber's ability to control SO₂, HCl*, and other acid gas emissions, and the size of the projected resource recovery facility (the cost to control emissions on a per ton of refuse charged decreases as the size of the facility increases), the department feels that the cost of adding a flue gas scrubber to the precipitator or using the dry scrubber-baghouse combination is not unreasonable for this facility. Assuming a

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realistic figure of 400,000 households being served by the facility when construction begins and Dr. Teller's cost estimate, the cost of total particulate and acid gas control would amount to \$1.25 per month per household with approximately half of the cost going to acid gas control and the other half to particulate control. In view that the actual number of households will be greater when the facility actually goes on line and it is known that businesses and industry will also generate refuse and share the cost, the actual cost per household is expected to be even less. The added cost according to general equipment vendors, designers and contractors is typically in the range of 2 to 5 percent of the total cost of the project and would be offset by the immediate economic and environmental benefits realized by the installation.

(* Hydrochloric acid [HCl], though not listed as a regulated pollutant for MSW incinerators, is intensely corrosive and should be included in the economic analysis when justifying the addition of flue gas scrubbing equipment. The EPA is currently requiring hazardous waste incinerators emitting more than four (4) pounds of HCl per hour to achieve removal efficiency of up to 99%. A minimum of 99% removal efficiency is required when removal at this efficiency will not reduce emissions to four pounds per hour.)

The air quality impact of the proposed emissions has been analyzed. Atmospheric dispersion modeling has been completed and used in conjunction with an analysis of existing air quality data to determine maximum ground-level ambient concentrations of the pollutant subject to BACT. Based on these analyses, the department has reasonable assurance that the proposed solid waste recovery facility in Palm Beach County, subject to these BACT emission limitations, will not cause or contribute to a violation of any PSD increment or ambient air quality standard.

d. Prevention of Significant Deterioration

i. Introduction

The proposed resource recovery facility will emit in

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d. Prevention of Significant Deterioration

i. Introduction

The proposed resource recovery facility will emit in

PSD-significant amounts nine regulated pollutants. These are the criteria pollutants particulate matter (PM), sulfur dioxide (SO₂), nitrogen oxides (NO_x) carbon monoxide (CO), and lead (Pb), and the non-criteria pollutants mercury (Hg), beryllium (Be), fluorides (F⁻), and sulfuric acid mist (H₂SO₄ mist). The emission of volatile organic compounds (VOC) is addressed in the nonattainment area review section. Many other unregulated pollutants are also emitted into the ambient air of which two, hydrogen chloride (HCl) and dioxins (2,3,7,8-TCDD), are addressed in this report.

~~The~~ air quality impact analysis required by the PSD regulations for the subject pollutants includes:

- An analysis of existing air quality;
- A PSD increment analysis (for SO₂ and PM only);
- An Ambient Air Quality Standards (AAQS) analysis;
- An analysis of impacts on soils, vegetation, and growth-related air quality impacts; and
- A "Good Engineering Practice" (GEP) stack height determination.

The analysis of existing air quality generally relies on preconstruction monitoring data collected in accordance with EPA-approved methods. The PSD increment and AAQS analysis depends on air quality dispersion modeling carried out in accordance with EPA guidelines.

Based on these required analyses, the department has reasonable assurance that the proposed source, as described in this report and subject to the conditions of approval proposed herein, will not cause or contribute to a violation of any PSD increment or ambient air quality standard. A discussion of the modeling methodology and required analysis follows.

ii. Modeling Methodology

Four EPA-approved air quality dispersion models were used by the applicant in the impact analysis. These models were the point-plume (PTPLU) model, the point-distance (PTDIS) model, and

the industrial source complex short-term (ISCST) and long-term (ISCLT) models. The PTPLU and PTDIS models are screening models used in preliminary analysis and the ISC models are refined models for which the final estimates on air quality impacts are made.

All of these models determine ground-level concentrations of inert gases or small particles emitted into the atmosphere by point sources. They incorporate elements for plume rise, transport by the mean wind, and gaussian dispersion. In addition, the ISC models allow for area and volume type sources, separation of sources, building wake downwash, and various other input and output features. The PTDIS and PTPLU models were used primarily to determine the appropriate receptor locations to be used in the ISC model runs.

Palm Beach County is initially proposing to build a facility capable of handling 2000 TPD of municipal solid waste (MSW) of which 1200 TPD of refuse derived fuel (RDF) is produced and incinerated. In the future, the facility will be expanded to handle 3000 TPD of MSW, generating 1800 TPD of RDF. Although the current certification process will permit only the initial proposal, the applicant has completed the modeling assuming the ultimate capacity. In addition, the applicant has anticipated that on a short-term basis (24-hours or less) the facility could produce as much as 2100 TPD of RDF. As such, all modeling completed by the applicant assumes that 2100 TPD of RDF is burned on a short-term basis, and 1800 TPD on an annual average basis.

All of the modeling completed by the applicant was for SO₂ only. Predicted concentrations for all other pollutants were determined by ratioing their emission rate to the SO₂ emission rate and multiplying by the predicted SO₂ concentration.

The emission rates used by the applicant to determine the impacts of each pollutant were those proposed by the applicant to be BACT. In many cases the department has recommended different BACT emission limitation for various pollutants. The applicant has proposed the installation of an electrostatic precipitator (ESP) to meet their BACT determination. To meet the department

the industrial source complex short-term (ISCST) and long-term (ISCLT) models. The PTPLU and PTDIS models are screening models used in preliminary analysis and the ISC models are refined models for which the final estimates on air quality impacts are made.

All of these models determine ground-level concentrations of inert gases or small particles emitted into the atmosphere by point sources. They incorporate elements for plume rise, transport by the mean wind, and gaussian dispersion. In addition, the ISC models allow for area and volume type sources, separation of sources, building wake downwash, and various other input and output features. The PTDIS and PTPLU models were used primarily to determine the appropriate receptor locations to be used in the ISC model runs.

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BACT limitations it will be necessary to install additional or different control equipment at the facility. This different control equipment may change the stack effluent characteristics (e.g., stack gas temperature) used in the modeling analysis.

The department, in reviewing the modeling results submitted by the applicant, adjusted the predicted concentrations for each pollutant to conform to the department-determined BACT limitations. No adjustment was made for the potentially different stack gas emission characteristics. This adjustment was not made because it is unknown just what the new emission characteristics would exactly be and because of the relatively low predicted impacts of the proposed facility, it is unlikely that a significant change would occur.

Table d-1 lists the source parameters and emission characteristics used in the modeling for the proposed facility. This facility is actually composed of three units, each with a flue emitting from a common stack. The exit velocity and stack diameters given is appropriate to each separate flue. Also, indicated on the table are the dimensions of the building housing the refuse incinerators. These dimensions are used within the model to calculate any potential building wake downwash effects which may occur for certain meteorological conditions. The location of, and stack emission parameters for, the other sources in the area that were explicitly modeled are also included in the table. Additional sources, not included here, have been evaluated by the department. The impacts of these sources are discussed in later sections.

The emission rates used in the modeling for each emitted, regulated pollutant are listed in Table d-2. The emission rates of pollutants of additional environmental concern, HCl and dioxin, are also included in the table, however, no modeling was performed. These emission rates are based on the departments' BACT, where applicable. An emission factor in terms of lb/ton of RDF is calculated for pollutant by pollutant comparison. The lb/hr emission listed for each pollutant is based on 2100 TPD of RDF and the ton/yr emission is based on 1800 TPD of RDF.

Table d-1
Palm Beach County Resource Recovery Facility
Sources Used in Modeling

Source	UTM-E (km)	UTM-N (km)	Stack Height (m)	Exit Temp. (K)	Exit Velocity (m/s)	Stack Diameter (m)	Bldg. Height (m)	Bldg. Width (m)	Bldg. Length (m)
Palm Beach (1) RRF	585.820	2960.474	76.2	505	24.90	2.04	36.58	33.53	71.02
Pratt & Whitney	565.5	2974.4	20.0	533	10.40	2.29			
Lake Worth Utilities	592.8	2943.7	18.3	433	6.80	1.52			
	592.8	2943.7	18.3	434	6.20	1.52			
	592.8	2943.7	38.1	408	7.70	2.13			
	592.8	2943.7	38.1	408	9.70	2.29			
	592.8	2943.7	22.9	450	18.30	3.05			
FPL Riveria Beach	594.2	2960.6	45.7	430	6.30	4.57			
			90.8	408	18.90	4.88			

(1) Three 600 TPD Units emitting from a common stack. Exit velocity and stack diameter are appropriate to each flue within the common stack.

Table d-2
Palm Beach County Resource Recovery Facility
Maximum Emission Rates (1)

Pollutant	(lb/ton RDF)	(lb/hr)(2)	(ton/yr)(3)
PM	0.33	28.4	107
SO ₂	4.0	350.	1314
NOx	4.0	350.	1314
CO	3.94	344.4	1295
VOC	0.20	17.5	65.6
Pb	0.005	0.437	1.6
Hg	0.004	0.341	1.29
Be	9.0E-6	9.9E-5	3.0E-3
F ⁻	0.004	0.349	1.3
H ₂ SO ₄ mist	0.014	1.26	4.7
HCl (4)	10.2	892.5	3351.
2,3,7,8,-TCDD(4)	8.5E-8	7.4E-6	2.8E-5

(1) Based on department BACT

(2) Based on 2100 TPD RDF; used in short-term modeling

(3) Based on 1800 TPD RDF; used in long-term modeling

(4) Not a PSD regulated pollutant; emission rate given is uncontrolled control of this pollutant will result from controlling the other regulated pollutants.

Five years of sequential hourly meteorological data were used in the modeling analyses. The surface data used were National Weather Service (NWS) data collected at West Palm Beach, during the period 1970-1974. The upper air data for this same period were collected at Miami. Since five years of data were used, the highest, second-high, short-term predicted concentrations are compared with the appropriate ambient standard or PSD increment. For the long-term (annual) modeling, these same data were compiled into annual joint frequency distributions of wind direction, wind speed, and atmospheric stability.

The initial set of model runs completed considered only the impact of the proposed facility. The ISCST model was used for all short-term concentration predictions and the ISCLT was used for the annual average concentration predictions. A dense, polar coordinate grid of receptors were placed around the facility with 60 radials placed every 6 degrees apart. Seven other radials were included along directions in which other facilities aligned. Each radial contained a receptor at distances of 0.73, 0.8, 0.9, 1.0, 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 2.0, 2.5, 5.0, 10.0, 15.0, 20.0, 25.0, and 50.0 kilometers from the center of the polar grid. The initial receptor distance of 0.73 kilometers is the distance of the nearest property boundary. Inside this boundary the general public does not have casual access.

This initial set of model runs defined the maximum impacts expected from the proposed facility. They also defined the significant impact area (SIA). The SIA extends to the farthest distance from the facility to which the increased emissions contribute significantly. Significant impact is defined in Rule 17-2.100(170) for SO₂, PM, NO₂, and CO. For the proposed facility the SIA extends to a distance of 10 kilometers.

A second set of model runs were completed, this time including the surrounding facilities which may interact with the proposed new facility. Three facilities were included: Pratt and Whitney, Florida Power and Light-Riviera Beach, and Lake

Worth Utilities. The combined impact of these sources plus the addition of a background concentration to account for all sources not modeled is compared to ambient air quality standards.

Additional modeling completed by the department included four other sources which could potentially interact with the proposed facility. These other sources are U.S. Sugar-Bryant, Osceola Farms, and Atlantic Sugar, three sugar cane companies located 36 km or greater to the west and Parkway Asphalt located approximately 9.5 km from the facility. The impact of these facilities on the SO₂ concentrations were added to the impact of the other facilities for comparison to air quality standards.

More details on the modeling methodology can be found in the application submitted to the department.

iii. Analysis of Existing Air Quality

Preconstruction ambient air quality monitoring is required for all pollutants subject to PSD review. In general, one year of quality assured data using an EPA reference, or the equivalent monitor must be submitted. Sometimes less than one year of data, but not less than four months, may be accepted when department approval is given.

An exemption to the monitoring requirement can be obtained if the maximum air quality impact, as determined through air quality modeling, is less than a pollutant-specific de minimus concentration. In addition, if current monitoring data already exist and these data are representative of the proposed source area, then at the discretion of the department these data may be used.

The predicted maximum air quality impacts of the proposed facility for those pollutants subject to PSD review are given in Table d-3. The monitoring de minimus level for each pollutant is also listed. Sulfuric acid mist is not listed because there is no de minimus level for it. All pollutants have maximum predicted impacts below their respective de minimus values.

Therefore, specific preconstruction monitoring is not required

Table d-3
 Palm Beach County Resource Recovery Facility
 Maximum Air Quality Impacts for
 Comparison to Deminimus Ambient Levels

Pollutant and Averaging Time	Predicted Impact (ug/m ³) (1)	Deminimus Ambient Impact Level (ug/m ³)
PM (24-hour)	1.0	10
SO ₂ (24-hour)	12.2	13
CO (8-hour)	25.8	575
NO ₂ (24-hour)	12.2	14
Pb (24-hour)	0.002	0.1
F ⁻ (24-hour)	0.01	0.25
Hg (24-hour)	0.01	0.25
Be (24-hour)	0.00003	0.0005

(1) Predicted highest, second-high concentrations using department BACT emission limitation.

for any pollutant.

Table d-4 lists, however, the measured ambient concentrations of all pollutants being currently monitored within 10 kilometers of the proposed facility. These values are used to estimate current background levels.

iv. PSD Increment Analysis

The PSD increments represent the amount that new sources may increase ambient ground-level concentrations of SO₂ and PM. At no time, however, can the increased emissions of these pollutants cause or contribute to a violation of the ambient air quality standards.

