

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

ELECTRIC POWER PLANT SITE CERTIFICATION REVIEW

FOR

PASCO COUNTY RESOURCE RECOVERY FACILITY

CASE NO. PA 87-23

Staff Analysis

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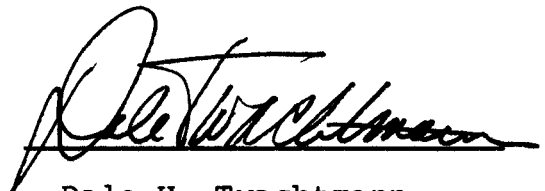
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Pursuant to Chapter 403, Part II, Florida Statutes, this report constitutes the Department of Environmental Regulation's required analysis and recommended Conditions of Certification for the Pasco County Resource Recovery Facility, PA 87-23. This report and attached Conditions of Certification are hereby approved.

9 March 88

Date



Dale H. Twachtmann
Secretary

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State of Florida Department of Environmental Regulation
Pasco County - Resource Recovery Project
Electric Power Plant Site Certification Review
Case No. PA 87-23

I. INTRODUCTION

Pursuant to Chapter 403, Florida Statutes, Part II, Pasco County applied in November 1987 for certification of a solid waste-fired electric power plant at a site in the northwestern region of the county on Hays Road about two and one-half miles north of State Road 52.

The proposed project will be an energy recovery facility which will be designed to initially generate approximately 25 megawatts (MW) of electrical power. In the anticipation of future needs, certification is being sought for an ultimate electric generating capacity of 29 MW. Pasco County plans to contract with a full service vendor to design, construct, and operate the plant for 20 or more years. Generated electricity will be transmitted to Florida Power Corporation's substation adjoining the proposed Pasco County facility. The primary purpose of the facility is to dispose of solid waste. Non-processible waste (including non-combustibles and demolition debris) and unusable ash or residue will be buried at an onsite double lined landfill. The sale of electricity will help offset the overall cost of owning and operating the facility.

II. DESCRIPTION OF SITE AND FACILITIES

The Energy Recovery Facility will be located on approximately 751 acres on Hays Road about two and one-half miles north of State Road 52. The site is approximately 8.5 miles east of Hudson and a little over ten miles northeast of Port Richey. The proposed plant site was primarily planted pine which was

recently harvested. The site topography is irregular with low areas and low sand ridges. The surface geology on the site is generally represented by a series of sand, clay and shell beds extending from the surface to a depth of approximately 30-50 feet forming the surficial aquifer system. It is underlain by a relatively impermeable layer of clayey materials known as the Hawthorne formation which in turn overlies the permeable limestone formations of the Floridan Aquifer.

The proposed facilities will consist of a gatehouse/weigh station, receiving and handling building, furnace boilers, turbine generators, an ash and solid waste disposal area, a cooling system, air pollution control systems, stormwater runoff control ponds, and a transmission line connecting to Florida Power Corporation's electrical substation.

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 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 site of the proposed resource recovery facility is zoned A-C (Agricultural District). A-C zoning is designed to preserve rural and open lands with agricultural value. Under Section 2 of Pasco County Ordinance No. 75-21, development and other activities conducted by Pasco County are exempt from the provisions of the Pasco County Zoning Ordinance.

The Solid waste and Resource Recovery Element of the County's Comprehensive Plan has been considered in the design of the resource recovery facility. The goal of the Element is to "dispose of the county's domestic and industrial waste in the safest and least expensive manner." To reach that goal, the county adopted the a number of objectives including:

1. To examine the effects of landfill and solid waste resource recovery on the environment.
2. To insure that all future landfills or waste resource operations will have minimal adverse effects on the citizens of the county.

3. To research the feasibility of resource recovery.
4. To conform with the existing state and federal requirements.

After reviewing the goals and objectives of the Solid Waste and Resource Recovery Element, the Pasco County Planning Director has determined that the resource recovery facility would be consistent with the goals and objectives of the Pasco County Comprehensive Plan.

Previous land use on the site included cattle grazing and planted pine trees. Most of the planted pines have been recently harvested. The area north of the site is low-density rural with some residential areas mixed with vacant agricultural land. Shady Hills Park is located about one mile north of the proposed facility. East of the site is predominately low-lying, vacant agricultural or wooded lands. South of the site is a medium-density single family residential area at about 50% of capacity. West of the site is another area of low-density residential development.

On February 16, 1988, the Hearing Officer conducted a public hearing to determine if the site was consistent and in compliance with existing land use plans and zoning ordinances. On March 25, 1988, the Hearing Officer found the site was consistent and in compliance with applicable land use plans and zoning ordinances.

V. AGENCY COMMENTS

Copies of the application were furnished in November 1988 to the Florida Public Service Commission, the Department of Community Affairs, and the Southwest 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 Department of Commerce
2. Florida Department of Health and Rehabilitative Services
3. Florida Department of Natural Resources

4. Florida Game And Fresh Water Fish Commission
 5. Florida Department of State - Division of Historical Resources
 6. Tampa Bay Regional Planning Council
 7. Florida Department of Agriculture and Consumer Services
- A number of these agencies have commented on the application.

A. Public Service Commission

On November 19, 1988, the Executive Director of the Florida Public Service Commission sent the following letter and Order to the department:

"Pursuant to the Florida Electrical Power Plant Siting Act (Chapter 403, Florida Statutes) the Florida Public Service Commission (FPSC) is empowered to make a determination of need for any power plant for which an applicant seeks certification.

"The FPSC is also required to provide the Department of Environmental Regulation a final report stating the Commission's final decision on the applicant's request for a determination of need. Enclosed is a copy of the Commission's Order No. 17752 which grants the petitioner's request for an affirmative determination of need. This order shall constitute the FPSC's final report as required in Chapter 403, Florida Statutes."

FPSC Order No. 17752 states as follows:

"Under the Florida Electric Power Plant Siting Act (Chapter 403, Florida Statutes) this Commission is empowered to make a determination of need for any electric power plant for which an applicant seeks certification under the act. As set out in Section 403.508(3), Florida Statutes, that affirmative determination of need by the Commission is a condition precedent to the conduct of the certification hearing.

"On February 24, 1987, we received the petition of Pasco County, Florida, for a determination of need for a 29 megawatt (MW) solid waste fired cogeneration power plant. The petition states that the facility will have an in-service date of January,

1991, and will operate initially with a single 22 MW generator. At maximum capacity of 29 MW the facility will use up to 1200 tons per day of municipal solid waste as fuel. Power produced by the facility will be sold to Florida Power Corporation.

"Section 403.519, Florida Statutes, designates this Commission as the exclusive forum for determination of need and sets out the criteria which shall be considered in making such a determination. They are:

- (1) The need for electric system reliability and integrity;
- (2) The need for adequate electricity at a reasonable cost;
- (3) The cost effectiveness of the proposed plant, i.e., whether the proposed plant is the most cost effective alternative available; and
- (4) Conservation measures taken that are reasonably available to the applicant which might mitigate the need for the proposed plant.

Section 403.519 also provides that the Commission may consider such other matters as it deems relevant in making its determination of need.

"We have reviewed Pasco County's application in the light of the criteria established by the statute. It is our conclusion that Pasco County's plant meets the relevant criteria for a determination of need under Section 403.519.

"Pasco County's 29 MW plant, although small, will make some contribution to electric system reliability and integrity in Peninsular Florida. We project that without the addition of qualifying facilities or power plants before the summer of 1993, peninsular Florida will have total available capacity of 32,318 MWs with an expectant coincident firm peak demand of 25,138 MWs. This equates to a reserve margin of 28 percent. The contribution of Pasco County's facility to this reserve margin would only be one one-hundredth of one percent. Clearly, this would be a small amount; yet it is a positive contribution.

"Applying the second and third criteria enumerated in Section 403.519 is somewhat problematical. In order to determine whether the facility would help meet the need for adequate

electricity at a reasonable cost and whether the proposed plant - is the most cost effective alternative available, it is necessary to consider the cost to Florida ratepayers of the facility's output and the terms and conditions under which the output would be provided to the power grid. Pasco County has not signed a standard offer or negotiated contract with an electric utility for the purchase of its facility's output. Thus, based on the current state of affairs, we would be unable to make the economic judgement necessary to determine if the second and third criteria of reasonable cost and cost-effectiveness have been met.

However, Pasco County has made a commitment to the Commission that the facilities output, when the plant becomes operational, will be supplied in accordance with applicable Commission rules and Florida Statutes. This commitment means that the upper limit on the sale of Pasco County's generative output would be the standard offer amount as determined under the Commission's formula or other such formula as may be appropriate under existing rules and statutes at the time a contract with the utility is signed by Pasco County. This commitment from Pasco County we find that the electricity produced by the solid waste facility will be priced on a cost-effective basis and supplied at a reasonable cost, as will be judged by the Commission's standards in effect at the time.

"In as much as Pasco County's facility will serve the dual purpose of waste disposal and production of electricity we do not believe that conservation of electrical energy is directly at issue in this case. We, therefore, make no specific finding on this statutory criteria nor do we find it necessary to apply any specific criteria in making our determination of need.

"Now, therefore, in consideration of the above, it is

"ORDERED by the Florida Public Service Commission that the petition by Pasco County for a determination of need for its proposed 29 megawatt solid waste-fired generating facility is hereby granted as set forth in the body of this order. It is further

"ORDERED that this docket be closed.

"By ORDER of the Florida Public Service Commission, this 26th day of June, 1987."

A copy of the PSC order is included in Appendix A.

B. Department of Community Affairs

On January 20, 1988, 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 Pasco County Resource Recovery Project 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 November 16, 1987, Pasco County submitted an application for power plant site certification to the Florida Department of Environmental Regulation (DER). The proposed plant is a resource recovery facility which will utilize a mass-burn system to incinerate wastes and produce steam to power its turbine generators. Although the disposal of solid waste is the primary purpose of the facility, the plant will have a initial gross electrical generating capacity of approximately 22 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 75 or more 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.). Certification under the act may also be sought for facilities less than 75 megawatts, at the option of the applicant. Section 403.507 of this act requires the Department of Community Affairs (DCA) to review a

power plant siting application for compatibility with the State Comprehensive Plan (SCP) 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 also presents the goals and policies of the SCP which are 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, the SCP bill). 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. To assess the compatibility of the power plant application with the SCP, the 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 this report, a determination of the project's overall compatibility with the SCP is made by assessing these positive and negative impacts of the project."

Project Description

"The proposed Pasco County Solid Waste Resource Recovery Facility is to be located in northwest Pasco County, in sections 24, 25, and 26 of Township 24 south, range 17 east. The 751 acre site lies 2.5 miles north of the State Road 52 and 7 miles east of U.S. 19 east. The nearest incorporated areas, Port Richey and Weeki Wachee, are about 10 miles away.

In addition to the resource recovery facility, the project site will contain stormwater retention ponds, landfill/ashfill areas, an internal roadway system, and open areas. Initially the proposed facility will have a continuous design rated capacity of 900 tons per day of municipal solid waste and a gross electrical generating capacity of approximately 22 megawatts. Certification is being sought for an eventual generating capacity of 29 gross megawatts, produced by burning 1,200 tons of MSW per day. The County will contract with a full service vendor to design, construct, and operate the project for a period of 20 years. Construction of the project is scheduled to begin in August 1988 and it is expected to be in service by August 1991.

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 Water Resources, Natural Systems and Recreational Lands, Air Quality, Energy, Hazardous and Nonhazardous Materials and Waste, Land Use, Public Facilities, and Cultural and Historical Resources. The applicable goals and policies associated with these subjects areas are presented below. As review of this certification application continues, additional goals and policies of the SCP may be adduced, as appropriate, for the determination of compatibility with the SCP.

WATER RESOURCES

"Policy No.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 No.2-- Identify and protect the functions of water recharge areas and provide incentives for their conservation.

"Policy No.5-- Ensure that existing development is compatible with existing local and regional water supplies.

"Policy No.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 No.9-- Protect aquifers from depletion and contamination through appropriate regulatory programs and through incentives.

"Policy No.10-- Protect surface and groundwater quality and quantity in the state.

"Policy No.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 No.12-- Eliminate the discharge of inadequately treated wastewater and stormwater runoff into the waters of the state.

"Policy No.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

"Policy No.1-- Conserve forests, wetlands, fish, marine life, and wildlife to maintain their environmental, economic, aesthetic, and recreational values.

"Policy No.3-- Prohibit the destruction of endangered species and protect their habitats.

"Policy No.7-- Protect and restore the ecological functions of wetlands systems to ensure their long-term environmental, economic, and recreational value.

"Policy No.8-- Promote restoration of the Everglades system and of the hydrological and ecological functions of degraded or substantially disrupted surface waters.

AIR QUALITY

"Policy No.1-- Improve air quality and maintain the improved level to safeguard human health and prevent damage to the natural environment.

"Policy No.2-- Ensure that developments and transportation systems are consistent with the maintenance of optimum air quality.

"Policy No.3-- Reduce sulfur dioxide and nitrogen oxide emissions and mitigate their effects on the natural and human environment.

"Policy No.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 No.5-- Reduce the need for new power plants by encouraging end-use efficiency, reducing peak demand, and using cost-effective alternatives.

"Policy No.9-- Promote the use and development of renewable energy resources.

HAZARDOUS AND NONHAZARDOUS MATERIALS AND WASTE

"Goal - All solid waste, including hazardous waste, waste-

water, and all hazardous materials, shall be properly managed, and the use of landfills shall be eventually eliminated.

"Policy No.1-- By 1995, reduce the volume of nonhazardous solid waste disposed of in landfills to 55 percent of the 1985 volume.

"Policy No.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 No.9-- Identify, develop, and encourage environmentally sound wastewater treatment and disposal methods.

LAND USE

"Policy No.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 No.6-- Consider, in land use planning and regulation, the impact of land use on water quality and quantity, the availability 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 No.1-- Provide incentives for developing land in a way that maximizes the uses of existing public facilities.

CULTURAL AND HISTORICAL RESOURCES

"Policy No.3-- Ensure the identification, evaluation, and protection of archaeological folk heritage and historic resources properties of the state's diverse ethnic population.

"Policy No.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.

SUMMARY

"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 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 Pasco County Solid Waste Resource Recovery Project."

On February 26, 1988, the Department of Community Affairs submitted their final report on the Pasco Resource Recovery Facility.

"In accordance with Section 403.507, Florida Statutes, the Department of Community Affairs (DCA) submits the attached final report on the Pasco County Resource Recovery Project power plant site certification application. The final report presents the results of our evaluation of the compatibility of the proposed resource recovery project with the State Comprehensive Plan. To summarize the report, we find the proposed power plant to be compatible with the State Comprehensive Plan, provided that certain recommended conditions of certification are 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 this report. The DCA's conclusions are as follows:

"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 Pasco County Resource Recovery Facility would be consistent with the following policies and goals:

Water Resources: Policies Nos. 8 and 13 and the water reuse portion of policy No. 11.