The proposed facility is located in a Class II area and must meet the increments defined for this class. The nearest Class I area, the Everglades National Park, is located 123 kilometers to the south and west. No impact analysis is required at that distance.

All SO₂ and PM emissions increases from sources constructed or modified after the baseline date (December, 1977) will consume PSD increment. In addition, all SO₂ and PM emission increases associated with construction or modification of major sources which occurred after January 6, 1975, will consume increment.

All of the emissions of SO₂ and PM at the proposed facility itself will consume PSD increment. Modeling of the proposed facility by itself shows that there will be no significant ambient impact for PM. As such, no other increment consuming sources were evaluated. For SO₂, the only other potential increment consuming sources are: Parkway Asphalt located 9.5 km away; Atlantic Sugar, 36.0 km; Osceola Farms, 42.3 km; and U.S. Sugar-Bryant, 47.6 km. The department has completed its own analysis of these sources contribution to total PSD increment consumption. Screening modeling using PTPLU or ISCST shows that the maximum increment consumed by Parkway Asphalt is 1.2 ug/m³, annual average, 4.7 ug/m³, 24-hour average and 10.6 ug/m³, 3-hour average; the maximum increment consumed by the three other sources combined is 1.3 ug/m³ annual average, 5.3 ug/m³, 24-hour

Table d-4
Palm Beach County Resource Recovery Facility
Monitoring Data Within 10 km of Project

Site	Location with Respect to Proposed Facility		Pollutant	Concentration 1984 (1)				
	Direction (degrees)	Distance (km)		Annual (ug/m ³)	24-hour (ug/m ³)	8-hour (mg/m ³)	3-hour (ug/m ³)	1-hour (ug/m ³)
4760-001	126	9.2	CO NO ₂	27		5		16
4760-003	126	9.2	PM	34(2)	63			
3060-001	53	8.7	PM	29(2)	52			
3840-003	74	6.9	SO ₂	10	36		61	

(1) Short-term (i.e., 24-hour average or less) concentrations are second-highest values
(2) Geometric Mean

average and 19.6 ug/m³, 3-hour average.

The maximum increment consumed by the proposed source itself is 1.7 ug/m³, annual average, 12.2 ug/m³, 24-hour average, and 33.0 ug/m³, 3-hour average. A conservative estimate of the total increment for SO₂ consumed is obtained by simply adding all of the above values for each averaging time together. This is conservative since they occur at different times and location, and for different meteorological conditions. Table d-5 summarizes the PSD increment analysis. The department has reasonable assurance that neither the PM or SO₂ PSD increments will be exceeded.

v. AAQS Analysis

Given existing air quality in the area of the proposed facility, emissions from the new facility are not expected to cause or contribute to a violation of an AAQS. Table d-6 shows the results of the AAQS analysis.

Of the pollutants subject to review, only the criteria pollutants PM, SO₂, CO, NO₂, and Pb have an AAQS with which to compare. Dispersion modeling was performed by the applicant as described in the section on modeling methodology. Additional modeling was performed by the department to include sources of SO₂ not included by the applicant. Additional sources of pollutants in the area surrounding the proposed facility were included only for SO₂. Predicted maximum impacts due to the proposed source itself for the other criteria pollutants were small enough so that it was not necessary to evaluate the impact of other sources. For SO₂, major sources within 50 km were evaluated for impact near the new facility

The additional modeling completed by the department included emissions from U.S. Sugar, Osceola Farms, Atlantic Sugar, and Parkway Asphalt. The impacts of these sources have been included in the results in Table d-6. As in the PSD increment analysis, the maximum impacts of the these sources were simply added to the combined impact from the proposed source, FPL Riviera Beach, Lake Worth Utilities, and Pratt and Whitney.

Table d-5
 Palm Beach County Resource Recovery Facility
 PSD Increment Analysis

Pollutant and Averaging Time	Allowable Class II Increment (ug/m ³)	Predicted Increased Concentration (ug/m ³)	Percent Consumed
SO ₂ (1)			
3-hour	512	63	13
24-hour	91	22	24
Annual	20	4	20
PM (2)			
24-hour	37	1	3
Annual	19	<1	<1

(1) Includes increment consuming emissions from Parkway Asphalt, Atlantic Sugar, Osceola Farms, and U.S. Sugar-Bryant.

(2) Palm Beach RRF only.

Table d-6
Palm Beach County Resource Recovery Facility
Ambient Air Quality Standards Analysis

Pollutant and Averaging Time	Predicted Impact of Project (ug/m ³)(1)	Predicted Impact All Sources (ug/m ³)	Existing Background (ug/m ³)(2)	Total Impact (ug/m ³)	FAAQS (ug/m ³)
SO₂					
3-hour	33	571	61	632	1300
24-hour	12	108	36	144	260
Annual	2	12	10	22	60
PM					
24-hour	1 (3)	-	63	-	150
Annual	<1 (3)	-	34	-	60
NO₂					
Annual	2	-	27	29	100
CO					
1-hour	60 (3)	-	16000	-	40000
8-hour	26 (3)	-	5000	-	10000
Pb					
3-month	<0.1(4)	-	-	-	1.5

(1) Highest, second-highest impacts based on department BACT emission limitations

(2) Second-highest monitored concentrations for the monitors located near the proposed facility

(3) Less than significant, no further analysis completed

(4) Concentration for maximum 24-hour average; this is a conservative estimate of 3-month average

The total impact on ambient air is obtained by adding a "background" concentration to the maximum modeled concentration. This "background" concentration takes in to account all sources of the pollutant not explicitly modeled. A conservative estimate of this "background" value is obtained as the second highest monitored concentration for each pollutant as listed in Table d-4. This is a conservative estimate because sources used in the modeling may have contributed to the monitored value.

Based on this analysis, the department has reasonable assurance that no AAQS will be exceeded as a result of the operation of the proposed new resource recovery facility.

vi. Additional Impacts Analysis

a. Impacts on Soils and Vegetation

The maximum ground-level concentrations predicted to occur for the criteria pollutants as a result of the proposed project, in conjunction with other sources, including a background concentration, will be below all applicable AAQS including the national secondary standards designed to protect public welfare-related values. As such, these pollutants are not expected to have a harmful impact on soils and vegetation.

For the noncriteria pollutants subject to review, Hg, Be, F⁻, and H₂SO₄ mist, no adverse impact on soils and vegetation is expected at the concentrations predicted (reference EPA 450/2-80-074, Health Impacts, Emissions, and Emission Factors for Noncriteria Pollutants Subject to Deminimum Guidelines and Emitted from Stationary Conventional Combustion Processes).

b. Impact on Visibility

The proposed new facility is located more than 100 kilometers from the nearest Class I area, the Everglades National Park. As such, no adverse impact on visibility is expected in or near the Class I area.

c. Growth-Related Air Quality Impacts

The proposed facility is not expected to significantly change employment, population, housing, or commercial/industrial

development in the area to the extent that a significant air quality impact will result.

d. GEP Stack Height Determination

Good Engineering Practice (GEP) Stack height is defined as the greater of: (1) 65 meters or (2) the maximum nearby building height plus 1.5 times the building height or width, which ever is less. For the proposed project, a single common stack, housing the individual flues for each incinerator, will be 76.2 meters high. The building dimensions of the facility are 36.6 meters in height, and 33.5 meters in width. The calculated GEP height is thus 86.9 meters. The applicant has included building wake downwash in the modeling analysis since the stack is less than GEP.

e. Noncriteria Pollutants

The proposed facility emits in PSD-significant amounts the following regulated noncriteria pollutants: mercury, beryllium, fluorides, and sulfuric acid mist. There have been no ambient air quality standards established for these pollutants. They are regulated through the PSD regulations by applying BACT to each of them.

Some information about the impacts of these pollutants in the ambient air is available however. In the previously cited EPA document (EPA-450/2-80-074) on health impacts of noncriteria pollutants, deminimus ambient air concentrations are established for the threshold of biological effects for each of the above pollutants. These deminimus values can be compared to the predicted maximum impact listed in Table d-3. It should be noted that the deminimus ambient impact levels listed on this table are not the same as in the above referenced EPA document. The values in the table are threshold values for the ability to accurately monitor these pollutants using EPA standard monitors.

The deminimus biological level for mercury is 0.1 ug/m^3 , 24-hour average. The predicted maximum for the proposed facility is 0.01 ug/m^3 , 24-hour average. The deminimus biological level

for beryllium is 0.005 ug/m³, 24-hour average. The predicted maximum impact is 0.00003 ug/m³, 24-hour average. The de minimus biological level for fluorides is 0.01 ug/m³, 24-hour average and the predicted maximum level is 0.01 ug/m³, 24-hour average. And finally, the de minimus biological impact level for sulfuric acid mist is 1 ug/m³, 24-hour average. The predicted impact (not listed in Table d-3) is 0.04 ug/m³, 24-hour average.

Except for fluorides, all of the noncriteria pollutants subject to review are well below their biological de minimus value.

f. Unregulated Pollutants

Two additional pollutants are often brought up in the context of resource recovery facilities. These are hydrogen chloride (HCl) and dioxins (2, 3, 7, 8-TCDD). Neither is currently regulated within the PSD regulations. Hydrogen Chloride is regulated nationally for other type sources but not specifically for resource recovery facilities. Some states do regulate both of these substances. Both of these substances may become regulated either nationally or by the state in the future. The recommended control equipment necessary for the facility to meet the BACT emissions limitations for the regulated pollutants will also control HCl and dioxins.

g. Nonattainment Review

The nonattainment review procedures require that a new or modified facility, which increases emissions by 100 tons (or more) per year of the pollutant for which the area is designated nonattainment, complete the following preconstruction review requirements.

- °Meet the Lowest Achievable Emission Rate (LAER) for the affected pollutant;
- °Demonstrate that all major facilities owned or operated by the applicant are in compliance with all applicable emission limitations;

- °Obtain necessary emission offsets; and,
- °Demonstrate a net air quality improvement.

The proposed resource recovery facility is to be located in an area designated as nonattainment for the pollutant ozone. The regulated pollutant for ozone is hydrocarbons (measured as volatile organic compounds (VOC)). The VOC emissions at the proposed facility will increase by 65.5 tons per year. Therefore, nonattainment review is not required.

E.7. Noise

a. Construction

During construction of the plant, noises will be those associated with earth moving, foundation work, erection of steel, pouring of concrete, and driving piling. The nearest residential area subject to potential impact from construction noise is approximately one mile away. Construction equipment is not expected to increase noise levels noticeably above that of traffic and existing noises. The predicted noise levels are not predicted to violate Palm Beach County noise ordinances, however, the residents may be slightly annoyed by the increased duration of the noise during the daylight hours.

b. Operation

The addition of the power plant/energy recovery facility itself should not result in a significant increase in noise levels present in the nearest residential areas. Activities associated with the operation of the plant such as the induced draft fans should not be a significant source of noise. However, the truck traffic bringing in refuse to the plant will likely be the significant sources of noise. Truck traffic into the plant will be for the most part along 45th Street through a residential area that currently has little traffic. Noise levels from the mobile sources will depend on types of equipment utilized over the years and the degree of maintenance given. Concentration of vehicular noise at the plant should be buffered by the plant's enclosed tipping area and landscaping.

Although the state does not currently have noise limitations, Palm Beach County has noise limits of 60 dBA at all times in inhabited residential areas for fixed mechanical equipment. All other noise sources have a sound level limit of 60 dBA from 7:00 a.m.-11:00 p.m. and a 55dBA limit from 11:00 p.m.-7:00 a.m.

E.8. Solid Waste/Hazardous Materials

Construction debris such as paper, concrete, and plastic will be transported to the landfill for disposal.

During plant operation, the refuse is sorted for large items, potentially hazardous materials or non-combustibles such as demolition debris; remaining refuse will be processed for incineration. Following combustion, the ash residue passes to storage hoppers prior to being trucked to the adjacent landfill. Non-combustible wastes will also be landfilled. The residue which then remains is approximately 10 percent by volume of the original raw waste.

In the event of a partial facility shutdown, the remaining facilities at the processing plant will be sufficient for processing a portion of the incoming waste. Incoming raw wastes that could be burned would be diverted to the site landfills until processing operations could resume.

Any identified hazardous wastes received on site will be separated from the incoming waste, manifested and shipped offsite for disposal.

F. Impacts on Surrounding Land Use and Population Density

The area surrounding the site exhibits a variety of different land uses. To the west of the site lies a conservation area (West Palm Beach Water Catchment Area), to the north exists land which is classified very low to low density residential. Northeast of the site is where the Dyer Boulevard Sanitary Landfill is located. To the east of the proposed site and the bordering Florida Turnpike exists land classified as low to medium high density residential.

The construction and operation of the facility should not

adversely affect land uses and population densities to the North, West or South of the facility. This conclusion is based on several observations. Due to the site layout and the Beeline Highway to the North, land use and population density in the northern sector should not be affected. The western sector is occupied by the Water Catchment Area which will be at least 3000 feet from the facility and landfill. No change in land use or population density is expected. In the southern sector the proposed transmission line and buffer strip south of 45th Street will mitigate any adverse affects on land uses or population densities.

The area to the east of the Florida Turnpike near Haverhill Boulevard and 45th Street will experience greater traffic and traffic noise. This may slow development and may slow the resale of houses along those roads affected by traffic to and from the facility. The widening of 45th Street and other roadway improvements will partially mitigate the increased traffic impacts. However, during construction of 45th Street, local residents will be inconvenienced. Due to the buffer provided by the Turnpike, low density residential development should not be significantly reduced by the facility, although the plant and stack may be visually unaesthetic to some.

G. Impact on Public Lands and Submerged Lands

The topography and soils of the site will be altered by the construction of the resource recovery plant and the landfills, the loss and concomitant replacement of the wetlands, the creation of the borrow lakes, and the construction of roads and related service facilities. Natural soils will be removed in areas of borrow lakes. In wetland areas to be replaced, soils will be removed; in replacement wetlands, landcover will consist of suitable materials similar to natural soils. Each of these alterations will affect runoff and percolation rates.

As construction progresses, more and more of the site area will be covered with impervious surfaces, e.g. roads and buildings. When completed, the RRF site will comprise a maximum

of 945,000 square feet of impervious surfaces. The area of general construction will cover about 40 acres. The construction activities described will affect the site's topography and will have some potentially negative aesthetic impacts. Since the site is remote, and the adjacent property is undeveloped, the visual impacts should be limited since there are no existing viewsheds which could be adversely affected.

The Facility will not be constructed on state owned submerged lands. Runoff from the site will travel in canals owned by water management districts. The transmission line will cross the Florida Turnpike while certain utilities will be placed under the Turnpike.

Five basic wetland types occur on the site. Four are palustrine, one lacustrine. These types are as follows: palustrine, open water; palustrine, emergent; palustrine, shrub-scrub; palustrine, forested; and lacustrine, open water.

Both the Army Corps of Engineers and the Florida Department of Environmental Regulation (DER) have jurisdiction over wetlands on the site. Based on a jurisdictional determination report dated September 5, 1985, DER has jurisdiction over wetlands and excavated water bodies discharging into the EPB-10 Canal and the wetlands located within the transmission corridor. The Corps of Engineers can assert jurisdiction over virtually all wetlands on the resource recovery site and transmission corridor.

A wetlands jurisdictional survey was made on site by the Department in August 1985. The wetlands located on the south and west portion of the project have been determined to be jurisdictional pursuant to Section 17-12.030, F.A.C. The jurisdictional area is approximately 110 acres in extent. It is primarily comprised of abandoned shell mining pits which consists of shallow parallel canals separated by strips of upland. The EPB-10 extension and two associated swamps are also jurisdictional. Other wetland areas located on the project site are isolated hydraulically and are not subject to state dredge and fill permitting requirements.

There are also jurisdictional wetlands contiguous to water

bodies on the 73 acre parcel east of the Turnpike and south of 45th Street. A small portion of these wetlands (0.7 acres) will be disturbed by construction of the transmission line access road

The majority of the wetlands within the 1320 acre tract occur in the central portion of the property. These central wetlands are interconnected by a network of drainage ditches. Some 421 acres of these wetlands are not subject to DER jurisdiction but are subject to the jurisdiction of the US Army Corps of Engineers. Several wetland types were identified in this area including freshwater marsh, wet prairie and freshwater swamp.

A total of 161.6 acres of wetlands will receive fill material and will be subject to section 404 regulation. Most of the fill placed in wetlands will be required for construction of the landfill. The majority of wetland areas to be filled for landfill construction are areas that have experienced past drainage and a subsequent alteration of the hydroperiod.

Construction of the facility and landfill will cause the loss of approximately 190 acres of wetland habitat including fresh water swamps and marshes. Although most of the lost wetlands are not under state dredge and fill permitting jurisdiction, their loss could have a significant long-term loss of fish and wildlife resources according to the Florida Game and Fresh Water Fish Commission (GFWFC). The GFWFC has recommended that the Palm Beach County Solid Waste Authority undertake a wetland habitat enhancement project to mitigate on site wetland losses.

The loss of wetlands subject to the department's jurisdiction pursuant to section 403.817, F.S., and 17-4.022(1)(a) and (b), F.A.C., will be less than five acres. The loss of these five acres of jurisdictional wetlands (EPD-10 Canal extension and marsh) is not contrary to the public interest. In making this determination the department considered the following factors:

1. Resource Recovery Facilities have been determined to be in the public interest by the Florida Legislature. They also reduce land consumption as opposed to sanitary landfills. They are environmentally superior to sanitary landfills in terms of

reduced potential for groundwater pollution, and reduction in nuisances such as flies, rats, odors and birds.

2. The project should not adversely affect public health, safety, welfare or property of others due to its proposed design and buffered location.

3. While the construction of the facility will have adverse effects on conservation of fish and wildlife, the mitigation proposed will also help to conserve fish and wildlife. Open water borrow lakes will replace some cypress swamps which could be beneficial to fish. Habitat for endangered and threatened species will be protected and enhanced.

4. The project will not adversely affect navigable water or cause harmful erosion or shoaling. The flow of water both on- and off-site will be altered. The flows on-site will be controlled to enhance remaining wetlands. Off-site flows will be controlled to preclude discharge of turbid waters. Off-site water flow will be reduced.

5. The project should not adversely affect fishing or recreational values in the vicinity. The creation of sculptured shore lakes and protection of wetlands and rookeries should provide fishing and other recreational benefits. The project should have no adverse impact on the productivity of marine fisheries.

6. The project will be permanent and will not affect historical or archaeological sites.

7. The current condition and relative value of functions being performed by areas affected by the proposed RRF have also been considered. The wetlands on site, jurisdictional or not, are viable wetlands although isolated and partially degraded. The area most impacted will be upland pine flatwoods.

Natural drainage patterns of the site have been altered to some extent by man. The construction of a berm along the western property boundary functionally isolates the surface waters of the site from those of the catchment area. Flow in and between depressional marsh and wet prairie areas throughout the central portion of the site has been altered by a series of shallow

channels, which serve to connect them together. During wet periods these areas appear to be serially connected through uniform inundation. The Turnpike, the Bee Line Highway, and 45th Street also tend to isolate the site from natural drainage patterns.

The existing conditions at the site are in part due to the interaction of several past or existing stresses. Most of the impact is the result of man's alteration of the land use, drainage and species composition of the site. Many of the perturbations have caused major shifts in the ecological balance of the site.

One of the most dramatic changes that has occurred on the site is the alteration of land use in the creation of dredge lakes. The removal of natural wetland biotic communities, and their replacement with the deepwater habitat of the borrow lakes and the disturbed areas that surround them has altered a large area of the site. The negative impacts of this shift have been to eliminate viable and productive upland and wetland. Much of the disturbed area has provided a habitat for introduced and pest species.

There is a positive benefit that has resulted from some of this alteration. The creation of deepwater habitat for fish and aquatic species has provided a recreational resource that is utilized on a regular basis despite access restrictions. The second benefit is very localized but highly significant. One of the abandoned borrow pits at the south end of the site receives heavy use by White Ibis as a roost and rookery.

A second major stress that man has imposed on the site is the establishment of a network of ditches and culverts to drain the wetlands at the interior of the site. This alteration has caused a shift in the species composition of these areas. Myrtle dominates many of the wetlands that have been drained. Willow, sawgrass, and a number of other herbaceous wetland species are underrepresented in these drained wetlands. The drainage of these wetlands has imposed a stress that has altered the species composition, reduced the vigor of species present, and probably

reduced the overall quality of these drained areas.

A third stress evident at the site is the presence of several introduced species. Brazilian pepper, *Meleleuca* and Australian pine are all present at the site. Australian pine and Brazilian pepper dominate many of the disturbed areas on the site. *Meleleuca* is encroaching on many of the wetland areas and is established on several upland sites. The aggressive nature of these species in displacing native flora constitutes a major stress at the site, one which could undoubtedly increase with time.

Wild hog, although considered a game mammal, is an introduced species. Hogs can cause considerable disturbance of ground cover flora by rooting. Ground dwelling birds, animals and their young may suffer predation. Wild hogs prey heavily on native species of snakes. The fact that the area is closed to hunting eliminates a check on population. This species may constitute a stress on the biota of the site.

The last stress on the site is caused by the presence of man. The activity on the access road, the presence of trespassing fishermen, the use of the area by off-road vehicles and the probable hunting and poaching on the site all have an impact on the biota. The network of trails on the site makes much of the area accessible to vehicles, with a resultant impact on the flora. The more sensitive and secretive wildlife species are probably excluded from parts of the site by man's presence. The current and continuing use and alteration of the site by man exerts a significant impact.

The values of isolated cypress domes and wet prairies will be lost but partially replaced by openwater lakes and other mitigative measures. One of the more important mitigative measures will be the control of human access to the rookery area and areas visited by the endangered snail kites. On-site mitigation will include sculpting of shorelines around borrow lakes and drainage canals to allow for the establishment of wetlands vegetation, planting of willows and other wetland vegetation in the shellrock mining area, and

acquisition of a ten acre out parcel along the water catchment area boundary to preclude its development.

Mitigation for the fill activities in wetlands is proposed in two areas. The first area is incorporated into the 460-acre conservation area which consists of 148 acres of undisturbed wetlands, 134 acres of uplands, and approximately 178 acres of abandoned shellrock mining pits and adjacent disturbed areas. As a mitigation effort portions of the shellrock pits within DER jurisdiction will be improved by planting the shallow littoral zone and adjacent upland areas with appropriate wetland vegetation. None of this activity will be done in the buffer zone around the roost/rookery without approval from FWS and/or FGFWFC.

These reclaimed areas will be hydrologically connected to adjacent wetlands within the conservation area. The entire 460 acre area will serve as a retention area for treated surface-water runoff from the developed portions of the site. The second on-site mitigation activity involves the creation of 12 acres of seasonally-flooded littoral zone along the margins of the proposed dredge lakes. These areas would extend landward of the normal slopes required on dredge lakes and would be constructed with an elevation that allows for seasonal drying of the wetlands and hydroperiods typical for the region.

Revegetation of both of these areas will be accomplished through a combination of transplanting, mulching, and natural processes. Materials from on-site wetlands disturbed through site development will be used as a source wherever possible.

The Florida Game and Fresh Water Fish Commission has also suggested off-site mitigation which would involve construction and repair of water control structures in an existing 3400 acre wildlife management area. This will help mitigate the loss of wetlands subject to federal jurisdiction.

The applicant has provided affirmative, reasonable assurance that the immediate and long-term impacts of the project will not result in the violation of water quality standards pursuant to

Florida Administrative Code Rules 17-4.28(3) and 17-4.29. To ensure that the State Water Quality Standards will be maintained, the conditions and monitoring requirements shall be made part of the Conditions of Certification.

H. Impact on Archaeological Sites and Historic Preservation Areas

The facility site is to be located on what was wooded wetlands. It is not expected to have any historical or archaeological significance, an expectation concurred with by the Deputy State Historic Preservation Officer (see Agency Comments section).

VII. CONSTRUCTION AND OPERATIONAL SAFEGUARDS

As outlined in the application, construction procedures, including runoff control facilities and practices to avoid contamination of state waters, must be implemented. The construction site will be isolated from the general public by appropriate means which may include fences and guards. Compliance with OSHA standards and the provisions of Section 440.56, F.S., should adequately protect construction workers and operating personnel.

The conceptual design of most of the major pollution control equipment appears sufficient to protect the public and to protect the environment from significant harm. The design of the culvert for the EPB 10 extension under the landfill and the associated flow control structure does not appear adequate to protect water quality.

VIII. COMPLIANCE AND VARIANCES

As currently designed, the Palm Beach County Resource Recovery Facility will not contribute significantly to a violation of ambient air or water quality standards. No variances to pollution control standards are sought.

IX. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

1. Construction Impacts

Construction of the proposed facility would have the

following impacts:

a. Disruption of previously disturbed land and wetland areas.

b. Construction noise levels (excluding pile driving and steam blowout of boiler tubes) should be slightly less than 65 dB(A) at the boundary of the site. This should be a slight annoyance to outside activities at the nearest residences. Steam blowout may cause noticeable noise levels at the nearest residences. Steam blowout will occur intermittently over a two week period. The permittee should attempt to notify the neighboring residents prior to the start of steam tube blowout in an effort to partially mitigate any annoyance caused by the loud noises.

c. Construction traffic to and from the site will cause some congestion in the plant vicinity.

2. Operation

a. The Resource Recovery Facility (RRF) will burn solid waste. Impacts on air quality will include emissions such as sulfur dioxide, oxides of nitrogen, particulate matter and other minor constituents. These emissions will be limited by use of control technology considered to be the best available. Fugitive dust from vehicles, heavy equipment and ash handling will be controlled by a variety of methods to reduce adverse impacts. The control equipment is designed to comply with federal and state emission limitations. Under most meteorological conditions, the RRF plant will not contribute to violations of ambient air quality standards.

b. There should be sufficient water available from the ground water system to supply the volume requirements of the facility.

c. The South Florida Water Management District stated the following in their report dated January 1986:

"Based on information included in the application, staff is of the opinion that the project could be developed at this site to conform with current and proposed District criteria.

"The Governing Board amended the staff recommendation to

state, "In the opinion of the District Governing Board and from the perspective (of) water quality and protection of drinking water quality, the subject site is inappropriate."

3. The Public Service Commission has concluded a need exists for the expanded facility.

4. The Department of Community Affairs concluded that for the most part the proposed RRf meets most of the objectives, goals and policies of the State Comprehensive Plan.

5. The Division of Archives, History and Records Management determined that the proposed plant was not likely to affect significant archaeological or historical areas.

6. The construction and operation of the resource recovery facility will permit a reduction in land area that would otherwise be required for future landfills.

7. Use of the facility will reduce groundwater pollution due to cessation of the disposal of raw garbage in the County's existing landfills; there will be concurrent reduction in air and noise pollution, odors, flies, scavenging birds, and other vectors due to the closure of landfills containing putrescible wastes.

8. A sizeable fraction of the solid waste received will be reduced by burning. Recovery of recyclable materials is possible. Electricity will be generated and sold to FPL. The remaining ash and non-combustibles will be landfilled as a relatively inert residue.

9. Noise generated by the construction of the plant may create a slight nuisance to the existing residential areas; operational noise should be no greater than currently occurring in the area.