Natural Systems and Recreational Lands: Policy Nos. 1, 3, and 9

Energy: Goal, Policies Nos. 5 and 9

Hazardous and Non-Hazardous Materials and Waste: Goal, Policies Nos. 1, 7, and 9

Public Facilities: Goal, Policy No. 1

Cultural and Historical Resources: Policy Nos. 3 and 6

"The DCA finds that the proposed project would be consistent with the following policies if its proposed conditions of certification were met:

Water Resources: Policies Nos. 1, 2, and 12, and the water quality portions of Policies Nos. 5, 9, and 10

Land Use: Goal, Policy No. 6

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

Air Quality: Policies Nos. 1, 2, 3, and 4

"The DCA considered the following issues important in determining overall compatibility with the SCP:

"1. The proposed PCRRF is to be located over portions of the Floridan aquifer, the major potable water source for Pasco County. The site is said to be a recharge area for the Floridan aquifer. The aquifer is poorly confined in this area, having only a thin (5 to 15 feet) layer of clay above its limestones, and is therefore vulnerable to contamination from water-borne pollutants--for example, the leachate from a solid waste landfill. Once in the aquifer, a contaminated plume could spread to adjacent portions of the aquifer. Normally, such movement through the aquifer is very slow; however, the Floridan aquifer in this area has, according to the SWFWMD, high transmissivity, and therefore a contaminated plume could spread somewhat faster through this part of the aquifer (though still slow by surface water standards). One region of the aquifer to which a

hypothetical plume could spread is that which feeds the Spring Hill pumping center. Spring Hill is located within 5 miles of the site and, potentiometrically, is down-gradient from it--that is, water within the aquifer moves from the area of the PCRRF toward the area of the Spring Hill pumping center. Then, too, western Pasco County is subject to sinkhole development, and in fact, the area south and east of the site is dotted with wet sinkholes, ponds, and lakes. These geologic conditions increase the potential for impacts of the proposed PCRRF on the quality of groundwater resources.

"On the other hand, the landfill of the PCRRF is designed to prevent leachate leakage and to detect it if it should occur. The resource recovery facility is a substitute for a sanitary landfill, which typically poses a greater threat to groundwater resources than does a resource recovery facility. The landfill of the PCRRF will receive ash from the burning process and unprocessable solid waste, neither of which is likely to have a dangerous leachate as the processible solid waste found in a sanitary landfill.

"(2) Of particular concern to the DCA is the potential impact on human health from the chlorinated hydrocarbons which can be formed as a result of the incineration of municipal solid waste. Policy No. 1 within the Air Quality element of the SCP states: "Improve air quality and maintain the improved level to safeguard human health and prevent damage to the natural environment. Policy No. 5 states: 'Ensure, at a minimum, that power plant fuel conversion does not result in higher levels of air pollution.' Neither the United States Environmental Protection Agency nor the DER have established standards for permissible levels of chlorinated hydrocarbon emissions. It is the opinion of the DCA that, until standards of permissible levels of chlorinated hydrocarbon emissions have been established for the State of Florida, mass burn facilities such as the PCRRF should be required to install pollution control technology to minimize emission of chlorinated hydrocarbons, in order to be consistent with the aforementioned SCP air quality policies. As

noted under the 'Air Quality' discussion, the PCRRF will have suitable air pollution control technology.

"(3) In its analysis, the DCA considered the alternatives to the construction of a resource recovery facility in Pasco County. One such alternative would be to increase the number of landfills in Pasco County. Pasco County is increasingly becoming more urbanized and acceptable landfill sites are becoming increasingly difficult to locate and expensive to operate. Sanitary landfills require greater amounts of land than do resource recovery facilities, can be unsightly and noisome, and may lower the value of neighboring properties. Through combustion, the resource recovery facility will reduce the volume of solid waste disposed of in its landfills by approximately 70 percent, thus reducing the need for siting and developing new landfills. Another alternative to the resource recovery project's secondary function as a generator of electricity would be to (slightly) accelerate construction of a new base load electrical generating station to serve central Florida. These large power plants are very expensive and often have significant environmental impacts. Certification and construction of the resource recovery facility will help postpone the date at which a new base-load power plant will be needed.

"(4) The development and use of resource and energy recovery facilities is a policy of 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 that the Pasco County Resource Recovery Facility would be compatible overall with the State Comprehensive Plan if the following recommended conditions of certification were met:

"Condition A -- The certification holder shall develop plans for the monitoring of groundwater in the area of the PCRRF site to the approval and satisfaction of the DER and the SWFWMD, and these plans shall be implemented so as to minimize potential negative impacts to groundwaters. The certification holder shall also develop a contingency plan for the mitigation of any leachate leakage that is detected. This condition of certification is intended to help make the proposed resource recovery project consistent with SCP Water Resources policies Nos. 1, 5, 9, 10 and 12.

"Condition B -- In order to minimize noise and aesthetic impacts from the facility, the certification holder shall maintain or install a buffer of trees along the boundaries of the site. The buffer shall be of a height and width suitable for these purposes. The condition of certification is intended to moderate the aesthetic and noise impacts of the facility."

C. Southwest Florida Water Management District

On February 25, 1988, the Southwest Florida Water Management District submitted their reports with a cover letter which stated:

"As you may know, the supplementary information requested by the Southwest Florida Water Management District for review of those matters within the District's jurisdiction on Pasco County's Solid Waste Recovery Facility application was received on January 27, 1988.

"Accordingly, enclosed are reports by the District on consumptive use of water and surface water management at the proposed facility required by Section 403.507(1)(c), Florida Statutes, and Rule 17-17.091(2)(e), Florida Administrative Code. Also enclosed is the District's report on the ashfill/landfill at the proposed facility as required by Section 403.707(4), Florida Statutes, and Rule 17-7.07(4), Florida Administrative Code. These reports were approved by the District Governing Board on February 23, 1988, as agreed in the Joint Stipulation and Motion to Expedite in the above referenced case and Kent Zaiser's letter to David S. Dee dated January 8, 1988."

The conclusions and recommendations of the District's reports are summarized as follows the entire reports are incorporated herein and attached in Appendix C.:

"As mandated by Section 403.707(4), Florida Statutes, when an application for a Class I or Class II solid waste disposal permit is made, the water management district within which the project is located shall prepare a report as to the impact on the water resources of the area. This report has been prepared to comply with 403.707(4), Florida Statutes.

"BACKGROUND

"The site selected for the Pasco County Resource Recovery Facility is located on Hays Road in northwestern Pasco County. The ashfill/landfill is an integral part of the resource recovery facility. The proposal is a solid waste disposal project consisting of facilities for disposing of processible

(combustible) wastes, non-processible (non-combustible) wastes, by-passed waste (when the resource recovery plant has an outage or waste received is in excess of capacity), and ash residue from the mass-burn facility.

"SITE CHARACTERISTICS

"The proposed site is not an optimal area for the location of a sanitary landfill for the following reasons:

- "1. The Floridan Aquifer at the site is very poorly confined, so any contaminants which escape from a landfill would be able to move relatively quickly through the surface sediments to the limestone below. In western Pasco County, the only appreciable upper confinement of the Florida Aquifer is provided by a thin (5 to 15 feet) drape of residual clay overlying the limestone. The clay is discontinuous, being broken by differential subsidence which occurs as the underlying limestone slowly dissolves, and perforated by sinkholes (which are continuing processes). The discontinuous nature of the clay confining unit accounts for the fact that a continuous water-table aquifer does not exist in west Pasco County.
- "2. The area is internally drained and has been recognized as a recharge area to the Floridan Aquifer, the major source of public and private water supply for the area.
- "3. The Floridan Aquifer beneath the area is of relatively high transmissivity, having conduit and fracture flow. These characteristics make recovery of contaminated water difficult once it has entered the aquifer.
- "4. The site is four to five miles, at the closest point, south of the Spring Hill pumping center which is projected to double withdrawals in the next six years to 10,000,000 gallons per day (gpd). The potentiometric gradient in the area indicates that water recharged at the site flows to the northwest through the southwestern corner of Hernando County and beneath the United States Highway 19 corridor before discharging to the Gulf of Mexico.
- "5. The site is seven to eight miles, at the closest point,

north of the Starkey Wellfield, which is presently permitted to draw 8,000,000 gpd, and has applied for a permit to withdraw 15,000,000 gpd. However, the potentiometric gradient at the site is away from the Starkey Wellfield.

"MITIGATING FACTORS

"Two factors serve to mitigate the concerns about the suitability of the site:

- "1. The proposed ashfill/landfill is a state-of-the-art, above ground landfill with a double system of underdrains and liners to collect leachate and prevent leachate migration. The waste is to be contained in sixteen segregated cells. The primary underdrain system is designed to collect leachate from the base of each waste cell for handling. The secondary underdrain system serves as backup to the primary system and is to be monitored to detect leakage from the primary liner of any waste cell. The landfill is designed to contain all leachate and not leak into the underlying aquifer.
- "2. The ashfill/landfill is intended to receive largely ash residue from the mass-burn facility and nonprocessible (noncombustible) wastes. These materials will contain greatly reduced quantities of volatile and organic materials compared to unprocessed solid waste. This will result in a leachate which is less likely to cause degradation and failure of liners and underdrains, and in turn, reduce the risk of contamination of the underlying aquifer.

"These two aspects of the proposed facility are greatly respected and appreciated by District staff. The development of resource recovery facilities is welcomed as a replacement for the traditional landfill disposal of unprocessed solid wastes.

"RECOMMENDATIONS

"District staff does not share the confidence of the designers that a "leak-proof" landfill can be constructed in west Pasco County, given the geologic characteristics of the area. It is not known what effect the loading of the land surface beneath the landfill will have on the stability of potential or plugged

sinkholes. It should be assumed that the development of sinkholes and differential subsidence will continue in the area of the landfill, and that these processes, along with potential imperfections of construction, may allow some leakage of leachate from the landfill. Therefore, staff recommendations focus on limiting the types of wastes disposed of in the proposed landfill to those types which pose the least threat to ground-water resources of the region in the event of leakage of the landfill.

"The disposal of ash residue from the mass burn facility is regarded as much less threatening to the water resources of the region than unprocessed solid waste. The following recommendations are made for the operation of the facility in such a way as to eliminate or limit the disposal of unprocessed solid waste at the site, and to require advance development of contingency plans for dealing effectively with landfill leakage.

"1. It is recommended that disposal of unprocessed waste at the ashfill/landfill site before the resource recovery facility is operational be minimized. Accordingly, it is recommended that disposal of the unprocessed waste at the ashfill/-landfill site be prohibited until the existing East Pasco County Sanitary Landfill site is filled to maximum capacity permittable by the Florida Department of Environmental Regulation, subject to the use limitations contained in the East Pasco County Sanitary Landfill site lease, or until the resource recovery facility is operational, whichever occurs first.

"2. It is recommended that the disposal of by-passed unprocessed waste at the ashfill/landfill site be minimized when the resource recovery facility is not fully operational or when capacity of the facility is exceeded, in accordance with the County's plans for operation contained in the application. It is further recommended that the County be encouraged to initiate future construction of additional capacity of the resource recovery facility as early as possible in order to avoid processible waste received exceeding capacity of the facility and to avoid disposal of unprocessed waste in the

ashfill/landfill.

- "3. The segregation of ash residue in cells separate from unprocessed waste (as proposed) should be encouraged to better insure that the ash remains in alkaline state. An alkaline state is desirable for the ash, as the heavy metal ions are much less mobile under alkaline conditions.
- "4. It is recommended that the secondary underdrain system be monitored weekly for the presence of leachate which would indicate leakage from a primary liner. It is also recommended that a contingency plan be developed for actions to be taken in the event that failure of a liner or underdrain is detected. The plan should include:
 - "a. Methods for determining which cell is leaking,
 - "b. Plans for immediate expansion of the monitor well network downgradient of the problematic cell for early detection of leachate in the aquifer if the secondary liner fails,
 - "c. Plans for repair of a leaking waste cell, and
 - "d. Plans for restoration of the aquifer if aquifer contamination occurs.
- "5. It is recommended that the County be encouraged to collect and segregate appliances and machines containing or utilizing coolants, greases, or oils for recycling by a metals processor as proposed by the County in order to minimize their disposal in the ashfill/landfill.

It is recommended that these conditions be incorporated by the Department of Environmental Regulation and the Electrical Power Plant Siting Board in the site certification for operation of the facility.

D. State of Florida Department of Commerce

The following comments were received from the State of Florida Department of Commerce of January 8, 1988

"The project is consistent with the goals and policies of the Department. This resource recovery facility will produce a useful product from trash, while decreasing the potential threat to ground water posed by the alternative sanitary landfill."

"This installation will have a benefit to the area's economic development potential. In addition to providing a low cost fuel for power generation, it will serve as a visible symbol that local government is willing to use state-of-the-art technology to solve its problems. This type of farsightedness creates a very positive impression on businessmen considering making a capital investment in Pasco County."

E. Florida Department of State, Division of Historical Resources

On December 30, 1987, the Division of Historical Resources replied by letter indicating that they had reviewed the Pasco County Resource Recovery Facility Power Plant Site Certification application to determine its effect on significant archaeological and historical sites and properties. The Division Director stated, "A review of the Florida Master Site File indicates that no significant archaeological and/or historical sites are recorded for or considered likely to be present within the project area. Therefore, it is the opinion of this office that the proposed project will have no effect on any sites listed, or eligible for listing, in the National Register of Historic Places or otherwise of national, state, or local significance. The project is also consistent with Florida's coastal zone program and its historic preservation laws and concerns, and may proceed without further involvement with this agency."

F. Florida Department of Natural Resources

On January 7, 1988, the Department of Natural Resources made

the following comments:

"Based on the information included in these documents the site does not appear to have any major problems from a hydro-geologic standpoint. The above-ground placement of the fill, along with the redundant liners and leachate collection system, are excellent features designed to safeguard the groundwater."

G. Florida Department of Agriculture and Consumer Services

On January 7, 1988, the Division of Forestry, Florida Department of Consumer Services stated the following:

"In response to your request on November 16, 1987, for our agency's review and comments on the proposed Pasco County Resource Recovery Project. After reviewing Pasco County's application for this project, it has been determined that it will have no immediate impact on areas under the Division of Forestry's management."

"Our agency views this recovery project as a step forward by reducing the volume of solid waste which must be landfilled. This should decrease the threat of contamination of the water resources from landfills in the Pasco County area."

H. Florida Game and Fresh Water Fish Commission

On February 12, 1988, the Florida Game and Fresh Water Fish Commission submitted the following report:

"The Office of Environmental Services of the Florida Game and Fresh Water Fish Commission has reviewed the applicants response to our letter dated January 13, 1988, requesting additional information, and can now provide final review comments.