B. Recommendations

If the Palm Beach County Resource Recovery Facility agrees to abide by the conditions of certification, the DER would recommend certification of the Resource Recovery Plant site for up to 50 MW of capacity at 2000 tons per day of solid waste and for up to 75 MW at 3000 tons per day upon submission of a supple-

mental application. This recommendation is based on the following rationale:

1. Full load operation of the RRF would not violate ambient air quality standards for SO₂, NO_x, CO or metals.

2. Proper management of stormwater runoff should prevent violations of water quality criteria off-site.

3. The conversion of solid waste into energy reduces the potential for groundwater contamination and public health hazards and will benefit the electric utility customers by producing electricity not dependent on expensive imported oils.

2/11/86

State of Florida
Department of Environmental Regulation
Palm Beach County Resource Recovery Facility
Case No. PA 84-20
CONDITIONS OF CERTIFICATION

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State of Florida
Palm Beach County
Resource Recovery Facility
Case No. PA 84-20
CONDITIONS OF CERTIFICATION

I. CHANGE IN DISCHARGE

All discharges or emissions authorized herein shall be consistent with the terms and conditions of this certification. The discharge of any regulated pollutant not identified in the application, or more frequent than, or at a level in excess of that authorized herein, shall constitute a violation of the certification. Any anticipated facility expansions beyond the certified initial nameplate capacity of 2,000 TPD, production increases, or process modifications which may result in new, different, or increased discharges of pollutants, change in type of fuel as described in XIV.B., or expansion in steam generating capacity must be reported by submission of a supplemental application pursuant to Chapter 403, Florida Statutes.

II. NON-COMPLIANCE NOTIFICATION

If, for any reason, the Permittee (defined as the Applicant, Vendor, or its successors and or assigns) does not comply with or will be unable to comply with any limitation specified in this certification, the Permittee shall notify the Southeast Florida District Office of the Department of Environmental Regulation (Southeast District Office) and the Palm Beach County Health Department (PBCHD) by telephone within a working day that said noncompliance occurs and shall confirm this in writing within seventy-two (72) hours of becoming aware of such conditions, and shall supply the following information:

- A. A description of the discharge 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.

III. 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. Stoppages of landfill operations induced by weather conditions shall be allowed until the weather permits operations to resume. In the event of a malfunction of a resource recovery boiler's pollution control system that unit's furnace emissions must be shifted to the extent feasible to the remaining unit having a properly functioning pollution control system. In the event of a prolonged (thirty (30) days or more) equipment malfunction or shutdown of air pollution control equipment, operation could be permitted to continue to take place under a consent order, only if the Permittee demonstrates that such operation will be in compliance with all applicable ambient air quality standards and PSD increments, solid waste rules, domestic waste rules and industrial waste rules. Additionally, during such malfunction or shutdown, the source shall comply with all other requirements of this certification and all applicable state and federal emission standards not affected by the malfunction or shutdown which is the subject of the consent order. Administrative action will not be initiated in the event of such a malfunction for 25 days following a malfunction unless there is an imminent health threat. However, if at thirty (30) days following a malfunction compliance has not been achieved by the source, an Order for Corrective Action may be immediately imposed upon the Applicant, subject to the provisions of Chapter 120 of the Florida Statutes. Operational stoppages exceeding two hours for air pollution control systems or four hours for other systems or operational malfunctions as noted below exceeding two hours for

air pollution control systems or four hours for other systems and as defined in the operational contingency plans as specified in Condition XVII are to be reported as specified in Condition II. Identified operational malfunctions which do not stop operation but do compromise the integrity of the operation shall be reported to the Southeast District Office as specified in Condition II.

IV. 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 such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

V. RIGHT OF ENTRY

The Permittee shall allow during operational hours 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 certification, and
- B. To have access during normal business hours (Mon.-Fri., 9:00 A.M. to 5:00 P.M.) to any records required to be kept under the conditions of this certification for examination and copying, 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.

VI. REVOCATION OR SUSPENSION

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

VII. CIVIL AND CRIMINAL LIABILITY

This certification does not relieve the Permittee from civil or criminal penalties 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.

VIII. PROPERTY RIGHTS

The issuance of this certification does not convey any property rights in either real or personal property, 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.

IX. 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 provisions to other circumstances and the remainder of the certification shall not be affected thereby.

X. DEFINITIONS

The meaning of terms used herein shall be governed by the definitions contained in Chapter 403, Florida Statutes and any regulations adopted pursuant thereto. In the event of any dispute over the meaning of a term in these 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. Words or phrases used herein dealing with conditions of the South Florida Water Management District (SFWMD) shall be defined by reference to Chapter 373, Florida Statutes or applicable rules of the SFWMD. Contaminated water shall include leachate and runoff that has been in contact with ash or solid waste.

XI. 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 certification the Department shall review all monitoring data that has been submitted to it during the preceding five-year period for the purpose of determining the extent of the Permittee's compliance with the conditions of this certification and 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.

XII. MODIFICATION OF CONDITIONS

Pursuant to Subsection 403.516(1), F.S., the Board hereby delegates the authority to the Secretary to modify any condition of this certification dealing with sampling, monitoring, reporting, specification of control equipment, related time schedules, emission limitations (subject to notice and opportunity for hearing), conservation easements, or any special studies conducted, as necessary to attain the objectives of Chapter 403,

Florida Statutes. Requests for modifications of monitoring requirements shall not be unreasonably withheld by the Department.

All other modifications to these conditions shall be made in accordance with Section 403.516, Florida Statutes.

XIII. CONSTRUCTION

The facility shall be constructed, at a minimum, pursuant to the design standards presented in the application and the standards or plans and drawings submitted and signed by an engineer registered in the state of Florida. The Applicant shall present upon request, specific facility plans, as developed, for review by the Southeast District Office, the South Florida Water Management District(SFWMD), and the Palm Beach County Health Department(PBCHD) prior to construction pursuant to the portions of the plans then being submitted. Specific Southeast District Office approval of plans will be required based upon a determination of consistency with approved design concepts, regulations and these Conditions prior to initiating construction of the: leachate collection system; air pollution control equipment; waste water treatment and disposal systems, composting operations, domestic waste water and septage handling and treatment systems, stormwater runoff system; landfill closure plans and hazardous, toxic or pathological handling facilities or areas. Review and action by the Southeast District Office or SFWMD on said plans shall be accomplished in no longer than sixty (90) days from the date of a complete submittal of such plans and any action may be subject to review pursuant to Chapter 120, Florida Statutes.

A. Control Measures

1. Stormwater Runoff

To control runoff during construction which may reach and thereby pollute Waters of the State, necessary measures shall

be utilized to settle, filter, treat or absorb silt-containing or pollutant-laden stormwater to ensure against spillage or discharge of excavated material that may cause turbidity in excess of 29 Nephelometric Turbidity Units above background in Waters of the State. Control measures may consist of sediment traps, barriers, berms, and vegetation plantings. Exposed or disturbed soil shall be protected and stabilized as soon as possible to minimize silt and sediment laden runoff. The pH of the runoff shall be kept within the range of 6.0 to 8.5. The Permittee shall comply with Florida Administrative Code Chapters 17-3, 17-25 and 40E-4. The Permittee shall complete the forms required by 17-25.09(1) and 40E-4 and submit those forms and the required information to the SFWMD and Southeast District Office for approval no later than 90 days prior to start of construction including design drawings indicating flow drainage plans during facility construction and operation. To prevent the discharge of turbid water (greater than 29 NTU's above background) from the site during construction, a temporary berm with 3H:1V side slopes and an elevation sufficient to contain the 25 year, 3 day storm event shall be constructed around the resource recovery site (except for the landfill areas and Jog Road) prior to commencement of work on the facility.

2. Burning

Open burning in connection with land clearing shall be in accordance with Chapter 17-5, FAC, and Uniform Fire Code Section 33.101 Addendum. No additional permits shall be required, but prior to each act of burning, the Division of Forestry shall be contacted to determine if satisfactory conditions exist for burning. Open burning shall not occur if the Division of Forestry or the Palm Beach County Fire and Rescue department has issued a ban on burning due to fire hazard conditions.

3. Sanitary Wastes

Disposal of sanitary wastes from construction toilet

facilities shall be in accordance with applicable regulations of the appropriate local health agency.

4. Solid Wastes

Solid wastes resulting from construction shall be disposed of in accordance with the applicable regulations of Chapter 17-7, FAC.

5. Noise

Construction noise shall not exceed either local noise ordinance specifications, or those noise standards imposed by zoning.

6. Dust

The Permittee shall employ proper dust-control techniques to minimize unconfined emissions.

7. Transmission Lines

The directly associated transmission lines from the Resource Recovery Facility electric generators to the existing Florida Power and Light Company transmission system shall be cleared, maintained and prepared without the use of herbicides. Construction of a substation on the certified site east of the Turnpike shall not be allowed without a supplemental application and demonstration of compliance with sections 403.508(1) and (2), F.S.

8. Conservation Easement

Subject to the approval of the Trustees of the Internal Improvement Fund and Governing Board of the SFWMD, if required, and before the commencement of any construction herein authorized,

the County shall file and have recorded, in the same manner as any other instrument affecting the title to real property, a conservation easement pursuant to Section 704.06, Florida Statutes, in the office of the Clerk of the Circuit Court, Palm Beach County, for the area west of Jog Road and the Resource Recovery Facility west to the Water Catchment Area.

The County shall pay all recording fees. The conservation easement shall be in favor of the Department of Environmental Regulation and shall restrict any activity including dredging and filling of land, cutting, eradicating or pruning of endemic vegetation beyond the scope of the approved restoration plan indicated in Section 4.2 of the application. A draft conservation easement and a certified survey with a legal description shall be submitted to the Bureau of Permitting in Tallahassee for review and approval before it is filed (by the County) with the Clerk of the Circuit Court, Palm Beach County. Review and final action of the Trustees and Governing Board, as noted below, shall be acted upon within the time frame set forth in s.403.509(1), Florida Statutes, if not already granted by the Certification order of the Power Plant Siting Board or at the next Governing Board of the SFWMD, if required.

9. Written Notice

Written notice from the Department indicating that Condition No. XIII.A.8 has been satisfied shall be obtained by Palm Beach County prior to the beginning of any construction. All work in the restoration sites shall be completed within one year of commencement of construction on the landfill site.

10. Time Limitations

If the proposed construction of the resource recovery facility, within the jurisdictional area has not been completed within 5 years of the date of certification, a permit application

shall be resubmitted to the Department for evaluation and shall be accompanied by the appropriate fee.

11. Monitoring

The following surface water monitoring program shall be implemented during construction for:

Parameter: Dissolved oxygen, temperature (C°), pH, total and fecal coliform bacteria, Salmonella, iron, lead, copper, mercury, cadmium, zinc, silver and turbidity.

Frequency: Quarterly throughout the year except that the samples shall be collected monthly for April, June, August and September. Sampling shall begin at least 30 days prior to initial construction for background levels. All samples shall be taken for a 24 hour period, at 4 hour intervals beginning one hour before sunrise.

Sampling Locations:

At the discharge to the EPB-10 canal.

Analyses:

Water quality analyses should be performed at detection levels commensurate with water quality criteria for Class III waters (F.A.C. rule 17-3.121). Samples shall be collected and analyzed by a DHRS certified laboratory.

If a violation occurs for any sampled parameter, the Permittee shall, after notifying the Department, institute corrective action to abate the violation if it is the result of activities of the Permittee. Corrective action may include further monitoring to determine the extent and degree of violation. Any modifications shall be coordinated with the Southeast District Office. Department approval shall be obtained

prior to any action constituting a modification of this permit.

All monitoring reports shall be submitted to the DER Bureau of Permitting, Tallahassee, Southeast District Office, PBCHD, and the SFWMD under a cover letter containing the following information: (1) certification number; (2) handling, storage and methods of analysis of the samples; (3) a map indicating the sampling locations; and (4) a statement by the individual responsible for implementation of the sampling program concerning the authenticity precision, limits of detection and accuracy of the data. Monitoring reports shall also include the following information for each sample that is taken:

- (1) time of day samples taken;
- (2) depth of water body;
- (3) depth of sample;
- (4) antecedent weather conditions;
- (5) tidal stage and direction of flow; and
- (6) wind direction and velocity.
- (7) status of flow from site stormwater discharge structure. (flowing or not flowing)

Monitoring reports shall be submitted to the Southeast District Office, PBCHD, and SWFMD within 2 weeks of completion of analysis for each sampling period.

12. Protection of Vegetation

The Permittee shall develop the construction site and Palm Beach County shall develop the mitigation areas so as to retain endangered and threatened plants, or replant these plants in another suitable environment. Any endangered or threatened plants should be staked in the field or relocated, as appropriate, prior to commencement of any construction or site preparation activities.

13. Dewatering Operations

There shall be no dewatering operations during construction without approval of SFWMD pursuant to XVI.E. Such approval may be obtained by submitting an application to SFWMD at least 90 days prior to start of dewatering operations. Any discharge of water from dewatering operations shall not violate water quality standards.

B. Environmental Control Program

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

If harmful effects or irreversible environmental damage not anticipated by the application or the evidence presented at the certification hearing are detected during construction, the Permittee shall notify the Southeast District Office as required by Condition II.

C. Reporting

1. Notice of commencement of construction shall be submitted to the Southeast District Office, PBCHD, and SFWMD within 15 days of initiation. Starting three (3) months after construction commences, a quarterly construction status report shall be submitted to the Southeast District Office. The report shall be a short narrative describing the progress of construction.

2. Upon or immediately prior to completion of construction of the resource recovery facility or a phase thereof and upon or immediately prior to completion of all necessary preparation for the operation of each landfill cell, the Southeast District Office, PBCHD and SFWMD will be notified of a date on

which a site or facility inspection should be performed in accordance with Conditions V, and the inspection shall be performed within fourteen (14) days of the date of notification by Permittee.

XIV. OPERATION

A. Air

The operation of the Resource Recovery Facility shall be in accordance with all applicable provisions of Chapter 17-2, 17-5 and 17-7, Florida Administrative Code. In addition to the foregoing, the Permittee shall comply with the following specific conditions of certification:

1. Emission Limitations upon Operation of Units 1 and 2

a. Stack emissions from each unit shall not exceed the following:

- (1) Particulate matter: 0.015 grains per standard cubic foot dry gas corrected to 12% CO₂.
- (2) SO₂: 0.32 lbs/MBtu average heat input not to exceed 0.62 lb/MBtu heat input one hour average. Compliance with SO₂ emission limits shall be determined by annual stack tests. The average of three or more stack test runs shall determine the average value.
- (3) Nitrogen Oxides: 0.32 lbs/MBtu heat input
- (4) Carbon Monoxide: 400 ppmv corrected to 12% CO₂
- (5) Lead: 0.0004 lbs/MBtu heat input
- (6) Mercury: 3200 grams/day for the entire facility or when firing sludge or 0.00024 lbs/MBtu whichever is more stringent.
- (7) Odor: there shall be no objectionable odor at the site boundary.

(8) Visible emissions: opacity shall be no greater than 15% except that visible emissions with no more than 20% opacity may be allowed for up to three consecutive minutes in any one hour except during start up or upsets when the provisions of 17-2.250, FAC, shall apply. Opacity compliance shall be demonstrated in accordance with Florida Administrative Code Rule 17-2.700(6)(a)9., DER Method 9.

- (9) Fluoride: 0.0032 lb/MBtu heat input
- (10) Beryllium: 7.3 E-7 lb/MBtu heat input
- (11) VOC: 0.016 lb/MBtu heat input
- (12) Sulfuric Acid Mist: 3.2 E-5 lb/MBtu heat input.

b. The height of the boiler exhaust stack shall not be less than 250 feet above grade.

c. The incinerator boilers shall not be loaded in excess of their rated nameplate capacity of 58,333 pounds of RDF or 360.0×10^6 Btu per hour each.

d. The incinerator boilers shall have a metal name plate affixed in a conspicuous place on the shell showing manufacturer, model number, type waste, rated capacity and certification number.

e. Compliance with the limitations for particulates, sulfur oxides, nitrogen oxides, carbon monoxide, fluoride, sulfuric acid mist, VOC and lead shall be determined in accordance with Florida Administrative Code Rule 17-2.700, DER Methods 1, 2, 3, and 40 CFR 60, Appendix A, Methods 5, 7, 8, (modified with prefilter), 10, 12, 13A or 13B (or modified method 5 for flourides), and 18 or other methods as approved by the DER. The stack test for each unit shall be performed at $\pm 10\%$ of the maximum heat input rate of 360.0×10^6 Btu per hour or the maximum charging rate of 58,333 pounds of RDF per hour. Compliance with the beryllium emission limitation shall be determined in accor-

dance with 40 CFR 61, Method 103 or 104, Appendix B. Particulate testing shall include one run during representative soot blowing which shall be averaged proportionally to normal daily operations. Visible emission testing shall be conducted simultaneously with soot blowing and non-soot blowing runs.

2. Emission Control Equipment

a. The boiler particulate emission control devices shall be designed and constructed to achieve a maximum emission rate of 0.015 grains per dscf corrected to 12% CO₂. All other particulate control devices shall be designed to meet the provisions of section 17-2.610.

b. The fluoride, HCl and sulfuric acid mist gas controls system shall be designed to remove at least 90% of the maximum projected inlet concentrations.

c. The Permittee must submit to the Department within thirty (30) days after it becomes available, copies of technical data pertaining to the selected emissions control systems. These data should include, but not be limited to, guaranteed efficiency and emission rates, and major design parameters. The data shall be processed and approved or denied in accordance with F.S. 120.60.

3. Air Monitoring Program

a. The Permittee shall install and operate continuously monitoring devices for combustion temperature, flue gas oxygen, carbon monoxide, carbon dioxide, and opacity. The monitoring devices shall meet the applicable requirements of Chapter 17-2, Section 17-2.710, FAC, and 40 CFR 60.45, and 40 CFR 60.13, including certification of each device in accordance with 40 CFR 60, Appendix B, Performance Specifications and 40 CFR 60.7 (a)(5). Re-certification shall be conducted annually from initial certification. Data on monitoring equipment specifications, manufacturer, type, calibration and maintenance needs, and its proposed location after the economizer or in the air pollution

control equipment shall be provided to the Department for approval prior to installation.

b. The Permittee shall provide sampling ports in the air pollution control equipment outlet duct or stack and shall provide access to the sampling ports in accordance with Section 17-2.700, FAC. Drawings of testing facilities including sampling port locations as required by Section 17-2.700 shall be submitted to the Department for approval at least 120 days prior to construction of the sampling ports and stack.

c. The Permittee shall have a sampling test of the emissions performed by a commercial testing firm within 60 days after achieving the maximum rate at which the boilers will be operated but not later than 180 days of the start of operation of the boilers and annually from the date of testing thereafter. Thirty days prior notice of the initial sampling test shall be provided to the Southeast District Office and PBCHD. Fifteen days prior notice shall subsequently be provided for annual sampling tests.

4. Reporting

a. Two copies of the results of the emissions tests for the pollutants listed in XIV.A.1.a. shall be submitted within forty-five days of the last sampling run to the Southeast District Office and PBCHD.

b. Emissions monitoring shall be reported to the Southeast District Office and PBCHD on a quarterly basis in accordance with Section 17-2.710, FAC, and 40 CFR, Part 60, Subsection 60.7.

c. Notice of anticipated and actual start-up dates of each incinerator boiler shall be submitted to the DER Southeast District Office and PBCHD.

5. Unconfined Emissions

Proper dust control techniques such as water sprays or

chemical wetting agents or other containment method shall be used to control visible unconfined (Fugitive) emissions to the outside air no more than 10% opacity as determined by DER Method 9 for unconfined resource recovery processes. Proper techniques shall also be used to control such emissions to prevent them from crossing the property line to no more than three (3) minutes (cumulative) in any fifteen (15) minute period as determined by 40 CFR, 60, Appendix A, Method 22, with observations being made along the property line. Visible emissions shall not include uncombined water vapor or engine exhausts.

B. Fuel

The Resource Recovery Facility shall utilize refuse such as garbage and trash (as defined in Chapter 17-7, FAC) and natural gas recovered from landfills as its fuel. Use of alternate fuels except for distillate fuel oil or natural gas in start-up burners would necessitate modification of these Conditions of Certification. Refuse as fuel shall not include "hazardous waste" as defined in Chapter 17-30, FAC. The alternate fuel shall not contain more than 0.3% sulfur and shall not be used more than required during boiler startup or shutdown.

C. Wastewater Disposal

1. Plans drawings and specifications for leachate collection systems, pumps, lift stations, sewage collection systems, sewage treatment systems, wastewater treatment systems, deep injection wells, and wastewater collection systems shall be furnished to the Southeast District Office, PBCHD, and the SFWMD for approval at least 90 days prior to start of construction for the particular of such component.

2. The deep injection well shall be designed and operated in conformance with Chapter 17-28, FAC.

3. The injection well system bid specifications and plans shall be submitted to the Technical Advisory Committee (TAC) for the Southeast Florida District Office for review and approval prior to beginning the bidding process.

4. The surge protection system design calculations and operational features shall be submitted to all members of the department's Technical Advisory Committee(TAC) for approval prior to construction of the deep well injection system.

5. The successful bidder to construct the injection well system shall submit engineering details and drawings of the packer assembly to the TAC for approval prior to construction of the injection well system.

6. If the successful bidder chooses to use corrosion inhibitor(s) with the fresh water in the monitoring annulus surrounding the 8" injection tubing, this choice of inhibitors shall be submitted to the TAC for approval.

7. If the Palm Beach County Solid Waste Authority chooses not to set and cement the 40" conductor casing into the Hawthorne formation, alternatively the injection well engineering consultant shall:

a. Issue detailed instructions (specifications) to the contracted well driller on the drilling techniques, procedures and cautions to be observed to prevent contamination of the fresh water aquifer by the Floridan during drilling.

b. Specify to the contracted driller the location, depth, design and sampling/testing of monitor wells emplaced to monitor the quality of the fresh water aquifer during well construction and operation.

These two instructions shall be submitted to the TAC for approval prior to construction of the injection well.

8. A drawing showing drilling pad dimensions and features (slopes, concrete thickness, storage tank capacities, curb height, etc.) shall be submitted to the TAC for approval prior to the drilling pad construction.

9. The applicant shall specify the disposal location for excess mud, drill cuttings, drilling fluids, etc. for approval at the preconstruction TAC meeting. Property owner's approval will be required in addition to regulatory approval.

10. The question of the timing of the temperature logging for pilot and cased holes shall be discussed at the preconstruction TAC meeting.

11. The daily drilling log shall include the type and volume (amount) of weighting materials to control artesian flow, description of lithology encountered during drilling, unusual problems or conditions encountered during drilling in addition to any other information required by the consultant.

12. Upon the beginning of the operation of the injection well system, the applicant will begin a sampling and testing regimen of all individual wastewater streams for the accumulation of data anticipating adverse impacts on the injection zone, formation materials, formation fluids and well construction materials. Periodic review by the TAC will determine the need for continued sampling and/or need for additional or revised treatment before injection and/or need for revised estimates of the usable life of the injection system, etc.

13. The cementing program shall be submitted by the engineer at least fifteen (15) days prior to the date the cementing is scheduled and approval must be received before cementing begins. The format for the estimate shall be submitted at the first scheduled meeting with the TAC. The cementing program shall be designed with the use of Florida Class H (ASTM Type II) cement.

14. The contractors design shall address the need or lack thereof for an emergency power source to maintain the continuous operation of the injection well system.

15. The application states that the injection well system will have 100% redundancy. The contractors design shall clearly indicate the complete redundancy since the plan does not provide for an approved emergency discharge other than the "other" well.

16. The Contractor shall supply to the Permittee's engineer a complete list of spare parts and special tools to be included in the O & M Manual prepared for the Operating Permit Application.

17. The Contractor shall provide or have provided the means for checking grout sample density during casing cementing.

18. Cemented casings shall not be disturbed for 24 hours after the completion of cementing.

19. Core boxes shall be 10 feet long to accomodate the 10 ft. length cores to be taken.

D. Water Discharges

1. Surface Water

a. Any discharges from the site stormwater system via the emergency overflow structure which result from an event LESS than a ten-year, 24-hour storm (as defined by the U.S. Weather Bureau Technical Paper No. 40, or the DOT drainage manual, or similar documents) shall meet applicable State Water Quality Standards, Chapter 17-3, FAC, the Standards of Chapter 17-25, FAC, and Chapter 40 E.2 and 40 E.4, FAC.

2. Monitoring Surface Water

a. Sampling of water quality in the surface water management system shall be sampled at stations labeled 1, 2, 3, 4, 5, 6 and 7 as shown on sheets 18, 19, and 20 of 25 dated December 3, 1985, as stated below:

Location of Stations:

1. discharge culvert at the southwest acreage of the Class I Landfill on sheet 20 of 25
2. overflow control structure at EPB-10 west of the Class I Landfill on sheet 20 of 25
3. box culvert at EPB-10 east of the Class I Landfill on sheet 20 of 25
4. discharge culvert west of the Class III Landfill on sheet 19 of 25
5. discharge culvert northwest of the Class III Landfill on sheet 19 of 25
6. return dredge line from Dyer Landfill discharging into the existing borrow lake due north of the Class III Landfill on sheet 18 of 25
7. the center of the existing dredge lake one foot above the bottom

Monitoring Type and Schedule

Parameters

- | | |
|-------------------------|--|
| 1. General (Quarterly) | Total Organic Carbon, Dissolved Oxygen, pH, Turbidity, Specific Conductance, Chemical Oxygen Demand, Alkalinity, Total Suspended Solids, Ammonium N, Nitrate-N, Total Kjeldahl Nitrogen, Oil and Grease, Detergents, Total Coliform, Fecal Coliform, Fecal Streptococcus, Salmonella Biochemical Oxygen Demand, Total Phosphorus and Chlorides |
| 2. Metals (Semi-annual) | Aluminum, Antimony, Beryllium, Cadmium, Copper, Cyanide, Iron, Lead, Mercury, Nickel, Selenium Silver, Zinc, Arsenic and Chromium |

c. Water quality reports shall be submitted within 30 days of receipt of analysis results to the Southeast District Office, PBCHD and SFWMD for distribution to the appropriate review personnel.

d. The monitoring program may be reviewed annually by the Department, and a determination made as to the necessity and extent of continuation of the program. Aspects of the program related to sampling, monitoring, reporting, and related time schedules may be modified in accordance with the provisions of conditions number XII.

3. Groundwaters

a. All discharges to groundwaters, such as landfill leachate, shall be collected and treated as necessary, or otherwise be of high enough quality, to be able to meet the applicable Water Quality Standards of Sections 17-3.402 and 17-3.404, FAC, within 100 feet of the landfill perimeter.