"As you recall, the two issues of concern to the Commission were the presence of gopher tortoise colonies and the intended land use of areas not occupied by the facility. The applicant's consultant has responded with two letters to the Commission, dated January 25 and February 3, which are attached for your

information. Additionally, Commission staff, the consultant, and representatives of Pasco County have met to discuss these issues. A summary of these contacts appear below.

The consultant will conduct a detailed assessment of gopher tortoise populations within the project area, and develop an on-site relocation plan for those tortoises and their associated commensals impacted by the project. Also, a long-term management plan will be developed to ensure the maintenance and survival of these tortoises and their habitat. The relocation and management plan should be incorporated into the approval of this facility.

"Regarding the land use issue, the applicant has committed to providing 276.7 acres in buffer areas surrounding the facility. The county has also indicated its intention to offer approximately 168 acres of the southwestern corner of the site as a recipient site for relocated gopher tortoises. The applicant is also aware that additional acreage of buffer area may be necessary, dependent on the specifics of the relocation and management plan to be developed.

"Finally the consultant for the applicant has expressed the need for using approximately 80 acres of the northeastern portion of the site for borrow material. This area is remnant sandhill, a vegetative community which, because of development pressure, is a threatened habitat in peninsular Florida. If actively managed, this area could eventually provide good sandhill habitat and could be an additional recipient site for gopher tortoises. We recommend that alternate areas on site be considered for borrow material, and that this area be used only if the need is justified. Should fill materials be obtained elsewhere, this approximately 80-acre area should be incorporated into the relocation and management plan for the gopher tortoise, or incorporated into the buffer area.

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,

information. Additionally, Commission staff, the consultant, and representatives of Pasco County have met to discuss these issues. A summary of these contacts appear below.

The consultant will conduct a detailed assessment of gopher tortoise populations within the project area, and develop an on-site relocation plan for those tortoises and their associated commensals impacted by the project. Also, a long-term management plan will be developed to ensure the maintenance and survival of these tortoises and their habitat. The relocation and management plan should be incorporated into the approval of this facility.

"Regarding the land use issue, the applicant has committed to providing 276.7 acres in buffer areas surrounding the facility. The county has also indicated its intention to offer approximately 168 acres of the southwestern corner of the site as a recipient site for relocated gopher tortoises. The applicant is also aware that additional acreage of buffer area may be necessary, dependent on the specifics of the relocation and management plan to be developed.

"Finally the consultant for the applicant has expressed the need for using approximately 80 acres of the northeastern portion of the site for borrow material. This area is remnant sandhill, a vegetative community which, because of development pressure, is a threatened habitat in peninsular Florida. If actively managed, this area could eventually provide good sandhill habitat and could be an additional recipient site for gopher tortoises. We recommend that alternate areas on site be considered for borrow material, and that this area be used only if the need is justified. Should fill materials be obtained elsewhere, this approximately 80-acre area should be incorporated into the relocation and management plan for the gopher tortoise, or incorporated into the buffer area.

On March 22, 1988, the following letter was received:

"The Office of Environmental Services of the Florida Game and Fresh Water Fish Commission has reviewed the on-site gopher tortoise relocation plan offered by the consultant for the above

referenced project, and offers the following comments.

"Overall, the plan adequately addressed our concerns regarding population status and distribution of the tortoise, as identified in our February 12, 1988, correspondence. However, we believe a long term management plan should be developed to insure the survival of relocated tortoises and their commensals.

"On-site relocation for gopher tortoises and their commensal species will be through the establishment of approximately 170 acres of the project site as a gopher tortoise preserve. Additional commitment to habitat manipulation, access control, and other components of a management plan will also be necessary. The applicant has been advised to consult with the Commission Staff.

"We recommend that the following requirements be incorporated into the siting permit:"

'1. The 170-acre gopher tortoise preserve should be identified on the site master plan. The applicant should develop a management plan, as approved by the Commission staff that will ensure the maintenance and enhancement of the gopher tortoises and their commensals on this preserve area.

'2. The approximately 80 acres of remnant sandhill community, located in the northeast corner of the project site, should be utilized for borrow only when all other potential areas have been exhausted. Should adequate borrow material be obtained elsewhere, this remnant sandhill community should be incorporated into the management plan for gopher tortoises, or incorporated into the buffer area.'

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

Florida Power Corporation has an existing 500 kV powerline that crosses the proposed site. An existing substation is located in the southwest portion of the site. A connecting line will be constructed across the applicants property from FPC's substation to the facility's switchyard.

B. Fuel

The fuel for the electrical generating unit is processable solid waste collected from within Pasco County. The proposed project will have an initial and maximum (or ultimate) installed capacities of 1050 and 1200 tpd, 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 over 254 gigawatt hours of electricity by the burning of 436,800 tons per year of refuse at this new facility is anticipated to reduce the amount of imported fuel oil by over 469,000 barrels per year and more than 9,000,000 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

Traffic due to construction and operation will enter and exit the site by way of Hays Road and State Road 52. The construction impacts of this traffic will be of short duration of a few hours at a time. Existing roadways appear capable of handling the traffic provided a signal or traffic control official is put in to use at the intersection of Hays Road and SR 52 Road for construction shift changes.

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.

D. Cooling System Requirements

The heat dissipation system will employ a conventional circulating water, evaporative type cooling tower. Make-up water for the cooling tower will be reclaimed water from the Hudson Subregional wastewater treatment plant nearby and will be secondarily treated, filtered and chlorinated prior to being used as make-up water. Cooling tower blowdown will be returned to the sanitary waste treatment plant for treatment and disposal. Pumps and pipeline will be installed to transport the effluent from the County waste water treatment plant to the project site. The cooling system will require around 420 gpm of makeup water.

E. Environmental Considerations and Impacts

E.1. Soil and Foundation Conditions

The facility site is covered by sandy surficial soils with some shell and clay. The soils on site are nearly level to gently sloping and are well drained. The water table ranges in depths of 40 inches to more than six feet below the surface. The sandy soils under the site are 30 to 60 feet deep. The mixed sand and clay layers of the Hawthorne formation which forms a confining layer over the limestones of the Floridan Aquifer. On the southwest portions of the site there is evidence of sink hole activity. Extensive soil boring and ground penetrating radar testing revealed no active solution features on the portions of the site where the landfill and resource recovery facility will be located.

Since the upper layer of sandy soils are too inconsistent to safely support large buildings and heavy equipment, actual site preparation will involve the installation of deep piling, excavation of the garbage pit and some filling to raise the site elevation for vehicular access ramps. Low load carrying areas of the facility and areas that have a moderate sensitivity to

settlement may use shallow foundation systems although some compaction may be required. With proper engineering of the foundation design, proposed buildings and facilities can be safely constructed on site.

E.2. Availability of Water

Potable water for the site can be obtained from the Floridan aquifer by use of on site wells. Information from the applicant indicates that 30 gpm of potable water from the on site wells will be needed for the steam generation system, the potable and sanitary water system and the service water system. Up to 420 gpm of reclaimed water from the county's proposed Hudson Sub-regional Wastewater Treatment Plant will be needed for the cooling system. Another 50 gpm of reclaimed water will be used for the air pollution control system. The use of reclaimed water (treated sewage effluent) for cooling the steam generation system will conserve potable water.

E.3 Site Modifications

The applicant's proposed site modifications include construction of the combustion/steam generation units, each with a dry scrubber and a fabric filter (baghouse) air pollution control system, a 275 foot stack, water cooled condensers, a turbine generator, mechanical draft cooling towers, refuse unloading and storage facilities, administrative offices, truck weighing station, stormwater retention ponds, and a landfill/ashfill covering 195 acres upon completion.

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

The proposed site has been previously clear cut and used for silvaculture for pine trees over much of the area. The most recent clearcutting occurred in 1986. The variety of vegetation types on site are limited. A majority of the portion of the site to be utilized is planted in rows of Slash Pine or existing areas of Sand Pine. There are areas of some small oaks, Wax Myrtle and assorted grasses. A 295-foot wide transmission line right-of-way (ROW) bisects the site in a north/south direction. This ROW is

periodically cleared by Florida Power Corporation. This clearing process encourages grasses and weeds. No sensitive, rare or endangered vegetative species have been noted on site.

No threatened or endangered species of birds or animals were observed on site. A species of special concern, the Gopher tortoise was found on site. The Gopher Tortoise burrow may provide a home for the Gopher Frog also a species of Special Concern as well as a Threatened species, the Eastern Indigo Snake. Neither of these two species have been observed on site.

While the site and adjacent areas provide habitats for a variety of terrestrial and aquatic organisms, none of these habitats are considered critical. The site development will not significantly reduce the number of wetlands in the area. It is not anticipated that the proposed project will have any significant effects on area ecology.

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 | 105 gpm |
| 2. Boiler Blowdown | 15 gpm |
| 3. Cooling Tower Evaporation and Drift | 315 gpm |
| 4. Service Water System | 8 gpm |
| 5. Sanitary Wastes | 6 gpm |
| 6. Air Pollution Control System Evaporation | 50 gpm |

b. Surface Water

Potential operational 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.

Four stormwater runoff detention ponds will be used to collect, contain, and treat runoff originating on the site. Runoff will consist of stormwater originating from the plant site. Water stored by detention in these ponds will only be

released by controlled gravity discharge to the natural on site drainage paths which ultimately lead to the ponds and wetlands on the southwest portion of the site. Only ponds 3 and 4 will discharge in the event of 25-year, 24-hour storm. Normal rainfall events will be retained on site and lost by evaporation and percolation.

c. Groundwater

Due to the highly environmentally sensitive nature of the Floridan Aquifer (i.e., a semi-confined aquifer with high horizontal and vertical hydraulic conductivity, and it being the sole source aquifer for the potable water supply in Pasco County), a detailed analysis was performed. Water levels in the aquifer fluctuate in response to recharge and discharge and are influenced directly by rainfall. The average difference between maximum and minimum water levels is +5 feet. Available water level contour maps indicate that the water table gradient is in a general northwesterly direction and under a very low hydraulic gradient. Lining the ashfill/landfill and containing and treating in-plant waters should prevent the proposed facilities from contaminating the groundwater.

The onsite groundwater wells will slightly draw down groundwater during plant operation. During the period of maximum pumping, when the facility must get its cooling water from the on site wells, the facility could temporarily depress groundwater levels for a short period. During normal operation, no off site water supply wells would be affected.

E.6. Air Quality Impacts

a. Introduction

The proposed solid waste resource recovery facility (RRF) will emit various of pollutants into the ambient air, some of which are specifically regulated, while others are not. Of the specifically regulated pollutants, some are regulated to protect human health and welfare, by means of ambient air concentration limitations that are not to be exceeded. All of the specifically regulated pollutants are subject to emission restrictions which differ for different source types. In many cases a pollutant is regulated for one source type and not another. For the pollutants identified as potential emissions from this facility, the following regulations may apply: (1) Prevention of Significant Deterioration (PSD) including Best Available Control Technology (BACT), and protection of the State and National Ambient Air Quality Standards (NAAQS); (2) New Source Performance Standards (NSPS), and; (3) National Emission Standards for Hazardous Air Pollutants (NESHAP).

This section deals with the prevention of significant deterioration issues. Expected pollutants which are potentially subject to the PSD regulations are:

<u>Pollutant</u>	<u>Emissions (TPY)</u>
carbon monoxide (CO)	100
nitrogen dioxide (NO ₂)	40
sulfur dioxide (SO ₂)	40
ozone (O ₃)	40 (VOC)
particulate matter (PM)	25
total reduced sulfur (including H ₂ S)	10
reduced sulfur compounds (including H ₂ S)	10
sulfuric acid mist (H ₂ SO ₄)	7
fluorides (F-)	3

vinyl chloride	1
lead (Pb)	0.6
mercury (Hg)	0.1
asbestos (As)	0.007
beryllium (Be)	0.0004

The significant emission rate in tons per year (TPY) for the determination of PSD applicability is listed beside each pollutant. Volatile organic compounds (VOC) are the regulated pollutants for ozone.

1. Applicability

An air pollution source is subject to the PSD regulations if it will emit 100 tons or more per year of at least one of the PSD regulated pollutants. Because the new RRF will emit 100 tons of carbon monoxide (CO), PSD review is also required for all other pollutants listed above whose expected emission rate equals or exceeds the significant rate (on a facility wide basis). The Pasco County RRF is expected to emit nine of the PSD-pollutants in PSD-significant amounts. These include the criteria pollutants-- particulate matter, sulfur dioxide, nitrogen dioxide carbon monoxide, volatile organic compounds and lead; and non-criteria pollutants--fluorides, sulfuric acid mist and mercury. A determination of BACT and an air quality impact analysis is required for each of these pollutants.

Best Available Control Technology Determination

The applicant plans to eventually construct a 1200 ton per day (TPD) resource recovery facility (RRF) to be located at a site in Pasco County which is bounded on the west and south by Hays Road, on the east by Shady Hills Road, and on the north by Bluebird Lane. The thermal energy from combustion of the municipal solid waste (MSW) will be used to produce steam for electric power generation.

The present plans are to install three 350 TPD mass burn units that will process a total of 1050 TPD of MSW. This BACT review will be made for the ultimate capacity of 1200 TPD as requested by the applicant.

The mass burn units will have an approximate combined heat input of 480 million Btu per hour, based upon a MSW heating value of 4800 Btu per pound. Each unit is expected to operate 8760 hours per year. The applicant projects the maximum total annual tonnage of regulated air pollutants to be emitted from the units when operating continuously at nameplate capacity and continuous operation to be as follows:

Pollutant	Maximum Annual Emissions		PSD Significant Emissions Rate
		(Tons/Year)	(Tons/Year)
Particulate	(PM)	68	25
Sulfur Dioxide	(SO ₂)	471	40
Nitrogen Dioxide	(NO ₂)	1351	40
Carbon Monoxide	(CO)	103	100
Ozone	(O ₃)	44 (VOC)	40
Lead	(Pb)	3.4	0.6
Mercury	(Hg)	3.07	0.1
Beryllium	(Be)	0.000285	0.0004
Fluorides	(F)	17	3
Sulfuric Acid Mist		75	7
Arsenic	(AS)	0.0191	---

The Bureau of Air Quality Management (BAQM) performed the air quality review, including this BACT determination, according to Florida Administrative Code Chapter 17-17, Electrical Power Plant Siting and Rule 17-2.500, Prevention of Significant Deterioration (PSD).

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.

BACT Determination Requested by the Applicant:

On November 6, 1987, the applicant requested establishment of the following BACT limits:

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

PM - 0.309 lbs CO - 0.470 lbs Hg - 0.014 lbs

SO₂ - 2.15 lbs Pb - 0.0155 lbs F - 0.077 lbs

NOx - 6.17 lbs Be - 1.3 x E-6 lbs VOC - 0.20 lbs

As - 8.7 x E-5 lbs H₂SO₄ - 0.344 lbs

Date of receipt of a BACT application:

November 6, 1987

Date of publication with Florida Administrative Weekly:
March 4, 1988

BACT Determination Procedure:

DER rules on a BACT determination require the department to consider for each pollutant emitted, on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, and determine the maximum degree of reduction which is achievable through application of production processes and available methods, systems, and techniques. The applicable regulations also require the Department to consider:

- (a) Any Environmental Protection Agency determination of Best Available Control Technology pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 (Standards of Performance for New Stationary Sources) or 40 CFR Part 61 (National Emission Standards for Hazardous Air Pollutants).
- (b) All scientific, engineering, and technical material and other information available to the Department.
- (c) The emission limiting standards or BACT determinations of any other state.
- (d) The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine for the emission source in question the most stringent control available for a similar or identical source or source category. If it is shown that this level of control is technically or economically infeasible for the source in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

The air pollutant emissions from resource recovery facilities can be grouped into categories based upon what control equipment and techniques that are available to control emissions from these facilities. Using this approach, the emissions can be are classified as follows:

- ° Combustion Products (Particulates and Heavy Metals).
Controlled generally by particulate control devices.

- ° Products of Incomplete Combustion (CO, VOC, Toxic Organic Compounds). Control is largely achieved by proper combustion techniques.
- ° Acid Gases (SO_x, NO_x, HCl, F1). Controlled generally by gaseous control devices.

Grouping the pollutants in this manner facilitates the BACT analysis because it enables the equipment available to control the type or group of pollutants emitted and the corresponding energy, economic, and environmental impacts to be examined on a common basis. Although all of the pollutants addressed in the BACT analysis may be subject to a specific emission limiting standard as a result of PSD review, the control of "nonregulated" air pollutants is considered in imposing a more stringent BACT limit on a "regulated" pollutants (i.e., particulates, sulfur dioxide, fluorides, sulfuric acid mist, etc.), if a reduction in "nonregulated" air pollutants can be directly attributed to the control device selected as BACT for the abatement of the "regulated" pollutants. This policy was recently reaffirmed by the Administrator in a remand of a PSD permit for the North County Resource Recovery Facility in San Marcos, California. Two additional similiar remands for resource recovery PSD permits occurred in EPA Region V.

2. BACT Analysis:

a. Combustion Products

The facility's projected emissions of particulates, lead, and mercury surpass the significant emission rates given in Florida Administrative Code Rule 17-2.500, Table 500-2. Studies have shown that resource recovery facilities emit approximately 27 other metals not classified as regulated under the PSD Rule.

Uncontrolled emissions of metals from resource recovery facilities generally amount to approximately 0.01 pounds per ton of refuse incinerated. Although the expected level of emissions of metals is low in comparison to that of controlled pollutants, metals and metallic compounds emitted in fine particles (particles smaller than two microns in diameter) or as vapors, depending on the chemistry of the metal, can pose severe health risks. Minimizing the emission of metals from resource recovery facilities demands high efficiency particulate control.

Because each unit will have a charging rate of more than 50 tons per day, each is subject to the provisions of 40 CFR 60.50, Subpart E, New Source Performance Standards (NSPS). The applicable NSPS standard regulating particulate matter is 0.08 grains/dscf, corrected to 12% CO₂. This NSPS, promulgated in 1971, no longer reflects state-of-the-art for control of particulate emissions. Based on information now available, vendors currently guarantee both electrostatic precipitators and fabric filter technology to achieve grain loadings below 0.015 grains/dscf corrected to 12% CO₂. This level is slightly higher than the 0.01 grains/dscf corrected to 12% CO₂ for a fine particulate limit that other states such as California and Maine have proposed to represent BACT, but is in accordance with other recent BACT determinations for other resource recovery facilities of this size in the state of Florida.

In order to minimize acid emissions, two concurrent conditions must prevail to promote high removal efficiencies of metallic compounds emitted at refuse burning facilities: (1) operation of particulate matter control equipment at temperatures below approximately 260°C (500 °F), and (2) consistently efficient

removal of submicron-size fly ash particles. The maximum temperature of the RRF combustion gases at the inlet to the particulate control device is estimated to be 280°F, at this temperature the proposed particulate control equipment is capable of removing a significant amount of 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 absorption and preferential condensation on fine particles. Submicron particles receive the highest concentrations of metals because there is a much larger number of small particles than large particles. Collectively, the smaller particles thus have a greater total amount of surface area than the larger particles. Properly designed and operated 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 of fine fly ash by fabric filter systems can be in excess of 99% efficiency in MSW incinerators. Studies show that the percent of submicron particles emitted from combustion is on the order of 45% by weight, indicating the need for efficient control of particles of this size range.

The California Air Resource Board (CARB) report on resource recovery facilities indicates that the highest uncontrolled lead emission rate from refuse-fired facilities tested is 16,000 ug/MJ. Based on a heating value of 4,800 Btu per pound of refuse, this equates to an emission rate of 8.36 lbs per ton of refuse charged. Recent testing of baghouses and high efficiency four-field electrostatic precipitators (ESPs) indicates that lead removal efficiencies of greater than 99% are being achieved with both types of control devices. Taking into consideration these efficiencies and the maximum emission rate, 0.0065 lbs per ton of refuse charged has been judged to constitute BACT for lead emissions from the most recently permitted resource recovery

facilities in Florida. Thus, this limit is also deemed as BACT for the Pasco facility.

The emission limit determined to be BACT for mercury is 0.0072 pounds per ton of refuse charged. This limitation is consistent with the majority of the RRFs recently permitted in the State of Florida.

The emissions limits which constitute BACT for these pollutants can reasonably be expected to be met by a particulate control device that would achieve a grain loading not to exceed 0.015 grains/dscf corrected to 12% CO₂, as measured by EPA Method 5.

Performance testing demonstrates that the use of a dry scrubbing system in conjunction with a fabric filter will enhance the collection efficiency of the particulate control device. A report based on testing completed in Europe (Dry Scrubbing of Municipal Solid Waste Incinerator Flue Gas By Spray Dryer Absorption, 77th Annual Meeting of APCA, San Francisco, California, June 24-29, 1984) showed that a dry scrubber used in conjunction with a baghouse provided the highest level of control of particulates and heavy metals; in both the particulate phase and the vapor phase the control ranged from 75% to more than 97%. The control of mercury is substantially improved by using a dry scrubber since 80-100% of mercury exits the boiler in the vapor phase. Enhanced control of heavy metals results from a reduction in the flue gas temperature caused by the dry scrubber's allowing the metals to cool and condense onto the particulate matter. A dry scrubber used in conjunction with a baghouse designed to achieve 0.015 grains per dry standard cubic foot corrected to 12 percent CO₂ is thus deemed to also represent BACT for the emissions of heavy metals which are not PSD regulated pollutants such as cadmium, chromium, copper, manganese, and nickel.

Energy Economic and Environmental Impacts Analysis

In accordance with previous BACT/LAER determinations for resource recovery facilities and the concept of "top down" BACT, the dry scrubber--baghouse combination represents the most stringent control available for particulate and heavy metals. Since this level of control has been proposed by the applicant, no further discussion regarding energy, economic, or environmental impacts of other control strategies is necessary. It should be noted however that the energy and economic impacts of using an equally efficient alternative control strategy (dry scrubber - ESP) were demonstrated to be greater than the proposed control.

b. Acid Gases

Emissions of sulfur dioxide, nitrogen dioxide, fluorides, and sulfuric acid mist, as well as other acid gases which are not "regulated" under the PSD Rule, represent significant potential pollutants which must be subjected to appropriate control. Sulfur dioxide emissions from resource recovery facilities are directly related to the sulfur content of the refuse incinerated. MSW components that appear to be major contributors of sulfur include rubber, plastics, food wastes, yard wastes and paper.

Various studies have indicated average SO₂ emission levels of 2.0 to 2.8 lb/ton MSW charged with deviations of \pm 1.3 to 1.6 lb/ton. A recent test conducted on Pinellas County units 1 and 2 on May 21 and 22, 1986, revealed that the average SO₂ emissions were 0.38 and 0.14 lb/MM Btu respectively. This corresponds to an emission factor of 3.65 and 1.34 pound per ton using a heating

value of 4,800 Btu per pound of refuse incinerated. The amount of SO₂ emitted is 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 in some cases. The installation of a flue gas desulfurization system to control SO₂ emissions alone is not clearly warranted when burning MSW. However, because other acid gases and their chemical reaction products are emitted from resource recovery facilities, their impacts need to be evaluated when addressing the control of acid gases. One such reaction product is sulfuric acid mist. Some of the sulfur dioxide emitted from the combustion of the sulfur containing refuse is oxidized to SO₃ which then combines with water vapor to produce sulfuric acid mist. Emissions of fluoride also originate from a number of sources in the refuse. The control of fluorides can be reduced at refuse-burning plants by removal of selected refuse components with high fluoride content, and the use of flue gas control equipment.

The expected level of acid gases discussed above is related in substantial part to the amount of plastics in the waste stream. The type of air pollutants emitted when incinerating plastics depends on the atomic composition of the plastics. Plastics composed of only carbon and hydrogen or carbon, hydrogen and oxygen form carbon dioxide and water when completely combusted. Incomplete combustion of any carbon based material including such plastics yields carbon monoxide as the major pollutant.

In contrast, plastics containing nitrogen as a heteroatom yield molecular nitrogen, some NO_x, carbon dioxide, and water when completely combusted. Incomplete combustion yields hydrogen cyanide, cyanogen, nitrites, ammonia and hydrocarbon gases. Complete combustion of plastics containing halogens or sulfur

heteroatoms form acid gases such as hydrogen chloride, hydrogen fluoride, sulfur dioxide, carbon dioxide, and water. Halogen or sulfur compounds result from the incomplete combustion of the plastic. Polyvinyl chloride (PVC), one of many plastics, has been implicated as causing the most serious disposal problem due to the release of relatively large amounts of hydrogen chloride (HCl) gas when incinerated. This long - recognized problem has resulted in other types of plastics 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 compared to a weight percent of 45.3 in PVC.

A recent study of MSW incineration performed for the USEPA predicted that the plastics content of refuse is expected to grow by from 300-400% between the year 1968 and 2000. This growth in plastics content can be expected to cause an increase in uncontrolled HCl emissions from municipal waste incineration of roughly 400% by the year 2000.

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 high chlorine content plastic items from the waste stream, especially those of PVC. With the exception of limited recycling efforts, however, effective source separation of plastics has not been demonstrated and the costs of source separation are uncertain at this time. Moreover, the combustion of plastics offers a relatively high heating value, and thus appears to contribute favorably to energy generation.

Plastic materials having a high heat of combustion include: coated milk cartons - 11,300 Btu/lb; latex - 10,000 Btu/lb; and polyethylene 20,000 Btu/lb). By comparison, newspaper and wood have a heat content of 8,000 Btu/lb; while kerosene offers 18,900 Btu/lb.

At this time flue gas controls are the most effective conventional means of reducing HCl emissions as well as the other acid gases at refuse burning facilities. The control equipment available to reduce the emissions of sulfur dioxide, sulfuric acid mist, fluorides, and hydrogen chloride consist primarily of the wet or dry scrubber. The wet scrubbing process is capable of removing greater than 80% of the sulfur dioxide emissions and over 90% of the other acid gases while these removal efficiencies are comparable to that achieved by dry scrubbing technology, the wet scrubber has the disadvantage of generating contaminated wastewater and/or sludges that can create a wastewater or sludge disposal problem. Because of the great concern for the state's groundwater supplies, control devices producing wastewater which needs treatment before disposal are not considered good options for these facilities. In addition, equipment corrosion and scaling problems have been encountered when using wet scrubbing technology.

The dry flue gas scrubbing system does not have the problems associated with the wet scrubber. Dry scrubbers have been successfully employed in Europe, Japan, and, to a limited extent, in the United States. Although many units have been permitted to employ dry scrubbing technology in the United States, only one facility (Framingham Massachusetts) has been operating in the U.S. for an extended period of time with this technology. Other operating facilities operating which incorporate this technology in the United States are in Marion County, Oregon and Commerce, California. Experience with dry scrubbers has indicated that control efficiencies for SO₂ and HCl are in the ranges of 70-90

percent and 80-98 percent, respectively. In addition, the use of a fabric filter in conjunction with a dry scrubber has been shown to increase SO₂ removal efficiencies by as much as 16 percent. This is primarily due to the reagent in the bag's filter cake serving as another locus for SO₂ absorption.

In accordance with the discussion on the availability of applicable control technology and previous BACT determination completed in other states as well as Florida, a dry scrubber capable of removing 70% of the sulfur dioxide emissions and 90% of the hydrogen chloride emissions is deemed to represent BACT for this facility.

Another pollutant which has been categorized as an acid gas is nitrogen oxide. During combustion of municipal solid waste, nitrogen oxides are 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 used to reduce NO_x emissions include: firing fuel so as to provide a correct distribution of combustion air between overfire and underfire air; exhaust gas recirculation, and decreased heat release rates.

Flue gas controls appear to offer the greatest potential for NO_x reductions. Their application on full-scale RRFs has been limited however. Controls which have been applied to combustion processes are selective catalytic reduction (SCR) and selective non-catalytic reduction (SNCR). The SNCR system involves the commingling of ammonia and flue gas NO_x in the boiler by means of ammonia injectors located in the boiler's wall. Like SNCR, the SCR technology also injects ammonia into the flue gas; however, its reaction with NO_x is at a lower temperature and is enhanced by means of a catalyst bed.

The SNCR system has been employed primarily in Japan at several installations with small-to medium sized incinerators. U.S. installations are only in California. One SNCR unit is operating (Commerce RRF) and another is planned (Stanislaus RRF). California's 300 tpd Commerce RRF has been operating since February of 1987 with a SNCR system that achieves an average NOx reduction of 40 percent. The system, permitted as "Innovative Technology," has had minimal operating problems. The Stanislaus facility, in its 2nd year of construction, has been permitted with a SNCR system expected to achieve NOx reductions of 43.5 percent. The energy, economic, and environmental impacts of applying SNCR must be evaluated in accordance with the "top down" BACT approach.

Energy, Economic and Environmental Impacts Analysis

As is the case with the proposed particulate/heavy metals control equipment, the dry scrubber-baghouse combination represents the most stringent control available for removal of the acid gases other than nitrogen oxides that is commonly used on resource recovery facilities in this country, likewise no further discussion regarding energy, economic, or environmental impacts is necessary. Although studies indicate that the highest acid gas removal efficiencies can be achieved by using wet scrubbers, the applicant has stated that wet scrubbers are now considered an obsolete technology for resource recovery facilities due to several significant disadvantages. The applicant's proposed control for nitrogen oxides (standard combustion controls), however, does not represent the greatest level of control. To satisfy the concept of "top down" BACT the applicant has provided a cost-benefit analysis of applying SNCR to its proposed facility.