4. Groundwater Monitoring Program

a. Sampling of the shallow aquifer groundwater quality shall be conducted in at least eight well clusters and six interceptor wells in the site vicinity. At least one of these well clusters shall be up the hydrologic slope from the landfill area to provide current background data. Other wells shall be located down the hydrologic slope from the landfill areas. All wells shall be surveyed by a state certified land surveyor and the locations of each well depicted on a topographical aerial map with the appropriate elevations noted for each well.

b. Operational background monitoring shall commence at least one year prior to operation of the resource recovery facility. Construction of monitoring wells and the collection of samples shall be in accordance with EPA recommended methods as contained in Procedures Manual for Ground Water Monitoring at Solid Waste Disposal Facilities (EPA/530/SW-611). The wells shall

be deep enough to ensure that groundwater samples can be obtained with the groundwater table elevation at its estimated lowest point and shall be protected from damage and destruction. Samples shall be analyzed in accordance with the methods described in Chapter 17-4, FAC. Analyses shall be performed by laboratories which are approved by the Department of Health and Rehabilitative Services to conduct analyses pursuant to Section 403.863, F.S., the State Public Water Supply Laboratory Certification Program.

c. Sampling of groundwater quality of monitoring well clusters labeled M-1, M-2, M-3, M-4, M-5, M-6, M-7, M-8, IW-1, IW-2, IW-3, IW-4, IW-5, IW-6 as shown on Figure 4.2-1 dated December 2, 1985, shall be performed quarterly for all parameters for three years and thereafter as stated below:

Monitoring Type and Schedule

Parameters

1. General (Quarterly)

pH, Specific Conductance, Temperature, Chloride, Total Organic Carbon (TOC), Sulfate, Bicarbonate, Magnesium, Organic Nitrogen, Ammonia, Nitrate, Chemical Oxygen Demand, Color, Turbidity, Total Iron, Total Dissolved Solids (TDS), Zinc, Calcium, Manganese, Total Nitrogen, Ammonium

2. Yearly

M.B.A.S., Organics as listed in S. 17-22.104, FAC, Trichloroethylene, Tetrachloroethylene, Carbon Tetrachloride, Vinyl Chloride, 1,1,1-Trichloroethane, 1,2-Dichloroethane, Benzene, Ethylene Dibromide, Chlorinated Phenolic Compounds, Chlorides, Sodium, Lead, Copper, Nickel, Chromium,

Cadmium, Iron, Mercury,
Arsenic, Selenium, Barium,
Silver, COD, Chemical Oxygen
Demand, Total Coliform, Fecal
Coliform, Fecal Streptococcus

d. Water quality monitoring reports shall be submitted within 30 days of receipt of analysis results to the Southeast District Office, the PBCHD and SFWMD for distribution to the appropriate review personnel.

e. The monitoring program may be reviewed annually by the Department, and a determination made as to the necessity and extent of continuation of the program. Aspects of the program relation to sampling, monitoring, reporting, and related time schedules may be modified in accordance with the provisions of condition number XII.

E. Solid/Hazardous Waste

1. Operation of the associated landfill shall be done in accordance with all applicable portions of Chapter 17-7, FAC, including prohibitions, procedures for closing of the landfill, and final cover requirements, or, as provided in this condition (XIV.E.) in its entirety. The plans of the final landfill design shall be provided to the Department for review and approval at least 180 days prior to start of operation. The final plans for this Facility shall include provisions for the isolated temporary handling of suspected hazardous, toxic or pathological wastes.

2. No suspected or known hazardous, toxic, or infectious wastes as defined by federal, state or local statutes, rules, regulations or ordinances shall be burned or landfilled at the site. The Permittee shall prepare and submit for approval to the South Florida District Office and PBCHD a written training program on the detection and handling of hazardous, toxic or infectious wastes.

3. Rodent and insect control shall be provided as necessary to protect the health and safety of site employees and the public. Pesticides used to control rodents, flies, and other vectors shall be as specified by the Florida Department of Agriculture and Consumer Services.

4. Storage of putrescible waste for processing shall not exceed storage capacity of the refuse bunker or tipping floor as designed on the approved plan.

5. Ash prior to transport to the landfill shall be stored in an enclosed building on an impervious surface or other method approved by the Southeast District Office.. Final disposal of the ash shall be into the lined landfill. Any leachate generated within the building shall be collected and disposed of by a method approved by the Southeast District Office. The Southeast District Office shall notify the SFWMD of the plans and specifications regarding the above referenced method.

6. A monthly report shall be prepared detailing the amount and type (putrescible, special wastes, boiler residue, etc.) of materials landfilled at the site, and the treatment provided (see condition XIV.E.2. above). These reports shall be furnished to the Southeast District Office and PBCHD quarterly, commencing 120 days after the Resource Recovery Facility becomes operational and is producing residues.

7. The temporary hazardous waste storage facility shall be designed, constructed and operated in conformance with section 17-30.171, FAC. The design of the facility, operational procedures, personnel training program, contingency plans and closure plans shall be submitted to the department, PBCHD and SFWMD for review and approval.

8. All cells will be constructed to promote leachate drainage to a low end of the cell; all leachate collected at the

low end of active or inactive cells shall be pumped or transported to the leachate collection system for transmission to the treatment system. Leachate collected above the primary liner shall be monitored quarterly for conductivity, pH, copper, arsenic, zinc, phenols, oil and grease and total organic halogens. Results of such monitoring shall be reported to the Southeast District Office and PBCHD. Leachate collected between the primary and secondary liners shall be monitored quarterly for conductivity, chlorides, ammonia, iron, sulfur, nitrates, and zinc. Results will be reported to the Southeast District Office and PBCHD quarterly. The monitoring parameters set forth herein may be modified dependent upon the type of liners utilized and the manufacturer's recommendations to protect the integrity of the liners due to the classes of chemical constituents in the leachate which will be in contact with the liner(s). The Permittee shall provide the Southeast District Office with a certified letter from the liner manufacturer stating what classes of chemical constituents could damage the liners' integrity and include those parameters as part of the quarterly monitoring program noted above.

9. An EP toxicity analysis of the ash residue being land-filled for the chemicals listed and using the prescribed method as set forth in 40 CFR s261, Appendix II, shall be conducted within 30 days after commencement of commercial operation. In addition, said ash residue shall be tested for zinc and dioxin (2, 3, 7, 8 - TCDD) content.

10. Results from said residue analysis shall be sent to the Southeast District Office and the PBCHD within 30 days of receipt. Results will be used to determine whether or not these materials constitute a "Hazardous Waste" as defined by applicable Federal or state regulations. Results of these analyses may also be used for correlation with groundwater monitoring information and in any subsequent modification of conditions.

11. If residue materials are determined to be a "Hazardous Waste", then measures shall be taken to treat or dispose of the residues pursuant to rule promulgated by Federal, State or Local authorities, as may be applicable.

12. If the nature of materials received at the facility becomes altered, either due to modification of conditions, i.e., the facility is allowed to incinerate already known hazardous wastes such as pesticides, or if groundwater monitoring reveals abnormal groundwater conditions which may be attributable to the landfilling of this residue, then a subsequent analysis may be required at that time.

13. There shall be no discharge to waters of the State of polychlorinated biphenyl compounds.

14. The Permittee shall provide the Southeast District Office and the PBCHD with a set of full-sized engineering signed and sealed by an engineer registered in the State of Florida for the operational and closure phases of the landfill for review and approval at least 90 days prior to implementation of those phases. Within 90 days after completion on the closure phase of the project, the Permittee shall submit certified as-built plans signed and sealed by a Florida Registered Professional Engineer.

15. To ensure that the bottom liners are continuous throughout the cell, the liners will be installed either by the manufacturer or by a competent experienced lining contractor according to the manufacturer's specifications. In addition, as part of quality control measures, field seams between in-place liner and newly installed liner will be tested according to ASTM specifications to ensure integrity between materials and certified in writing by the liner manufacturer, contractor, and engineer of record to the Southeast District Office and PBCHD. Top liners, if required, shall be installed in accordance with Closure requirements of the Southeast District Office, PBCHD and SFWMD.

16. The extension of the EPB-10 canal shall be routed around the landfill. The canal extension shall not be placed in corrugated metal pipe under the landfill.

F. Operational Safeguards

The overall design and layout of the facilities shall be such as to mitigate potential adverse effects 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, Florida Statutes, by the Industrial Safety Section of the Florida Department of Commerce will be complied with during operation.

G. Transmission Lines

The directly associated transmission lines from the Resource Recovery Facility electric generators to the Florida Power and Light Company transmission system shall be kept cleared without the use of herbicides.

H. Noise

Operational noises shall not exceed local noise ordinance limitations nor those noise standards imposed by zoning.

I. Potable Water System

The potable water system (wells, pipes, pumps and treatment facilities) shall be designed, constructed and operated in conformance with the applicable provisions of Chapters 17-21 and 17-22, FAC. Plans and specifications for these facilities shall be provided to the Southeast District Office and the Palm Beach County Health Department for review and approval 90 days

prior to construction.

XV. WATER MANAGEMENT DISTRICT CONDITIONS - GENERAL

A. The Solid Waste Authority shall prosecute the work authorized under the Certification in a manner so as to minimize any adverse impact of the works on fish, wildlife, natural environmental values, and water quality. The Solid Waste Authority/Venor shall institute necessary measures during the construction period, including full compaction of any fill material placed around newly installed structures, to reduce erosion, turbidity, nutrient loading and sedimentation in the receiving waters.

B. The operational phases of the surface water management system authorized under this Certification shall not become effective until a Florida registered professional engineer certifies upon completion of each phase that these facilities have been constructed in accordance with the design approved by the District. Within 30 days after completion of construction of each phase, the Authority shall submit the engineer's certification, and notify the District that the facilities are ready for inspection and approval.

C. All road centerlines shall be set at or above the flood elevation generated by a three-year, twenty-four hour storm event, in accordance with Palm Beach County criteria, as may be amended, and in accordance with the South Florida Water Management District's Rule 40.E-4., as may be amended.

D. All building floors shall be set at or above flood elevations generated by a three-day, one hundred year storm event, in accordance with Palm Beach County criteria, as may be amended, and in accordance with the South Florida Water Management District's Rule 40.E-4., as may be amended.

E. Off-site discharges during construction and development shall

be made only through the discharge structures authorized by this Certification.

F. No construction authorized herein shall commence until the Permittee has agreed, in writing, to the reasonable satisfaction of SFWMD that it will be responsible for the construction, operation, and maintenance of the entire surface water management system for the certified facility during the term of its lease.

G. No construction authorized herein shall commence until the Solid Waste Authority has agreed, in writing, by letter or resolution, that it will be responsible for the construction, operation, and perpetual maintenance of the entire surface water management system, both during operation of the facility and following the closure of the whole or any part of the facility. Responsibility for the operation and maintenance of the surface water management system shall not be assigned or delegated without prior written approval of the District.

H. This Certification is based on the applicant's submitted information to the District which reasonably demonstrates that adverse off-site water resource related impacts will not be caused by the authorized activities. The plans, drawings, and design specifications submitted by the applicant shall be considered the minimum standards for compliance. It is also the responsibility of the Solid Waste Authority/Vendor to ensure that adverse off-site water resource related impacts do not occur during construction.

I. The Solid Waste Authority/Vendor shall secure a well construction permit prior to construction, repair, or abandonment of any wells as described in Chapter 40E-3, F.A.C.

J. In the event of a declared water shortage, water use reductions may be ordered by the SFWMD in accordance with the Water Shortage Plan, Chapter 40E-21, F.A.C.

K. This project must be constructed in compliance with and meet all requirements set forth in Chapter 373, Florida Statutes, and Chapter 40E-2, 40E-3, and 40E-4, FAC.

L. The Solid Waste Authority/Vendor shall hold and save the SFWMD harmless from any and all damages, claims, or liabilities which may arise by reason of the construction, operation, maintenance or use of any facility authorized by this Certification, to the extent permitted under Florida law.

M. Authorized representatives of the District shall be allowed to enter the premises to inspect and observe the operation of the surface water management system and associated landfill facilities, mitigation areas, and monitoring wells in order to determine compliance with the conditions of this Certification, as provided in Condition V.

XVI. WATER MANAGEMENT DISTRICT - SITE SPECIFIC STANDARDS

A. Prior to construction of any phase of either the Solid Waste Energy Resource Recovery Facility or the ash residue/unprocessable materials landfill, a complete set of paving, grading, and drainage plans with supporting calculations for the 40-acre Resource Recovery Facility and Jog Road must be submitted to the South Florida Water Management District for review and written approval that the plans are in compliance with Chapters 40E-2 and 40E-4, F.A.C. Said plans shall include the following:

1. Paving, grading and drainage plans with special attention to perimeter site grading; and

2. Drainage calculations including:

- a. Design storms used including depth, duration and distribution;

b. Stage-storage computations for the project and stage-discharge computations for the outfall structure(s);

- c. Acreages and percentage of property proposed as:
- (1) impervious surfaces (excluding water bodies)
 - (2) pervious surfaces (green areas)
 - (3) lakes, canals, retention areas, etc.
 - (4) total acreage of the project

d. Runoff routing calculations showing discharges, elevations, and volumes detained during applicable storm events; and

e. Calculations required for determination of minimum building floor and road elevations.

B. Any subsequent modifications to the drawings and supporting calculations submitted to the South Florida Water Management District which alters the quantity or quality of discharge of water offsite shall be pursuant to Section 403.516, F.S., and Rule 17-17.211, F.A.C. Such modifications shall be submitted to the District for a determination that the modifications are in compliance with Chapters 40E-2 and 40E-4, F.A.C. This includes modification of the discharge route.

C. Minimum standard 24" x 36" surface water management construction plans for the project as proposed as well as any modifications shall be submitted to this District for review and written approval 30 days prior to the commencement of construction.

D. Prior to use and/or connection with any District works, the District shall be notified and the Permittee shall obtain written approval pursuant to Chapter 40E-6.041, F.A.C.