In order to justify the cost effectiveness of any air pollution control, the EPA has developed costing guidelines to obtain the highest reduction of emissions per dollar invested. Achievement of maximum emission reductions for capital invested is a major consideration when New Source Performance Standards (NSPS) are developed by the EPA. For NOx emissions, EPA has determined that a cost of up to \$1,000 per ton of emissions controlled (\$0.50/lb) is reasonable for NSPS.

The Thermal DeNOx System, a type of SNCR, is estimated to have a capital cost of \$2,655,000 and an annual operating cost of \$833,000 (including \$254,000 per year for lost energy revenue due to equipment downtime). Assuming a capacity factor of 85 percent at design rate operation, the amount of NOx reduction for the 40% efficient Thermal DeNOx System would be approximately 540 tons per year. Taking this reduction in consideration with the total annualized cost (annual operating cost plus capital cost amortized over 20 years at 8 percent interest) of \$1,104,000., the cost per ton of NOx controlled is approximately \$2,478.00. The installation of SNCR does not appear to be cost effective or reasonable.

The cost effectiveness of SNCR does not appear to be justifiable. It should also be noted that the NOx impacts as proposed (without SNCR) are minimal. The applicant has predicted the highest annual nitrogen dioxide (NO₂) impact to be 1.03 ug/m³. This impact level, in conjunction with the estimated background concentration of NO₂ (39 ug/m³), is well below the National Ambient Air Quality Standard of 100 ug/m³.

c. Products of Incomplete Combustion

Emissions of carbon monoxide, volatile organic compounds and other organics from resource recovery facilities are largely dependent upon the completeness of combustion. Carbon monoxide is a product of incomplete combustion resulting from insufficient air. Incomplete combustion will also cause the emission of solid carbon particulates in the form of smoke, or soot, and unburned and/or partially oxidized hydrocarbons. Incomplete combustion also results in the loss of heat energy to the boiler. For example, CO (calorific value: 4347 Btu/lb) discharged to the atmosphere represents a loss of heat energy. Since heat energy is used to produce the steam which drives the generator to produce electric power, there is a clear economic incentive to minimize CO emissions resulting from incomplete combustion. Hydrocarbon emissions, like carbon monoxide emissions, result from incomplete oxidation of carbon compounds. Control of CO and HC emissions can be mutually reinforcing processes.

Toxic Organic Compounds

No analysis of a proposal to construct a MSW incinerator in 1988 would be complete unless the subject of toxic organics such as dioxins and polycyclic organic matter was discussed. Dioxin is a hazardous material that recently has received widespread public attention. 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 emissions testing of RRF's and health studies have shown that Dioxin is readily minimized in properly designed and operated BACT-equipped facilities, and very small amounts have caused demonstrable health effects in some animal exposure tests. Although most of the reduction in dioxin is believed to take

place in the combustion chamber, the installation of add-on controls has been demonstrated to provide additional removal of dioxins.

Polycyclic organic matter (POM) is often defined as "PIC," or products of incomplete combustion. The emissions of POMs are minimized by ensuring that efficient combustion takes place. Four factors control combustion efficiency: 1) reaction temperature within the combustion zone and post-combustion zone, 2) residence time of reactants and intermediate products in the combustion and post-combustion zones, 3) turbulence or mixing efficiency, and 4) air to fuel ratio.

Refuse-burning furnaces can substantially reduce the formation of dioxins and other chlorinated and non-chlorinated organic compounds through efficient combustion assured by proper operating practices. Modern incinerators have successfully controlled emissions of organic compounds by achieving proper combustion. In a recent report to the U.S. Congress, the Environmental Protection Agency emphasized that good combustion is critical to curtailing emissions of dioxin and other organic compounds from refuse burning facilities.

It is generally accepted that CO emission levels serve as good measures of whether efficient combustion is occurring. The combustion processes of automobiles, fossil fuel boilers, and hazardous waste incinerators are now controlled on the basis of CO emission measurements. As yet undetermined is whether good combustion itself minimizes dioxin emissions or whether a causal relationship exists between CO emission levels and dioxin formation.

The EPA has developed a program of combustion strategies termed "good combustion practices" for mass burn facilities. (See Table 1). The applicant has agreed to implement EPA's good combustion practices to govern the operation of the incinerator.

Table 1

Practice	Mass Burn Preliminary Target
Design temperature at fully mixed height	1800°F at fully mixed height
Underfire air control	At least four separately adjustable plenums. One each under the drying and burnout zones and at least two separately adjustable plenums under the burning zone.
Overfire air capacity (not an operating requirement)	40% of total air
Overfire air injector design	That required for penetration and coverage of furnace cross section
Auxiliary fuel capacity	That required to meet start-up temperature and 1800°F criteria under part-load operations
Excess Air	6-12% excess oxygen (dry basis)
Turndown restrictions	80 - 110% of design - lower limit may be extended with verification tests
Start-up procedures	On auxiliary fuel to design temperature
Use of auxiliary fuel	On prolonged high CO or low furnace temperature
Oxygen in flue gas (continuous monitor)	6 - 12% dry
CO in flue gas (continuous monitor)	50 ppm on 4 hour average corrected to 12% CO ₂
Furnace temperature (continuous monitor)	Minimum of 1800°F (mean) at fully mixed height across furnace
Adequate air distribution	Verification test

The Department concludes that the proposed dry scrubber - baghouse combination, good combustion practices, and practice of limiting CO emissions to 100 ppm correct to 7% O₂ based upon an 8 hour average constitutes BACT for the control of toxic organic compounds such as dioxins and polycyclic organic matter.

c. BACT DETERMINATION BY DER

Discussion

Based on the information presented in the preceeding analysis, the Department determines that the dry scrubber-baghouse combination represents BACT for this facility. The emissions limits for each pollutant are established as follows:

<u>Air Pollutant</u>	<u>Emission Limit Per Unit</u>
Particulate Matter	0.015 grains/dscf, corrected to 12% CO ₂ , as measured by EPA Method 5
Sulfur Dioxide	60 ppmdv corrected to 12% CO ₂ , 6-hour rolling average; or 70% reduction of uncontrolled SO ₂ emissions, 6-hour rolling average. Not to exceed 100 ppmdv corrected to 7% O ₂ .
Nitrogen Oxides	6.17 lb/ton refuse charged
Carbon Monoxide	100 ppmdv corrected to 12% CO ₂ , 8-hr rolling average.
Fluorides	0.077 lb/ton
Sulfuric Acid Mist*	
Lead	0.0065 lb/ton
Mercury	0.0072 lb/ton
Beryllium	1.3 x E-6 lb/ton refuse charged
Arsenic	8.7 x E-5 lb/ton
VOC	0.20 lb/ton refuse charged
Visible Emission	15% opacity, six minute average

*Due to the lack of an accurate test method for measuring sulfuric acid mist emissions from RRFs, no emission limitation is proposed as BACT. Control of this pollutant will be achieved by the proposed dry scrubber-baghouse

(1) Compliance with the mercury emissions limit shall be demonstrated in accordance with 40 CFR 61, Method 101 Appendix B. Compliance with limitations for sulfur oxides, particulate matter, and nitrogen oxides will be demonstrated in accordance with Florida Administrative Code Rule 17-2.700, DER Methods 1, 2, 3, 4, and 6, and 40 CFR 60 Appendix A; Method 5, 7, 10, 12, 13A or 13B. 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 that meets all requirements found in the Federal Register, to measure combustion temperature and flue gas temperature at the exit of the acid gas control equipment plus SO₂, CO, O₂, CO₂ levels and 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. In addition, the combustion efficiency calculated by: $\% CE = (1 / (1 + (CO / CO_2))) \times 100$ shall be at least 99.5%, for an 8-hour average.

V. Ambient Air Quality Analysis

Prevention of Significant Deterioration (PSD)

A. Introduction

The Pasco County Board of County Commissioners (the applicant is proposing to construct a resource recovery (solid waste disposal) facility on a 751 acre site off Hayes Road within the county. The facility will use mass-burn technology and will initially produce 22 megawatts (MW) of electricity by burning 900 tons per day (tpd) of municipal solid waste. An ultimate processing capacity of 1200 tpd is being requested by the applicant in anticipation of future need. This ultimate capacity will produce 29 MW of electricity. The facility, as reviewed, will consist of four individual incinerator/boilers each with a

350 tpd processing capacity. The operation of these units will result in the significant emissions of regulated air pollutants and thus must be reviewed by the Department.

The Pasco facility will be located in a Class II PSD area. The facility will also be located within 100 kilometers of the Chassahowitzka National Wilderness Class I area and within 50 kilometers of the Tampa particulate nonattainment area and the Pinellas County SO₂ nonattainment area. The pollutant emissions estimated by the applicant, considering control equipment, indicate that the following nine compounds emit in PSD-significant amounts: particulate matter (PM, including PM₁₀), carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO₂), volatile organic compounds (VOC), lead (Pb), mercury (Hg), fluorides (F⁻), and sulfuric acid mist (H₂SO₄). 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, visibility, and growth-related air quality impacts; and
- A "Good Engineering Practice" (GEP) stack height determination.

Other pollutants (aside from those specifically regulated by the PSD regulations) will also be emitted into the ambient air by the proposed facility. Some of these have become issues of public concern, such as hydrogen chloride (HCl), dioxins (2,3,7,8-TCDD), and various heavy metals. Although these pollutants have no ambient air standards, they are considered in the Best Available Control Technology (BACT) analysis. The applicant has estimated the ambient impacts, however, of some of these pollutants and compares these concentrations to regulatory guidelines used in several other states.

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 facility, as described in this report and subject to the conditions of approval proposed herein, will not cause or contribute to violation of any PSD increment or ambient air quality standard. In addition, the Department has evaluated, to the extent possible, the ambient impacts of several non-PSD regulated pollutants. Control and/or emission limitations have been set for some of these pollutants for the purpose of reducing any potential harmful effects.

B. Modeling Methodology

The EPA-approved industrial Source Complex Short-Term (ISCST) atmospheric dispersion model (version 6) was used to predict the impact of the new Pasco facility on the surrounding ambient air. This model determines ground-level concentrations of inert gases or small particulates emitted into the atmosphere by point, area, or volume-type sources. It incorporates elements for plume rise, transport by the mean wind, and Gaussian dispersion. In addition, the model allows for the separation of sources, building wake downwash, adjustment for calm conditions, and various other input and output features.

The applicant conducted screening modeling, for the purpose of defining the worst-case operating conditions, and refined modeling to ensure that the highest concentrations were identified. For both sets of modeling runs the applicant received prior approval from the Department on the methodology by submitting a modeling protocol.

The screening modeling identified the worst-case operating conditions to be a 1200 tpd facility burning waste with a heat content of 5000 btu per pound (btu/lb). The nominal operating conditions of the facility are expected to be 1200 tpd at 4800 btu/lb. This worst-case condition was used in the refined modeling.

For the refined modeling, five years of sequential hourly meteorological data were used. The surface and upper-air data were National Weather Service (NWS) data collected in Tampa during the period 1970-1974. Since five years of data were used, the highest, second-high short-term predicted concentrations are compared with appropriate ambient standards or PSD increments. For the annual averages the highest predicted yearly average was compared to the standards. The stack and emission characteristics used in the refined modeling for the Pasco facility are summarized in Table I and Table II, respectively. Since the proposed stack height is equal to the calculated GEP height, building wake downwash was not included in the modeling.

The initial refined modeling selected 360 receptors surrounding the facility from 0.3 kilometers to 15 kilometers. Additional receptors were located at the Chassahowitzka National Wilderness (Class I) Area, the Cedar Keys National Wilderness Area, and the Pinellas County SO₂ nonattainment area. The average terrain elevations at these receptors were used. Considering only the Pasco facility sources, the critical days and receptors were identified from these runs. Fine resolution receptor grids (100 meter spacing) for these critical days and receptors further refined the maximum concentrations.

The results of these model runs, as shown on Table III, shows that for particulate matter, sulfur dioxide, and carbon monoxide the maximum predicted concentrations are less than the defined significance levels for these pollutants. As such, no further analysis for impact in the Class II area is required.

Table I

Pasco County Resource Recovery Facility
Source Characteristics

Source	UTM E (km)	UTM N (km)	Stack Height(m)	Exit Temp.(K)	Exit Velocity(m/s)	Stack Diameter (m)
Incinerator/ Boilers (4)	347.12	3139.23	83.8	394.3	15.69	3.05(1)

(1) Effective diameter for four flues in the common stack; each individual flue has a diameter of 1.52 m.

Table II

Pasco County Resource Recovery Facility
Emission Rates

Pollutant	Emission Factor (lb/MMBtu)	Annual Emission Rate (TPY) (1)	Short-term Emission Rate (lb/hr) (2)
Particulate Matter (TSP or PM10)	0.0322	68	16.1
Sulfur dioxide (SO ₂)	0.224	471	113
Nitrogen Oxides (as NO ₂)	0.643	1,351	322
Carbon Monoxide (CO)			
Annual	0.0490	103	24.5
8-hour	0.0979		49.0
1-hour	0.391		195.5
Non-Methane Hydrocarbons	0.0208	44	10.4
Lead (Pb)	0.00161	3.4	0.805
Sulfuric Acid Mist (H ₂ SO ₄)	0.0358	75	17.9
Fluoride (as HF)	0.00802	17	4.01
Mercury (Hg)	0.00146	3.07	0.729
Beryllium (Be)	1.35x10 ⁻⁷	0.000285	0.0000677
Inorganic Arsenic (As)	9.07x10 ⁻⁶	0.0191	0.00454
Hydrogen Chloride (HCl)	0.127	267	63.5
Dioxin (as 2,3,7,8-TCDD)	3.54x10 ⁻⁹	7.45x10 ⁻⁶	1.77x10 ⁻⁶

- (1) Annual rate based on 1200 TPD operation assuming 4800 Btu per pound of waste.
 (2) Short-term rate based on 1200 TPD operation assuming 5000 Btu per pound of waste.

Table III

Pasco County Resource Recovery Facility
Maximum Predicted Concentrations (Pasco County RRF only)

Pollutant	Averaging Period	Maximum Conc. (ug/m ³)	Significant Impact Level (ug/m ³)	Deminimus Monitoring Level (ug/m ³)
Sulfur Dioxide	Annual	0.36	1	NA
	24-hour	2.98	5	13
	3-hour	11.49	25	NA
Particulates (TSP or PM ₁₀)	Annual	0.05	1	NA
	24-hour	0.43	5	10
Nitrogen Dioxide	Annual	1.03	1	14
Carbon Monoxide	8-hour	3.42	500	575
	1-hour	35.2	2,000	NA
Lead	quarterly	0.02	NA	0.1
Mercury	24-hour	2.25 x10 ⁻²	NA	2.5x10 ⁻¹
Beryllium	24-hour	2.09 x10 ⁻⁶	NA	5.0x10 ⁻⁴
Fluorides (as HF)	24-hour	0.0124	NA	0.25

For nitrogen dioxide, the maximum predicted concentration is marginally above the defined significance level. The Department is not requiring any further modeling for this pollutant because of its small predicted impact and the fact that no large sources are near the Pasco facility. None of the other pollutants have defined significant impact levels.

A more detailed description of the modeling analysis, along with the model output, is contained in the Pasco application. The Department has reviewed the applicant's analysis and found that it conforms with the guidelines established by the EPA and followed by the Department.

C. Analysis of Existing Air Quality

Preconstruction ambient air quality monitoring may be 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 III. The monitoring de minimus level for each pollutant is also listed. All pollutants have maximum predicted impacts below their respective de minimus values. Therefore, specific preconstruction monitoring is not required for any pollutant.

The applicant has, however, used the available monitoring data located in Pasco and the surrounding counties to develop existing background concentrations for the proposed facility area. These background values have been used to develop the maximum total concentrations for comparison with the ambient air quality standards.

D. PSD Increment Analysis

The PSD increments represents the amount that sources may increase the ambient ground-level concentrations of SO₂ and PM. The purpose of these increment limitations is to prevent areas which currently have good air quality from being significantly degraded. If an area currently has ambient concentrations near the ambient air quality standards for SO₂ or PM, then the increased emissions from new sources must not cause or contribute to a violation of the standards and the allowed increments would be reduced to prevent such exceedances.

The proposed Pasco facility is to be located in a Class II area and must meet the increments defined for this class. The facility will also be approximately 27 kilometers from the Chassahowitzka National Wilderness Class I Area. The applicant must also show that the new facility will not cause or contribute to an exceedance of the more restrictive Class I increments in that area.

All of the emissions of SO₂ and PM at the proposed Pasco facility will consume increment. The increased ground-level concentrations due to the Pasco facility alone has been shown, from the dispersion modeling, to be less than the defined significant impact levels for all averaging times. That is the maximum concentrations were below 5 ug/m³, 24-hour average and 1 ug/m³, annual average for PM, and below 25 ug/m³, 3-hour average, 5 ug/m³, 24-hour average, and 1 ug/m³, annual average for SO₂. As such, no other increment consuming sources were evaluated for

Table IV

Pasco County Resource Recovery Facility
Maximum Predicted Increment Consumption on
The Chassahowitzka National Wilderness Class I Area

Pollutant	Averaging Period	Maximum Conc.		Maximum, All Increment Consuming Sources (ug/m ³)		Allowed Class I Increment (ug/m ³)
		Pasco RRF only Concent. (ug/m ³)				
Particulate Matter	Annual	0.0039		2.79		5
	24-hour	0.061		7.56		10
Sulfur Dioxide	Annual	0.027		1.43		2
	24-hour	0.42		4.91		5
	3-hour	1.98		21.12		25

The concentrations listed for the Pasco facility only represent the maximums which occurred over the five year modeling period and are not the paired (in space and time) concentrations associated with the total of all sources.

Class II area increments.

There are no defined significant impact levels for Class I areas; any impact within 100 kilometers is considered potentially significant. As such, a full PSD increment analysis was performed for this area. All increment consuming sources which could potentially interact with the Pasco facility to impact on the Class I area were modeled. The Pasco facility itself has maximum impacts on the Class I area of less than 10 percent of the defined increments. Table IV summarizes the predicted increment consumption on the Class I area. The percent consumed is quite high, due mostly to other sources, but is still within the allowed increments.

E. Ambient Air Quality Standards (AAQS) Analysis

Of the pollutants subject to review, only the criteria pollutants PM, SO₂, CO, NO₂, Pb, and ozone (O₃) have AAQS with which to compare. In general, the total ambient air quality impacts are determined by adding the predicted modeled concentrations to an estimated background concentration for each pollutant. In the case of the Pasco facility, the predicted maximum concentration increases are less than the significant impact levels defined in the State regulations for PM, SO₂, CO, and NO₂. As such, no further modeling of other sources is required. Significant impact levels for Pb and O₃ are not defined. Ozone is a photochemically formed pollutant resulting mainly from motor vehicle emissions. The regulated pollutant for ozone formation is volatile organic compounds (VOC) which cannot be modeled for source-specific applications. Ozone, by way of VOC's, is regulated through BACT. Lead is also primarily a motor vehicle related pollutant and no other point sources were considered.

A new national ambient air quality standard has recently been promulgated for particulates less than 10 micrometers in diameter. This new standard, which has not yet become a State standard, is set at 150 ug/m³. This is the same value as the current state total particulate standard. Since the mass of particles less than 10 micrometers is a subset of the total particulate mass, compliance with the current state total particulate standard ensures compliance with the national small particulate standard.

Table V summarizes the estimates of the predicted maximum air quality for these pollutants in the vicinity of the Pasco facility. These estimates are considered conservative (i.e., overestimates) because the background values used for each of these pollutants are generally derived from the more urban (polluted) Tampa Bay area.

Given existing air quality in the area of the proposed facility, emissions from this facility are not expected to cause or contribute to a violation of an AAQS.

F. Additional Impacts Analysis

1. Impacts on Soils and Vegetation

The ground-level concentrations of the criteria pollutants are predicted to be well 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 effect on soils and vegetation.

2. Impact on Visibility in the Class I Area

An EPA Level-1 visibility screening analysis was performed by the applicant for impact on the Chassahowitzka National Wilderness Area. The results indicate that no impact on

Table V

Pasco County Resource Recovery Facility
Ambient Air Quality Standards Analysis

Pollutant	Averaging Period	Pasco RRF Impact (ug/m ³)	Estimated Ambient Background (ug/m ³)	Total Impact (ug/m ³)	Florida AAQS (ug/m ³)
Sulfur Dioxide	Annual	0.4	26	26	60
	24-hour	3	103	106	260
	3-hour	12	456	468	1300
Particulates (1)	Annual	0.1	43	43	60
	24-hour	0.4	87	87	150
Nitrogen Dioxide	Annual	1	39	40	100
Carbon Monoxide	8-hour	3	1145	1148	10,000
	1-hour	35	5153	5188	40,000
Lead	3-month	0.02 (2)	0.4	0.4	1.5

(1) Particulates includes as a subset PM₁₀. Since maximum concentrations are less than 150 ug/m³, the Federal PM₁₀ standard is also met.

(2) The 24-hour average concentration was substituted for the 3-month coverage.

visibility is expected in this area as a result of the Pasco facility.

3. Growth-Related Air Quality Impacts

The proposed Pasco 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.

4. 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 projected width, whichever is less. A single stack will be constructed servicing all four incinerator/boiler units. The largest structure which may influence the plume will be the building housing the boiler units. The height of this structure will be 110 feet and represents the lesser dimension of the height and width. The calculated GEP stack height is, thus, 275 feet. The actual stack will be equal to this height, therefore, no aerodynamic building wake downwash is anticipated.

5. Noncriteria Pollutants

Mercury (Hg), fluorides (F-), and sulfuric acid mist (H₂SO₄) are subject to the PSD regulations. These noncriteria pollutants have no ambient air quality standards with which to compare predicted air concentration levels. These pollutants are regulated by the application of BACT. Mercury is additionally subject to NESHAP standards.

The applicant has evaluated the potential ambient air impacts of these pollutants by comparing their predicted ambient air concentrations with guideline ambient air levels (AAL)

developing by New York state and Massachusetts, and the threshold limiting values (TLV) developed by the American Conference of Governmental Industrial Hygienists (ACGIH). The results show that none of these pollutants exceed any of these guideline levels. The Department is reasonably assured that there will be no significant air impact from these pollutants.

6. Non-PSD Pollutants

The Department requested that the applicant address several non-PSD pollutants that will be emitted from the facility and are of some public concern. Among these pollutants are hydrogen chloride (HCl), dioxins (as 2,3,7,8-TCDD), arsenic (As), and other heavy metals. Most of these pollutants will be controlled to a greater or lesser extent by the dry scrubber/baghouse control equipment, and by proper and efficient combustion. For example, HCl will be 90% controlled by the dry scrubber and dioxins are efficiently destroyed by maintaining proper temperature and dwell time in the combustion chamber.

For some of these pollutants, namely HCl and As, predicted ambient concentrations can be compared with AAL's and TLV's. The applicant has done this and has shown that no exceedance of these guideline levels is expected.

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 2600 feet away near the site entrance. 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 Pasco County's noise ordinance.

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 and 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 through sparsely developed residential areas. Noise levels from the mobile sources will depend on types of equipment utilized over the years and the degree of maintenance given. Concentrations 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, Pasco County has noise limits of 55 dBA at all times in residential areas but which may rise to 66 dBA from 7 a.m. to 10 p.m. in industrial zones bordering residential areas.. The resource recovery facility will be expected to comply with these limits during construction and operation.

E.8. Solid Waste/Hazardous Materials

Construction debris such as paper, concrete, and plastic will be transported to the County's existing landfill for disposal or to the proposed Class III landfill as appropriate.

During plant operation, the refuse is sorted for large items or non-combustibles such as demolition debris; remaining refuse

will be incinerated. Following combustion, the residue passes to storage hoppers prior to being trucked to the adjacent landfill. 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 incoming waste for approximately 12 days. If one-half of the plant would remain out of operation beyond a week, incoming raw wastes would be diverted to the associated ashfill/landfill until processing operations could resume.

F. Impacts on Surrounding Land Use and Population Density

The area surrounding the site does not have any appreciable residential population density within a kilometer of the site. The area is primarily low density rural. The area to the south, however, is zoned for medium density residential. It is about 50% developed at this time. Truck traffic to the site will increase noise levels and will increase levels of dust unless Hays Road is paved. The western side of the site acts as a partial buffer for the rest of the site as does the FPC transmission corridor.

G. Impact on Public Lands and Submerged Lands

Development of this site will not significantly impact any off site public lands nor will it impact any jurisdictional wetlands on site. Shady Hills Park is located approximately one mile north of the resource recovery facility. The stack would only be partially visible at the park while noise and air pollution impacts would be minimal.

H. Impact on Archaeological Sites and Historic Preservation Areas

The facility is to be located on a site that 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, will 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 environmental from significant harm.

VIII. COMPLIANCE AND VARIANCES

As currently designed, the operation of the Pasco 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 land previously disturbed by silviculture, clear cutting or cattle grazing.

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 several 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 should not cause any significant congestion in the plant vicinity.

2. Operation

a. The Resource Recovery Facility (RFF) 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. The RRF plant is not expected to contribute to violations of ambient air quality standards.

b. There should be sufficient water available from either ground water or from reclaimed water from a county sewage treatment system to supply the volume requirements of the facility.

c. The Southwest Florida Water Management District stated the following in their report dated February 25, 1988:

"RECOMMENDATION"

"Forwarding of this report to the Florida Department of Environmental Regulation and approval by the Electrical Power Plant Siting Board of the consumptive use described subject to the proposed conditions herein."

The District also recommended approval of the surface water management system for the project subject to special conditions, and recommended special conditions for operating the facility in

such a way as to eliminate or limit the disposal of unprocessed solid waste and hazardous waste at the site, and to require advance development of contingency plans for dealing effectively with landfill leakage.

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. Ninety percent of the solid waste received for burning will be reduced. Recovery of recyclable materials is possible. Electricity will be generated and sold to FPC. The remaining ten percent will be landfilled as a relatively inert residue (ash).

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 Pasco County agrees to abide by the conditions of certification, attached and incorporated herein, the DER would recommend certification of the Resource Recovery Plant site for up to 29 MW of capacity at 1200 tons per day of solid waste. 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.

4. The facility's proposed design offers reasonable assurance that the standards of the department of Environmental regulation will be met.

APPENDIX A

State of Florida

Back Over

Commissioners:
KATIE NICHOLS, Chairman
GERALD L. (JERRY) GUNTER
MICHAEL McK. WILSON
JOHN T. HERNDON
THOMAS M. BEARD



Executive Director
DAVID L. SWAFFORD
(904) 488-7181

Public Service Commission

November 19, 1987

RECEIVED
NOV 23 1987

Mr. Dale Twachtman
Secretary, Department of Environmental Regulation
Twin Towers Office Building
2600 Blairstone Road
Tallahassee, Florida 32399-2400

Office of the Secretary

Re: Final Report on determination of need for
Pasco County's Resource Recovery Facility

Dear Mr. Twachtman:

Pursuant to the Florida Electric Power Plant Siting Act (Chapter 403, Florida Statutes) the Florida Public Service Commission (FPSC) is empowered to make a determination of need for any electric power plant for which an applicant seeks certification.

The FPSC is also required to provide the Department of Environmental Regulation a final report stating the Commission's final decision on the applicant's request for determination of need. Enclosed is a copy of the Commission's Order No. 17752 which grants the petitioner's request for an affirmative determination of need. This order shall constitute the FPSC's final report as required in Chapter 403, Florida Statutes.

If you have any questions or concerns, please contact me.

Sincerely,

David Swafford
David Swafford
Executive Director

TB-DS:bc
Attachment

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition of Pasco County for) DOCKET NO. 870193-EG
determination of need for a solid) ORDER NO. 17752
waste-fired cogeneration power plant.) ISSUED: 6-26-87

The following Commissioners participated in the disposition of this matter:

KATIE NICHOLS, Chairman
GERALD L. GUNTER
JOHN T. HERNDON
MICHAEL MCK. WILSON

ORDER GRANTING DETERMINATION OF NEED

BY THE COMMISSION:

Under the Florida Electric Power Plant Siting Act (Chapter 403, Florida Statutes) this Commission is empowered to make a determination of need for any electric power plant for which an applicant seeks certification under the act. As set out in Section 403.508(3), Florida Statutes, that affirmative determination of need by the Commission is a condition precedent to the conduct of the certification hearing.

On February 24, 1987, we received the petition of Pasco County, Florida, for a determination of need for a 29 megawatt (MW) solid waste-fired cogeneration power plant. The petition states that the facility will have an in-service date of January, 1991, and will operate initially with a single 22 MW generator. At maximum capacity of 29 MW the facility will use up to 1,200 tons per day of municipal solid waste as fuel. Power produced by the facility will be sold to Florida Power Corporation.

Section 403.519, Florida Statutes, designates this Commission as the exclusive forum for determination of need and sets out the criteria which shall be considered in making such a determination. They are:

- (1) The need for electric system reliability and integrity;
- (2) The need for adequate electricity at a reasonable cost;
- (3) The cost-effectiveness of the proposed plant, i.e., whether the proposed plant is the most cost-effective alternative available; and
- (4) Conservation measures taken that are reasonably available to the applicant which might mitigate the need for the proposed plant.