E. Prior to lowering of water levels in excavation sites, the following conditions shall be met:

1. Withdrawal rates, and depending on the methods proposed,

well construction details, well and pump capacities and locations, and the data from the groundwater monitoring network shall be provided to the District for review and written approval;

2. The impacts of the proposed withdrawals shall be assessed and provided to the District;
3. No dewatering discharge shall be allowed to drain from the property and
4. The District concurs in writing that there will be no adverse impacts as a result of the proposed withdrawals under sections 373.223(A)-(C) of the Florida Statutes.

F. Final water use rates for process and irrigation and well locations shall be submitted to the District for review and written approval prior to well construction when a Vendor and final plant design are determined.

G. Prior to closure, detailed closure plans pursuant to Chapter 17-7, F.A.C., shall be submitted to the District for review and written approval.

H. On-site areas which are dedicated for the fire station and Turnpike Interchange are considered by this District as separate from the Certification, and therefore subject to permitting requirements, pursuant to Chapter 373, F.S.

I. Any on-site hazardous materials temporary storage and transfer facility constructed at this site pursuant to the Water Quality Assurance Act should be considered separate from the Certification process and subject to regulatory permits. The design of the building and related infrastructure should be submitted to this District for review and verification that the proposed facility has been designed to prevent any stored or transferred hazardous materials from coming in contact with the surface water management system.

J. If modification and/or realignment of Northern Palm Beach

County Water Control District's Canal EPB 10 is necessary, a modification must be obtained for Surface Water Management Permit No. 50-01347-S.

K. Prior to construction of either the Solid Waste Resource Recovery Facility or the ash/residue/unprocessable materials landfills, a phasing plan for the landfills shall be submitted to the District for review and written approval, including detailed drawings and supporting calculations showing how leachate will be separated from runoff in the working area (temporary berms, diversion dikes, cover material, etc.).

L. Surface Water Management plans shall be revised to include spreader swales (or District approved equivalent) to approximate sheetflow discharge into the wetland areas. In addition, a sedimentation "trap" shall be designed, subject to District approval of calculations and discharge locations into the wetlands.

M. Discharge structures shall include a baffle, skimmer, or other mechanism suitable for preventing oil, grease, or other floatable materials from discharging to and/or from retention/detention areas.

N. Prior to landfill construction, a screw gate shall be installed on the water control structure at EPB 10, capable of restricting discharge of poor quality surface water, up to and including the 25 year, 3 day level.

O. Critical areas, including the conveyance and perimeter swales, and areas adjacent to the let down pipes or conduits shall be stabilized to prevent erosion.

P. Energy dissipators shall be used whenever let down pipes discharge into perimeter swales, or the let down pipes or conduits meet the terraces.

Q. In the event of the installation of the wet scrubbing system for air pollution control, the permitte shall submit the following to the District for review and written approval:

1. Calculations and supporting documentation of the effect, if any, that the disposal of the wet scrubber waste product will have on the surface wate management system or stormwater runoff quality.

2. Calculations and supporting documentation if any additional water use as a result of construction and operation of the wet scrubber system, including identification of the proposed source of water and evaluation of impact on the Water Catchment Area.

R. Water quality samples shall be taken at the discharge surface water discharge structure locations of the water management system into EPB 10 during periods of discharge according to the schedule below. Flow shall be measured continuously at the discharge location into EPB 10 by means of a recording flow meter. A laboratory certified by the State of Florida shall be responsible for all water quality analyses. Chain of custody documentation shall be maintained for all sampling. Reports of water quality results and discharge rates shall be submitted to this District for review and written approval on a semi-annual basis. Results of any additional stormwater quality sampling required by the Florida Department of Environmental Regulation shall be provided to the District. Monitoring requirements will be evaluated by this District following two years of data collection.

Monitoring Type Schedule

Parameters

A. General
(Quarterly)

Total Organic Carbon, Dissolved Oxygen, pH, Turbidity, Specific Conductance, Chemical Oxygen Demand, Alkalinity, Total Suspended Solids, Ammonium N, Nitrate N, Total Kjeldahl Nitrogen

B. Organics
(Semi-annual)

Trichloroethylene, Tetrachloro-
Ethylene, Carbon Tetrachloride,
Vinyl Chloride, 1,1,1-Tri-
chloroethane, 1,2-Dichloro-
ethane, Benzene, Ethylene
Dibromide

C. Metals
(Semi-annual)

Aluminum, Antimony, Beryllium,
Cadmium, Copper, Cyanide, Iron,
Lead, Mercury, Nickel,
Selenium, Silver, and Zinc

S. Any Northern Palm Beach County Water Control District facilities which have been permitted by this District and are not yet constructed but would be affected by this project must be fully operational prior to commencement of stormwater discharge from this project.

T. There shall be a quarterly groundwater monitoring frequency for the groundwater monitoring network. The District shall be copied on the data results of the network, and any other groundwater monitoring data required by the Florida Department of Environmental Regulation.

U. At least 60 days prior to the commencement of construction, the District staff must have received and reviewed any pertinent additional information required to be submitted under the District's site specific standards and the conditions of certification. Written approval for the desired construction must be obtained prior to commencement of construction.

V. Sixty days prior to the commencement of construction of the transmission line, the permittee shall provide the District with the location of areas in which fill and associated facilities will be placed. Written confirmation that the fill and associated

facilities will not cause adverse off-site impacts shall be received from the District prior to commencement of construction.

W. In the event of the installation of a wet air pollution control scrubbing system the Permittee shall submit the following to the District for review and approval;

1. Design and supporting documentation for the scrubber system, including chemical and physical properties of any possible waste products generated by the system and the method of disposal of such waste.

2. Calculations and supporting documentation of the effect, if any, that the disposal of the scrubber waste product will have on the surface water management system or storm water runoff quality.

3. Calculations and supporting documentation for any additional water use as a result of construction and operation of the scrubber system.

4. Proposed source of water for the scrubber system. If the proposed source of water is onsite withdrawal of groundwater, the applicant shall meet the requirements of Condition XVI.G. herein.

5. If the proposed source of scrubber water is a public water supply system, the Permittee shall receive approval by the District prior to construction of the scrubber system.

XVII. OPERATIONAL CONTINGENCY PLANS

A. Operating Procedures

The permittee shall develop and furnish the Southeast District a copy of written operating instructions for all aspects of the operation which are critical to keeping the facility working properly. The instructions shall also include procedures for the handling of suspected hazardous, toxic and infectious wastes.

B. Contingency Plans

The Permittee shall develop and furnish the Southeast

District Office written contingency plans for the continued operation of the system in event of breakdown. Stoppages which compromise the integrity of the operations must have appropriate contingency plans. Such contingency plans should identify critical spare parts to be maintained on site.

C. Current Engineering Plans

The Permittee shall maintain a complete current set of modified engineering plans, equipment data books, catalogs and documents in order to facilitate the smooth acquisition or fabrication of spare parts or mechanical modifications.

D. Application Modifications

The permittee shall furnish appropriate modifications to drawings and plot plans submitted as part of the application, including operational procedures for isolation and containment of hazardous wastes.

XVIII. TRANSFER OR ASSIGNMENTS OF RIGHTS, DUTIES, OR OBLIGATIONS

If contractual rights are transferred under this certification, Notice of such transfer or assignment shall immediately be submitted to the Department of Environmental Regulation and South Florida Water Management District by the previous certification holder (Permittee) and Assignee. Included within the Notice shall be the identification of the entity responsible for compliance with the certification. Any assignment or transfer shall carry with it full responsibility for the limitations and conditions of this certification.

XIX. PROPRIETARY DOCUMENTS OR INFORMATION - CONFIDENTIALITY

Proprietary or confidential data, documents or information submitted or disclosed to any agency shall be identified as such by the Permittee and shall be maintained as such pursuant to applicable Florida law.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

JAN 30 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

RECEIVED
FEB 3 1992
Division of Air
Resources Management

RE: North County Resource Recovery Facility (PSD-FL-108A)

Dear Mr. Fancy:

This is to acknowledge receipt of your final determination and draft permit for the above referenced facility's proposed Prevention of Significant Deterioration (PSD) permit modification, by your letter dated January 14, 1992. The facility presently consists of three municipal solid waste (MSW) processing lines, any two of which can handle 2,000 tons per day (tpd) of incoming MSW, two boiler units, each with a capacity to burn 900 tpd of refuse derived fuel (RDF), and one turbine-generator, rated at 62 megawatts.

Your determination includes modifications and revisions which propose to: increase the permitted heat input capacity for each boiler from 360 MMBtu/hour to the design allowed heat input capacity of 412.5 MMBtu/hour, modify the emission limitations for nitrogen oxides, carbon monoxide, sulfur dioxide, and hydrogen chloride, delete the emission limitations for sulfuric acid mist, include emission limitations for dioxins and furans, correct all emission concentrations to 7% oxygen rather than 12% carbon dioxide, and implement continuous emissions monitoring for carbon monoxide, nitrogen oxides, and sulfur dioxide.

We have reviewed the package as submitted, in accordance with the appropriate federal regulations (40 CFR 60, Subpart Ca, Emissions Guidelines and Compliance Times for Municipal Waste Combustors) and have no adverse comments. Thank you for the opportunity to review and comment on this application. If you have any questions or comments, please contact Mr. Scott Davis of my staff at (404) 347-5014.

Sincerely yours,

Jewell A. Harper, Chief
Air Enforcement Branch
Air, Pesticides, and Toxics
Management Division

cc: M. DeWitt
B. Andrews
D. Brooks, SE-Dist

G. Stormer, ARS
C. Shaulk, NPS
M. Bremer, PBC



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

NOV 20 1991

4APT-AEB

RECEIVED

NOV 22 1991

Division of Air
Resources Management

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: North County Resource Recovery Facility (PSD-FL-108-A)

Dear Mr. Fancy:

This is to acknowledge receipt of your revised preliminary determination and draft permit for the above referenced facility's proposed Prevention of Significant Deterioration (PSD) permit modification, by your letter dated October 16, 1991. The facility presently consists of three municipal solid waste (MSW) processing lines, any two of which can handle 2,000 tons per day (tpd) of incoming MSW, two boiler units, each with a capacity to burn 900 tpd of refuse derived fuel (RDF), and one turbine-generator, rated at 62 megawatts. Your determination proposes to increase the permitted heat input capacity for each boiler from 360 MMBtu/hour to the design allowed heat input capacity of 412.5 MMBtu/hour for each boiler. Your determination also proposes to modify the emission limitations for nitrogen oxides, carbon monoxide, sulfur dioxide and sulfuric acid mist.

This facility was originally permitted on December 16, 1986, and began operation in May, 1989. Pursuant to the size of the facility and its construction date, the regulations governing the control of certain designated pollutants from the facility is 40 CFR 60, Subpart Ca (Emissions Guidelines and Compliance Times for Municipal Waste Combustors (MWC)). These guidelines are designated to cover any MWC with MWC unit capacity greater than 250 tpd for which construction, modification, or reconstruction is commenced on or before December 20, 1989. The North County facility is categorized as a very large MWC plant, meaning a MWC plant with MWC plant capacity greater than 1100 tpd of MSW. We have reviewed the package as submitted, in accordance with these federal guidelines, and have the following comments.

Boiler Capacity

Your determination proposes to modify the heat rate limitations to coincide with the actual design rate. We concur with your proposal to increase the permitted heat input capacity to 412.5 MMBtu/hour for each boiler.

Nitrogen Dioxides

Your determination proposes to raise the NO_x emission limit from 0.32 lb/MMBtu to 0.48 lb/MMBtu (24-hour block average). We concur with this proposal, as this limit is representative of BACT for other RDF facilities permitted within Region IV and nationally.

Carbon Monoxide

Your determination proposes to lower the CO emission limit from 400 ppmv (3-hour average, at 12% CO₂) to 200 ppmv (24-hour average, at 7% O₂) and 400 ppmv (1-hour average, at 7% O₂). We concur with this proposal, as the federal guidelines for CO for this facility are 200 ppmv (24-hour average, at 7% O₂).

Sulfuric Acid Mist

Your determination proposes to delete the presently permitted emission limit for sulfuric acid mist. At the present time, EPA's test method for quantifying sulfuric acid mist emissions (Method 8) is biased high, due to the concentrations of fluoride and ammonia in the flue gases. On the basis of previous PSD recommendations from Region IV (Hillsborough County Resource Recovery Facility, North Broward County Resource Recovery Facility, South Broward County Resource Recovery Facility), we concur with this proposal.

Sulfur Dioxide

Your determination proposes using EPA's guidelines for very large MWC plants of 70% removal or 30 ppmv at 7% O₂ (24-hour geometric mean). In accordance with the federal guidelines, this permitted limit should also state that either the applicable percent reduction or the parts per million by volume guideline, "whichever is less stringent," is the guideline limit for the facility.

Hydrogen Chloride

Your determination proposes using EPA's guidelines for very large MWC plants of 90% removal or 25 ppmv at 7% O₂ (3 run test average). In accordance with the federal regulations, this permitted limit should also state that either the applicable percent reduction or the parts per million by volume guideline, "whichever is less stringent," is the guideline limit for the facility.

Dioxins/Furans

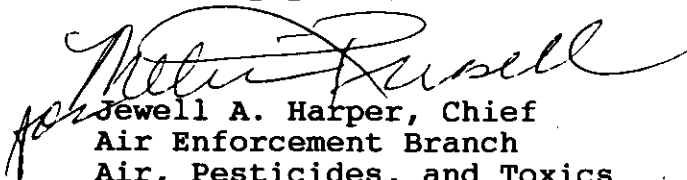
In accordance with federal guidelines, your determination should (as a minimum) include the emission guidelines for the concentration of the dioxin/furan component of MWC organics for very large RDF plants. These levels are 60 nanograms/standard cubic meter or 24 grains/billion dry standard cubic foot, both corrected to 7% O₂. The reference for compliance test methods and procedures for dioxin/furan emissions should be 40 CFR 60.58a(d).