Section 403.519 also provides that the Commission may consider such other matters as it deems relevant in making its determination of need.

We have reviewed Pasco County's application in the light of the criteria established by the statute. It is our conclusion that Pasco County's plant meets the relevant criteria for a determination of need under Section 403.519.

DOCUMENT NUMBER-DATE

05677 JUN 26 1987

FPC-RECORDS/REPORTING

RECEIVED JUL 01 1987

Pasco County's 29 MW plant, although small, will make some contribution to electric system reliability and integrity in Peninsular Florida. We project that without the addition of qualifying facilities or power plants before the summer of 1993, peninsular Florida will have total available capacity of 32,318 MWs with an expectant coincident firm peak demand of 25,138 MWs. This equates to a reserve margin of 28 percent. The contribution of Pasco County's facility to this reserve margin would only be one one-hundredth of one percent. Clearly, this is a small amount; yet it is a positive contribution.

Applying the second and third criteria enumerated in Section 403.519 is somewhat problematical. In order to determine whether the facility would help meet the need for adequate electricity at a reasonable cost and whether the proposed plant is the most cost-effective alternative available, it is necessary to consider the cost to Florida ratepayers of the facility's output and the terms and conditions under which that output would be provided to the power grid. Pasco County has not signed a standard offer or negotiated contract with an electric utility for the purchase of its facility's output. Thus, based on the current state of affairs, we would be unable to make the economic judgement necessary to determine if the second and third criteria of reasonable cost and cost-effectiveness have been met. However, Pasco County has made a commitment to the Commission that the facility's output, when the plant becomes operational, will be supplied in accordance with applicable Commission rules and Florida Statutes. This commitment means that the upper limit on the sale of Pasco County's generative output would be the standard offer amount as determined under the Commission's formula or such other formula as may be appropriate under existing rules and statutes at the time a contract with the utility is signed by Pasco County. With this commitment from Pasco County we find that the electricity produced by the solid waste facility will be priced on a cost-effective basis and supplied at reasonable cost, as will be judged by the Commission's standards in effect at the time.

Inasmuch as Pasco County's facility will serve the dual purpose of waste disposal and production of electricity we do not believe that conservation of electrical energy is directly at issue in this case. We, therefore, make no specific finding on this statutory criteria nor do we find it necessary to apply any other specific criteria in making our determination of need.

Now, therefore, in consideration of the above, it is

ORDERED by the Florida Public Service Commission that the petition of Pasco County for a determination of need for its proposed 29 megawatt solid waste-fired generating facility is hereby granted as set forth in the body of this order. It is further

ORDERED that this docket be closed.

By ORDER of the Florida Public Service Commission,
this 26th day of June, 1987.

STEVE TRIBBLE, Director
Division of Records and Reporting

(S E A L)

by: Kay Flynn
Chief, Bureau of Records

DES

APPENDIX B



Received DER

FEB 29 1988

PPS

STATE OF FLORIDA
DEPARTMENT OF COMMUNITY AFFAIRS

2740 CENTERVIEW DRIVE • TALLAHASSEE, FLORIDA 32399

BOB MARTINEZ
Governor

THOMAS G. PELHAM
Secretary

February 26, 1988

Mr. Hamilton Oven
Department of Environmental Regulation
Siting Coordination Section
2600 Blairstone Road
Tallahassee, Florida 32399

Dear Mr. Oven:

In accordance with Section 403.507, Florida Statutes, the Department of Community Affairs submits the attached final report on the Pasco County Resource Recovery Facility power plant site certification application. The final report presents the results of our evaluation of the compatibility of the proposed power plant with the State Comprehensive Plan. To summarize the report, we find the proposed power plant to be compatible with the State Comprehensive Plan, provided that certain recommended conditions of certification are met.

If you have any questions regarding this report, please communicate directly with Mr. Paul Darst of this office. His telephone number is 488-4925.

Sincerely,

J. Thomas Beck, Chief
Bureau of State Planning

JTB/pda

Final Report
on the

PASCO COUNTY RESOURCE RECOVERY FACILITY
POWER PLANT SITE CERTIFICATION APPLICATION

Submitted to:

FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

FEBRUARY 26, 1988

Prepared by:

FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS
BUREAU OF STATE PLANNING
POWER PLANT SITING PROGRAM

INTRODUCTION

On 16 November 1987 Pasco County submitted an application for power plant site certification to the Florida Department of Environmental Regulation (DER). The proposed resource recovery facility will use a mass-burn system to incinerate wastes and produce steam to power its turbine generators. Although the disposal of solid waste is the primary purpose of the facility, the plant will also have an initial gross electrical generating capacity of approximately 22 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 75 or more 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, Fla. Stat.). Certification under the act may also be sought for facilities of less than 75 megawatts, at the option of the applicant. Section 403.507 of this act requires the Department of Community Affairs (DCA) to review a power plant siting application for compatibility with the State Comprehensive Plan (SCP) and submit preliminary and final reports to the DER, the lead agency in coordinating the power plant siting certification process. The DCA submitted its preliminary report to the DER on 20 January 1988. This submittal represents the DCA's final report on the Pasco County Resource Recovery Facility.

The purpose of this final report is to present the goals and policies of the SCP which are 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.

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 186.007, Fla. Stat.). The current SCP, adopted by the legislature as Chapter 187, Fla. Stat., in 1985, addresses 25 major areas as provided below:

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

In the SCP goals have been established for each of the 25 subject areas. These goals are defined in section 186.003, Fla. Stat., as "the long-term end toward which programs and activities are ultimately directed." 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 for compatibility with the SCP, no specific process by which to do so is given, either in the act or in the administrative rule (Chapter 17-17, Florida Administrative Code). To assess the compatibility of the power plant application with the SCP, the DCA employs a method by which the projected impacts of the power plant are compared directly with the goals and policies of the SCP. 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 this report, a determination of the project's overall compatibility with the SCP is made by assessing these positive and negative impacts of the project.

PROJECT DESCRIPTION

The proposed Pasco County Solid Waste Resource Recovery Facility (PCRRF) is to be located in northwest Pasco County, in sections 24, 25, and 26 of Township 24 south, Range 17 east. The 751-acre site lies 2.5 miles north of State Road 52 and 7 miles east of U.S. Highway 19. The nearest incorporated areas, Port Richey and Weeki Wachee, are about 10 miles away.

In addition to the resource recovery facility, the project site will contain stormwater retention ponds, landfill/ashfill areas, an internal roadway system, and open areas. Initially the proposed facility will have a continuous rated capacity of 900

tons a day of municipal solid waste and a gross electrical generating capacity of approximately 22 megawatts. Certification is being sought for an eventual generating capacity of 29 gross megawatts, produced by burning 1200 tons of municipal solid waste a day. The county will contract with a full service vendor to design, construct, and operate the project for a period of 20 years. Construction of the project is projected to begin in August 1988 and it is expected to be in service by August 1991.

APPLICABLE GOALS AND POLICIES OF THE STATE COMPREHENSIVE PLAN

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. These goals and policies are within the SCP subject areas of Water Resources, Natural Systems and Recreational Lands, Air Quality, Energy, Hazardous and Nonhazardous Materials and Waste, Land Use, 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 PCRRF with these goals and policies.

Water Resources

Policy No.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 No.2--Identify and protect the functions of water recharge areas and provide incentives for their conservation.

Policy No.5--Ensure that existing development is compatible with existing local and regional water supplies.

Policy No.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 No.9--Protect aquifers from depletion and contamination through appropriate regulatory programs and through incentives.

Policy No.10--Protect surface and groundwater quality and quantity in the state.

Policy No.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 No.12--Eliminate the discharge of inadequately treated wastewater and stormwater runoff into the waters of the state.

Policy No.13--Identify and develop alternative methods of wastewater treatment, disposal, and reuse of wastewater to reduce degradation of water resources.

Policies Nos.1,2,5,9,and 10 encourage the protection of the quality and quantity of surface and groundwater in Florida. The proposed PCRRF is to be located over a portion of the Floridan aquifer, the major potable water source for Pasco County and, in fact, for the multicounty Southwest Florida Management District (SWFWMD) as a whole. The nearest well field drawing water from the Floridan aquifer is the Spring Hill pumping center, which is located less than 5 miles north of the site. Spring Hill is projected to be withdrawing 10 million gallons a day by 1994. There are a number of small, private wells within a 5-mile radius of the site.

The land surface east and south of this area is characterized by sink holes, ponds, and lakes. Several sink holes and associated wetlands are located in the southwestern part of the site, which is the only part of the site that contains any of the 100-year floodplain. Since this area will not be developed, the proposed resource recovery facility is consistent with policy No. 8.

Although the portion of the site proposed for the resource recovery facility and the ashfill/landfill is free of sink holes and water bodies, the geology and hydrology of this general area increase the potential for impacts of the proposed PCRRF on the quality and quantity of groundwater resources. The site is described as a recharge area to the Floridan aquifer, which is overlain here by a relatively thin layer of sediments, allowing entry into the aquifer of contaminants from a leaking landfill. The aquifer in this area is characterized by relatively high transmissivity, which could make recovery of contamination difficult. It is noted, however, that the proposed resource recovery facility presents less of a threat to groundwater than would a typical sanitary landfill of equivalent capacity.

According to the application, water for the PCRRF will be supplied from the proposed Pasco County Hudson Wastewater Treatment Plant (Hudson WWTP) and from two onsite wells. Cooling water for the plant will be ordinarily entirely supplied by a pipe delivering secondarily treated wastewater from the Hudson WWTP. The backup supply for cooling water will be an onsite well capable of delivering 1.01 million gallons a day. Facility needs for potable water and other domestic uses will be met from a smaller onsite well capable of delivering 60,000 gallons a day. This use of wastewater for cooling water will greatly reduce any potential adverse impact of the PCRRF on potable water supplies.

Wastewater and collected leachate from the resource

recovery facility will be sent back to the Hudson WWTP. The stormwater management system will be designed to meet water management district standards. All stormwater will be retained onsite. Thus there will be no discharge of wastewater or storm water to water bodies or to groundwater, except for the infiltration of retained stormwater into the groundwater. Recharge at the site may be lessened because a minor portion of the site will be covered with impermeable surfaces; however, this is not regarded as a significant impact.

Although the PCRRF will use a modern containment system for leachate from the landfill, there remains some concern that contaminated leachate could enter the groundwater and the Floridan aquifer. If it did, it could well move down the potentiometric gradient toward the Spring Hill pumping center; however, movement of the contaminated plume through the aquifer to the zone of the well field would probably take many years, allowing time for corrective action. It is recommended that a contingency plan to address aquifer contamination be developed by the applicant, subject to approval by the water management district, and that it be incorporated as a condition of certification. For additional conditions of certification needed to protect water resources, the DCA defers to those contained in the certification reports of the DER and the SWFWMD.

The DCA finds that the proposed PCRRF would be consistent with Water Resources policies Nos. 1, 2, and 12, and the water quality portions of policies Nos. 5, 9, and 10, if the following condition of certification were met: The certification holder shall develop plans for the monitoring of surface waters and groundwater in the area of the PCRRF site to the approval and satisfaction of the DER and the SWFWMD, and these plans shall be implemented so as to minimize potential impacts to the quality of surface water and groundwater.

As stated above, the source of cooling system water for the PCRRF will be treated wastewater from the county's proposed Hudson WWTP. The WWTP will provide advanced wastewater treatment to the water it sends to the PCRRF. The cooling system of the facility will utilize a wet cooling tower and will require up to 1 million gallons a day of makeup water. This is considerably more water than would be required by a system utilizing a dry cooling tower or a dry condenser, which, however, are generally more expensive than wet cooling towers. According to the application, it is possible to supplement water demands for the dry scrubbers with cooling water blowdown, thereby reducing raw water requirements. Blowdown can also be used for residue quench. It is recommended that the PCRRF employ such recycling of water.

Because the PCRRF will use wastewater ("water of the lowest acceptable quality for the purpose intended"--SCP) the project is found to be consistent with Water Resources policy No. 13 and the water reuse portion of policy No. 11. Because the facility will use water that has no other significant use, it is not inconsis-

tent with the water quantity and water conservation portions of policies Nos. 5, 9, 10, and 11. If, however, the facility cannot use the wastewater for cooling and must withdraw groundwater for cooling, then it would not be consistent with these policies, because the cooling system proposed would require larger amounts of water for its cooling system than would an alternative system using dry cooling. Therefore, it is strongly encouraged that the PCRRF use the wastewater for cooling.

Natural Systems and Recreational Lands

Policy No. 1--Conserve forests, wetlands, fish, marine life, and wildlife to maintain their environmental, economic, aesthetic, and recreational values.

Policy No. 3--Prohibit the destruction of endangered species and protect their habitats.

Policy No. 7--Protect and restore the ecological functions of wetlands systems to ensure their long-term environmental, economic and recreational value.

The proposed PCRRF is to be located in an area which is considered to be of limited ecological significance. Much of the site has been used for growing pine trees and has been clearcut several times, and the surrounding areas are characterized by agricultural, low-to-moderate-density residential, and vacant land uses. A Florida Power Corporation transmission line runs approximately north-south somewhat west of the center of the proposed site.

Onsite biological communities are coniferous planted forest, sand pine scrub, sandhill, clearcut-successional, freshwater marsh, and pond. Most of the site is occupied by plantations of slash pine and sand pine. Other species found in these plantations include wax-myrtle, turkey oak, myrtle oak, and saw-palmetto. According to the Florida Game and Fresh Water Fish Commission (GFC), there is a remnant sandhill community of some 80 acres in the northeast part of the site, which would be desirable for retention and management as a natural community. Noting (1) that the sandhill community is one that is disappearing from central Florida and (2) that only 40 percent of the site will be developed, the DCA supports this recommendation to the extent it is feasible. Characteristic species of this community include long-leaf pine and turkey oak. Clearcut areas are occupied by dog fennel, broomsedge, and other common successional species.

According to the site certification application, the species and habitats on this site are ubiquitous and typical of Pasco County and west central Florida. No threatened or endangered plant or animal species have been observed on the site or are known to occur there. The gopher tortoise, a species of special concern according to the GFC, has been identified on the site.

The application states that 13 active burrows were located on-site; however, a site inspection by the GFC revealed 16 additional burrows (state of activity not noted). According to the GFC, the applicant has agreed to relocate the gopher tortoises and their commensals from the area that is to be developed to the 168 acres in the southwest part of the site that will be left undeveloped. The applicant has also agreed to manage this parcel for the benefit of this species of special concern. If the number of tortoises to be relocated exceeds the tortoise carrying capacity of the 168 acres, the additional animals must be relocated to other suitable habitat under the control of the county.

Because (1) the site is located in an area which may be considered to be of limited ecological significance, (2) the probability of threatened or endangered species occurring on the site is low, and (3) the applicant has agreed to relocate and manage the impacted gopher tortoise population, the proposed facility is found to be consistent with the Natural Systems and Recreational Lands policies Nos.1, 3, and 7.