Opacity

In accordance with federal guidelines, the opacity from each unit should not exceed 10%, for a 6-minute average.

Thank you for the opportunity to review and comment on the package. If you have any questions or comments, please contact Mr. Scott Davis of my staff at (404) 347-5014.

Sincerely yours,



Jewell A. Harper, Chief
Air Enforcement Branch
Air, Pesticides, and Toxics
Management Division

cc: B. Andrews
M. DeLuitt
J. Goldmann, SEHD
G. Stammers, PEHD

SOLID WASTE AUTHORITY

OF PALM BEACH COUNTY

7501 North Jog Road
West Palm Beach, Florida 33412
Telephone (407) 640-4000



November 6, 1991

RECEIVED

NOV 08 1991

Division of Air
Resources Management

Palm Beach County
Public Health Unit
P.O. Box 29
West Palm Beach, FL 33402

Attn: Jean E. Malecki, MD, MPH

Subject: Dioxin Testing - NCRRRF Facility

Dear Dr. Malecki:

We have received a copy of the comments the Health Unit staff have submitted concerning dioxin testing requirements in the modified permit for the NCRRF facility.

While dioxin is an issue from a public perception standpoint, it appears that from a regulatory standpoint the situation is less clear. For this reason, EPA has undertaken a scientific reassessment of dioxin, to re-evaluate existing data and develop new data to accurately determine the true risks of dioxin. This process, whatever the outcome, clearly shows that a more objective evaluation is underway.

Nevertheless, the Authority understands the public concern. Therefore, we will agree to a one-time test for dioxin to be conducted with the annual stack test required by the DER permit. Until the DER and EPA finalize the promulgation and adoption of any Federal standards for dioxin, we believe this informational test is the only means available to adequately address the issue.

If you have any questions or I can be of further assistance, please do not hesitate to contact me.

Very truly yours,

Timothy F. Hunt, Jr.
Executive Director

TFH/ds

cc: Frank Gargulio, PBCPHU
Jim Stormer, PBCPHU
Clair Fancy, DER
Barry Andrews, DER
Mike Hewitt, DER

SOLID WASTE AUTHORITY

OF PALM BEACH COUNTY

7501 North Jog Road
West Palm Beach, Florida 33412
Telephone (407) 640-4000

RECEIVED

NOV 6 1991

Division of Air
Resources Management



November 5, 1991

Mr. Barry Andrews
Professional Engineer Administrator
Permitting and Standards Section
Bureau of Air Regulation
Florida Department of Environmental Regulation
Twin Towers Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Re: Solid Waste Authority Palm Beach County
North Central Regional Resource Recovery Facility
PSD-FL-108A

Dear Mr. Andrews,

Please find the enclosed proof of publication for the "Notice of Intent To Issue" for the proposed permit modifications for the Solid Waste Authority North Central Regional Resource Recovery Facility.

If there are any questions or comments please do not hesitate to contact myself or Marc Bruner.

Sincerely,

Richard A. Statom
Assistant Director
Environmental Programs

cc: M. Acworth
S. Brooks
J. Sturmer
J. Harper, E-PA

THE PALM BEACH POST

Published Daily and Sunday
West Palm Beach, Palm Beach County, Florida

PROOF OF PUBLICATION

STATE OF FLORIDA
COUNTY OF PALM BEACH

Before the undersigned authority personally appeared Chris Bull
who on oath says that she/he is Class. Sales Mgr. of The Palm Beach Post,
a daily and Sunday newspaper published at West Palm Beach in Palm Beach County,
Florida; that the attached copy of advertising, being a _____

_____ Notice
_____ intent to issue permit
in the matter of _____
in the _____ Court, was published in said newspaper in
the issues of _____ October 20, 1991

Affiant further says that the said The Post is a newspaper published at West Palm Beach, in said Palm Beach County, Florida, and that the said newspaper has heretofore been continuously published in said Palm Beach County, Florida, daily and Sunday and has been entered as second class mail matter at the post office in West Palm Beach, in said Palm Beach County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that she/he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Chris Bull

Sworn to and subscribed before me this 21 day of October A.D. 19 91

Bette D. Cullen
NOTARY PUBLIC, STATE OF FLORIDA
MY COMMISSION EXPIRES OCT. 10, 1994
BONDED BY GENERAL INS. CO.

NO. 428435
STATE OF FLORIDA
DEPARTMENT OF
ENVIRONMENTAL
REGULATION
NOTICE OF INTENT
TO ISSUE PERMIT

The Department of Environmental Regulation gives notice of its intent to issue a modification to the construction permit to authorize the existing boilers to operate at their full design capacity for the North County Regional Resource Recovery Facility located at 7501 North Jog Road, West Palm Beach, near the intersection of the Beeline Highway and the Florida Turnpike in Palm Beach County, Florida. A determination of Best Available Control Technology (BACT) was required. The Department is issuing this intent to issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within (14) days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative (hearing) under Section 120.57, Florida Statutes. The Petition shall contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which

rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action. If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to be a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C. The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at: Department of Environmental Regulation Bureau of Air Regulation 2600 Blair Stone Road Tallahassee, FL 32399-2400 Department of Environmental Regulation Southeast District 1900 S. Congress Ave., Suite A West Palm Beach, FL 33406 Palm Beach County Health Dept. Division of Environmental Science and Engineering 901 E. Evernia Street West Palm Beach, FL 33406 Any person may send written comments on the proposed action to Mr. Barry Andrews at the Department's Tallahassee address. All comments received within 30 days of the publication of this notice will be considered in the Department's final determination. Furthermore, a public hearing can be requested by any person. Such requests must be submitted within 30 days of this notice. /s/ Sandra J. Bourhan PUB: Palm Beach Post October 20, 1991



STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

October 29, 1991

OCT 31 1991

Mr. C.H. Fancy, P.E., Chief
Bureau of Air Regulation
Division of Air Resources Management
Florida Department of Environmental Regulation
2600 Blair Stone Rd.
Tallahassee, FL 32399-2400

Division of Air
Resources Management

Re: Solid Waste Authority, North County Regional Resource
Recovery Facility, PSD-FL-108A

Dear Mr. Fancy:

The Palm Beach County Public Health Unit is in receipt of the Notice of Intent to Issue a permit modification for the referenced facility. In reviewing the proposed permit, we are concerned in that there were some significant changes made to the version of the May 2, 1991 Notice of Intent to Issue. Moreover, these changes were made without our consultation. One discernible change was the deletion of the requirement to maintain and monitor for a minimum 1800°F boiler/furnance temperature in specific condition No. 6. Under the discussion of dioxin in the Final PSD Determination and Permit (November 24, 1986), it is stated that:

"Combustion temperatures must be maintained at least 1800°F with residence times being at least 1 second."

In the absence of any monitoring to ensure this minimum temperature is being achieved, we have recommended that the facility be required to conduct performance tests for dioxins and furans (HRS/PBCPHU letter to DER dated October 8, 1990). We feel this is necessary in order to provide additional assurances to the public that the health concerns of dioxin/furan emissions are being addressed.

Another very strong argument for such testing is that the new Emission Guidelines for Municipal Waste Combustors (40 CFR Part 60, Feb. 11, 1991) does specify emission limits for dioxins and furans, and requires annual testing to demonstrate compliance. Based on this new information and continued public concerns, we strongly urge that the permit modification include a dioxin/furan standard with annual performance testing in accordance with the federal guidelines.



Pony Express Courier Corp.

A Baker Industries Company

ACCOUNT #

- GROUND AIR
 SATURDAY DELIVERY

WAYBILL #

6239150

SHIPPER Mr. James E. Storrer, Environmental Administrator			CONSIGNEE Mr. C.H. Fancy, P.E., Chief		
Palm Beach County Public Health Unit			Bureau of Air Regulation Division of Air Resources Management		
ADDRESS 901 Evernia Street			ADDRESS 2600 Blair Stone Road.		
CITY/STATE West Palm Beach, FL		ZIP REQUIRED 33401	CITY/STATE Tallahassee, FL		ZIP REQUIRED 32399-2200
NON-NEGOTIABLE WAYBILL SUBJECT TO CONDITIONS SET FORTH ON REVERSE SIDE HEREOF.					
SHIPPER'S SPECIAL INSTRUCTION / SHIPPER'S REF. CODE			BILL TO (SEE PARAGRAPH 3 ON REVERSE SIDE)		
COMMODITY DESCRIPTION White Envelope			RECEIVED IN GOOD ORDER: <i>NE Boon</i> CONSIGNEE SIGNATURE		
WEIGHT	PIECES 1	SHIPPER'S SIGNATURE X			
PONY EXPRESS AGENT			PECC 6 3/90		
CONSIGNEE COPY					

Page 2
10/29/91

We would also like to concur with the October 21 comments from Tom Tittle of the Southeast Florida District Office, especially regarding the relaxation of the mercury and VOC emissions. Considering the current controversy with mercury, we believe increasing the emission limitation for this metal would especially be a mistake. All feasible means to further reduce mercury emissions should be encouraged.

We strongly urge that you consider these recommendations in that we believe they are in our best interest as well as that of the facility, the public and the environment in large.

Should you have any questions, please call me at Suncon 273-3070.

Sincerely,

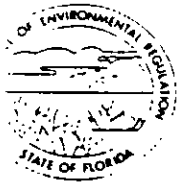
For the Division Director
Environmental Science and Engineering



James E. Stormer, Environmental Administrator
Air Pollution Control Section

FJG/JES/lh

cc: Barry Andrews, P.E., DER, Tallahassee
Tom Tittle, SEFD, DER
Jewell Harper, EPA, Atlanta
Mark Bruner, Ph.D., SWA



State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee	
To: <u>BARRY ANDREWS</u>	Location: <u>DARM/Tallahassee</u>
To: _____	Location: _____
To: _____	Location: _____
From: _____	Date: _____

Interoffice Memorandum

COPY

TO: Clair Fancy, DARM/BAR

FROM: Tom Tittle, SEFD *TT*

DATE: October 22, 1991

SUBJECT: PSD-FL-108A, Proposed Permit Modification

We are pleased to see that the Department is going to be issuing a renewable air operation permit for this facility according to Specific Condition (S.C.) 21. This approach to air permitting for these type facilities is consistent with Florida Statute 403.511(1). S.C. 21 requires application for an operation permit prior to the expiration date of the construction permit. However, the permit does not expire according to the expiration date on the proposed permit. We suggest that either an expiration date be specified or that S.C. 21 be modified to reflect some other basis for date of submittal. Please clarify whether or not this permit (which does not indicate that EPA will be signing it) will supersede the previous permit issued by EPA (drafted by the Department) and be recognized by EPA in lieu of that previous permit they signed.

According to Buck Owen, who was in our office today, the Power Plant Siting Certification (PPSC) will need to be modified as well so that it does not contradict the permit modification. I urge you to discuss the possibility of referring to the PSD permit issued by the Department in the PPSC in such a way that whenever such this permit is renewed or modified in the future it would automatically be incorporated into the PPSC without having to modify both. We recommend this for all PPSCs since this may alleviate some of the difficulty we might have in implementing the new Clean Air Act for these facilities. However, it appears we would have to issue our own permits to replace EPA's first in each case.

Please provide this office with calculations showing the maximum emissions (lb/hr and TPY) permitted by the stated emission limits for particulate, carbon monoxide, sulfur dioxide and hydrogen chloride. We are not sure of the lb/hr and TPY impact of the increase of mmBTU/hr on: particulate lb/dscf corrected to 7% O₂, CO ppmdv corrected to 7% O₂, 70% removal of SO₂ (when emissions

are greater than 30 ppm_{dv} at 7% O₂), and 90% removal of HCl (when emissions are greater than 25 ppm_{dv}). The lb/hr and TPY values are important in many respects including modeling that we assume was reevaluated based on the modified circumstances and for our emissions inventory system.

It would be wise to have a statement somewhere in this permit or in the PPSC that indicates that the current emission limitations supersede any previous BACT determinations for these pollutants at this facility. The BACTs in the PPSC contradict many of the values used and assume a certain mmBTU/ton of refuse which is variable.

We do not understand why the emission limitation for mercury was increased by 50 percent over the amount allowed in the PPSC. Mercury emissions are of significant concern in the South Florida area. This increase combined with the increase in mmBTU/hr results in 72% more mercury being allowed from this facility above that allowed by the PPSC. The compliance testing conducted for this facility demonstrated that it readily complied with the stricter 2.4×10^{-4} lb/mmBTU limit (neither unit tested higher than 21 percent of this limit). Also note that the applicant withdrew its request for modification of the mercury emission limit.

We likewise do not understand why the emission limitation for VOC was increased by 44 percent over the amount allowed in the PPSC. Palm Beach County is in a non-attainment area for ozone where VOC is the pollutant of concern. This increase combined with the increase in mmBTU/hr results in 65 percent more VOC being allowed from this facility above that allowed by the PPSC. The compliance testing conducted for this facility demonstrated that it readily complied with the stricter 0.16 lb/mmBTU limit (neither unit tested higher than 5 percent of this limit). Also note that the applicant did not request a modification of the VOC limit.

Our review of the NSPS for new large and very large municipal waste combustors (MWC) and the guidelines for existing MWCs does not give any limits for mercury and VOC. Even if they did, we do not feel it would be appropriate to relax the emission limits for mercury and VOC at this facility for the reasons stated above. We do not feel the intent of NSPS and EPA guidelines is to relax emission limitations for sources where compliance with a stricter limit has been demonstrated.

If more information is needed to support any of the above comments, please do not hesitate to contact me at SunCom 232-2650.

cc: Buck Oven, Power Plant Siting Coordinator
Barry Andrews, Bureau of Air Regulation
Jim Stormer, Palm Beach County Public Health Unit
Stephanie Brooks, Air Permitting