Air Quality

Policy No.1--Improve air quality and maintain the improved level to safeguard human health and prevent damage to the natural environment.

Policy No.2--Ensure that developments and transportation systems are consistent with the maintenance of optimum air quality.

Policy No.3--Reduce sulfur dioxide and nitrogen oxide emissions and mitigate their effects on the natural and human environment.

Policy No.4--Encourage the use of alternative energy resources that do not degrade air quality.

The above policies encourage the maintenance or improvement of air quality. Generally, the resource recovery project will negatively impact air quality in Pasco County. Operation of the facility will increase sulfur dioxide and nitrogen oxide emissions, as well as carbon monoxide and other air pollutants.

The PCRRF will, however, be required to meet state and federal air quality standards, including Prevention of Significant Deterioration (PSD) increments, National Air Attainment Quality Standards (NAAQS), Florida Air Attainment Quality Standards (FAAQS), and New Source Performance Standards (NSPS). Negative impacts on air quality will be reduced because the proposed facility will employ whatever pollution control technology is determined to constitute the Best Available Control Technology (BACT) for the facility. In the site certification application, Pasco County has proposed the use of acid gas dry

scrubbers and baghouse filters to control particulates generated by the burning of municipal solid waste.

Of additional concern to the DCA is the potential air quality impact from the chlorinated hydrocarbons which can be formed as a result of the incineration of municipal solid waste. Dioxin, a type of chlorinated hydrocarbon, has been shown to cause cancer, birth defects, liver and kidney failure, nervous disorders, and abortions in animals and is suspected of causing the same in humans. Neither the amount of chlorinated hydrocarbons which are produced and emitted from the incineration of municipal solid waste nor the associated risk to human health has been conclusively established by the EPA or the DER. Therefore regulations for permissible levels of chlorinated hydrocarbon emissions have not been adopted by either of these agencies. It has been established, however, that baghouse filters provide better control of sub-micron-sized particulates than do alternative technologies such as electrostatic precipitators and that dioxins and heavy metals tend to be adsorbed onto these sub-micron-sized particulates. Therefore some control of dioxins should be provided by the baghouse filters.

Although elimination of emissions is technologically impossible, the employment by the PCRRF of acid gas dry scrubber and baghouse filter technology provides the best control of emissions of both hydrochloric acid mist and dioxins and contributes to minimization of air pollution impacts. Even with this pollution control technology, the proposed facility will still have a negative impact on air quality in Pasco County. It is therefore judged to be inconsistent with the above policies; however, it is recognized that the proposed employment of the dry scrubbers and baghouse filters will considerably reduce the inconsistency of the project with the above policies.

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 No.5--Reduce the need for new power plants by encouraging end-use efficiency, reducing peak demand, and using cost-effective alternatives.

Policy No.9--Promote the use and development of renewable energy resources.

The main function of the resource recovery facility is to dispose of solid waste. The electrical power produced is an added benefit of the project, which can be considered a cost-effective alternative in reducing the need for new power plants. The energy produced by the PCRRF is equivalent to that produced by burning 352,000 barrels of oil or 113,000 tons of coal a year.

The fuel which will be used to generate this electrical energy is processable municipal solid waste, most of which--paper, cardboard, garden wastes, food wastes--can be regarded as a renewable energy resource. Therefore the proposed resource recovery facility is found to be consistent with the Energy goal and policies Nos. 5 and 9.

Hazardous and Nonhazardous Materials and Wastes

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 No.1--By 1995, reduce the volume of nonhazardous solid waste disposed of in landfills to 55 percent of the 1985 volume.

Policy No.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 No.9--Identify, develop, and encourage environmentally sound wastewater treatment and disposal methods.

The proposed resource recovery facility is designed to reduce solid waste to 30 percent of its original volume. The need for landfills will be reduced accordingly, and therefore the project is found to be consistent with policy No. 1 and the landfill use portion of the above goal.

Policy No. 7 encourages the implementation of recycling, resource recovery, energy recovery, and other methods of using waste materials. The Pasco County Comprehensive Plan lists as an objective the involvement of county residents in recycling efforts. The proposed resource recovery facility's recovery of resources, or recycling, will, however, apparently be limited to ferrous materials. It is possible to recover more resources than this from municipal solid waste; nevertheless, on balance, the PCRRF is considered to be consistent with policy No. 7.

Wastewater from the proposed PCRRF will be sent to the proposed Pasco County Hudson WWTP. According to the site certification application, the WWTP will provide advanced wastewater treatment to the wastewater it receives and will meet all applicable state, federal, and treatment facility discharge regulations and water quality standards. Therefore, the proposed resource recovery facility is found to be consistent with the wastewater management portion of the above goal and policy No.9.

According to the PCRRF site certification application, little if any hazardous waste will enter or be accepted at the

facility. The procedures described in the application to prevent hazardous waste from entering the waste process stream include the following:

1. Users of the resource recovery facility will be informed that hazardous wastes will not be accepted.

2. Signs will be posted at the weigh station stating what kinds of wastes are accepted.

3. Weigh station personnel and bunker crane operators will routinely inspect the wastes received.

In addition to these proposed measures, the DCA recommends that (1) inspecting personnel at the resource recovery facility receive training on the identification of hazardous wastes and (2) operators of delivery vehicles be asked to identify the source of the solid waste delivered to the facility weigh station so that deliveries with a high probability for containing pathological wastes or hazardous wastes may be inspected by facility personnel.

One other issue treated by the certification application deserves consideration here: the loss of wastewater from the cooling tower to the atmosphere as "drift." The particular hazard posed is the possibility that bacteria and viruses present in the wastewater will be dispersed as drift over a wide area and thereby cause diseases in humans and livestock. The DCA believes that the possibility of this happening is remote. The Hudson WWTP will provide secondary wastewater treatment followed by filtration and chlorination, which has been shown to inactivate bacteria and viruses. The drift will be subject to great dilution in the atmosphere and will substantially settle out before reaching a residential area. The applicant has proposed a monitoring program consisting of daily testing of WWTP effluent for bacteria and viruses for one week during compliance testing. Afterwards, the cooling water will be tested monthly during the first year of resource recovery facility operation. A more frequent testing--weekly or biweekly--during the first year would provide a greater safeguard to public health and is recommended by the DCA.

Because Pasco County has developed what seem to be proper and effective procedures for managing hazardous wastes at the resource recovery facility, the proposed PCRRF is found to be consistent with the hazardous waste and materials portion of the above goal.

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 No. 6--Consider, in land use planning and regulation, the impact of land use on water quality and quantity, the availability of land, water, and other natural resources to meet demands, and the potential for flooding.

The current Pasco County comprehensive plan does not contain a land-use map and therefore does not identify a recommended land use for the site. According to the certification application, the new county comprehensive plan will contain a land-use map, which will identify the site for resource recovery. The zoning classification is Agricultural; any development by the county is expressly exempted from the county zoning ordinance. Therefore, the PCRRF is allowable at this site without changing the existing zoning.

The site is bordered on the north by low-density rural and vacant agricultural land uses. Land uses to the east are vacant agricultural and vegetated cover. South of the site are wetlands, vacant grazeland, and a low-density, single-family residential area. The nearest residence is 2000 feet from the resource recovery facility. To the west the land uses are low-density residential, some industrial and commercial, two "pockets" of high-density, multi-family housing, and vacant grazeland. The closest residences here are about 4000 feet northwest of the site. Five existing and proposed schools occur between 1 and 5 miles from the site. Shady Hills County Park is located about 500 feet north of the site and about 1 mile north of the emissions stack, and the proposed Concourse County Park will be located about 2.5 miles south of the site. The population within a 5-mile radius of the site is estimated at 18,600 (1985 estimate). Residential growth in the area is expected to be average for Pasco County, one of the faster-growing counties in Florida. Industrial and commercial growth is expected to continue to be slow. Although a resource recovery facility might not ordinarily be considered to be consistent with the agricultural and residential land uses in this area, the design and placement of the facility--on a large site allowing much buffer space--are such that it should not significantly degrade the character of the surrounding area.

In reference to policy No.6, the DCA notes that the PCRRF has been designed to have minimal impacts on water quality and quantity. See discussion under "Water Resources." The PCRRF will reduce the need for landfills, which require greater amounts of land than do resource recovery facilities and have a greater potential to pollute groundwater. The PCRRF should have an insignificant impact on flooding on or off the site. A portion of the 100-year floodplain extends into the southwest portion of the site, which will not be developed, whereas the resource recovery facility and the ashfill/landfill are located above the 100-year floodplain. The drainage system is designed to keep all stormwater runoff onsite.

The potential impacts of the PCRRF on air and water quality have been discussed previously, as have the county's plans for preventing or mitigating these impacts. Other potential impacts of the proposed PCRRF include noise, increased traffic during construction, and an aesthetic impact resulting from the 275-foot height of the emission stack.

According to the certification application, noise caused by construction of the proposed facility will be of short duration and will have only a slight adverse impact on the surrounding area because of the site's rural setting and the moderating effect of the vegetation onsite. The incremental noise increase (beyond background noise) produced during operation of the facility is predicted to be below discernible levels and within county noise standards for industrial facilities.

The certification application states that by the year 2010, at the time of peak activity, the PCRRF will generate 462 vehicle trips a day. This will increase the traffic on local roads; however, this additional traffic is not great enough to be regarded by the DCA as a substantial impact. At the height of the construction period, an average of approximately 210 vehicles will be added to local roadways by commuting construction workers during peak traffic periods in the morning and afternoon. This is more of an impact than that which will be incurred during operation of the resource recovery facility, but it is temporary and is also not regarded as a substantial impact.

The emissions stack will be 275 feet high and the resource recovery facility building 110 feet high. The certification application states that the building will not be visible from most observation points around the site. The stack will be more visible. To diminish the visibility of these large structures, as well as to reduce any noise impacts, the DCA recommends that a buffer strip of trees be maintained or planted around the boundary of the site. If this is done, the proposed PCRRF would be consistent with the Land Use goal and policy No. 6.

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 No.1--Provide incentives for developing land in a way that maximizes the uses of existing public facilities.

The portion of this goal which encourages protection of investments of existing public facilities is not particularly relevant to the PCRRF because no other such facilities are currently in operation in Pasco County. The planning of the project may be considered timely because the county's present means of disposing of solid waste will no longer be adequate

within a few years. The planning of the facility may be considered efficient in that the electric power generated by the facility will replace the need for about 352,000 barrels of oil each year. The Florida Public Service Commission has determined that the production of electricity by the resource recovery facility will contribute to the reliability and integrity of the electrical system of peninsular Florida. As mentioned, the proposed PCRRF will use wastewater from the Pasco County Hudson WWTP as a source of cooling water. This use of wastewater may be said to maximize the use of an "existing" public facility (the Hudson WWTP should be operating before the PCRRF). Pasco County will pay for the eventual decommissioning of the resource recovery facility by means of a closure account funded through garbage tipping fees. All of the aforementioned aspects of the project contribute to its consistency with the above goal and with policy No.1.

Cultural and Historical Resources

Policy No.3--Ensure the identification, evaluation, and protection of archaeological folk heritage and historic resources properties of the state's diverse ethnic population.

Policy No.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.

A review of the development site by the Florida Department of State, Division of Historical Resources, has indicated that no archaeological or historical sites are recorded for the project area and that it is highly unlikely any significant, unrecorded sites exist in the vicinity. Through the certification process, Pasco County has considered and sought to identify historic resources affected by the site development. Therefore, the proposed project is found to be consistent with policies No.3 and No.6.

CONCLUSION

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 assessed in terms of its overall compatibility with the SCP rather than its compatibility with specific goals and policies.

In summation, the Department of Community Affairs finds that the proposed Pasco County Resource Recovery Facility would be

consistent with the following SCP policies and goals:

Water Resources: Policies Nos. 8 and 13 and the water reuse portion of policy No. 11.

Natural Systems and Recreational Lands: Policy Nos. 1, 3, and 7.

Energy: Goal, Policies Nos. 5 and 9.

Hazardous and Non-Hazardous Materials and Waste: Goal, Policies Nos. 1, 7, and 9.

Public Facilities: Goal, Policy No. 1.

Cultural and Historical Resources: Policy Nos. 3 and 6.

The DCA finds that the proposed project would be consistent with the following policies if the proposed conditions of certification were met:

Water Resources: Policies Nos. 1, 2, and 12 and the water quality portions of policies Nos. 5, 9, and 10.

Land Use: Goal, Policy No. 6

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

Air Quality: Policies Nos. 1, 2, 3, and 4.

The DCA considered the following issues important in determining overall compatibility with the SCP:

1. The proposed PCRRF is to be located over portions of the Floridan aquifer, the major potable water source for Pasco County. The site is said to be a recharge area for the Floridan aquifer. The aquifer is poorly confined in this area, having only a thin (5 to 15 feet) layer of clay above its limestones, and is therefore vulnerable to contamination from water-borne pollutants--for example, the leachate from a solid waste landfill. Once in the aquifer, a contaminated plume could spread into adjacent portions of the aquifer. Normally, such movement through the aquifer is very slow; however, the Floridan aquifer in this area has, according to the SWFWMD, high transmissivity, and therefore a contaminated plume could spread somewhat faster through this part of the aquifer (though still slow by surface-water standards). One region of the aquifer to which a hypothetical plume of contamination could spread is that which feeds the Spring Hill pumping center. Spring Hill is located within 5 miles of the site and, potentiometrically, is down-gradient from it--that is, water within the aquifer moves from the area of the PCRRF toward the area of the Spring Hill pumping center. Then, too, western Pasco County is subject to sinkhole development,

and, in fact, the area south and east of the site is dotted with wet sinkholes, ponds, and lakes. These geologic conditions increase the potential for impacts of the proposed PCRRF on the quality of groundwater resources.

On the other hand, the landfill of the PCRRF is designed to prevent leachate leakage and to detect it if it should occur. The resource recovery facility is a substitute for a sanitary landfill, which typically poses a greater threat to groundwater resources than does a resource recovery facility. The landfill of the PCRRF will receive ash from the burning process and unprocessable solid waste, neither of which is as likely to have a dangerous leachate as the processible solid waste found in a sanitary landfill.

2. Of particular concern to the DCA is the potential impact on human health from the chlorinated hydrocarbons which can be formed as a result of the incineration of municipal solid waste. Policy No. 1 within the Air Quality element of the SCP states: "Improve air quality and maintain the improved level to safeguard human health and prevent damage to the natural environment." Policy No.5 states: "Ensure, at a minimum, that power plant fuel conversion does not result in higher levels of air pollution." Neither the United States Environmental Protection Agency nor the DER have established standards for permissible levels of chlorinated hydrocarbon emissions. It is the opinion of the DCA that, until standards of permissible levels of chlorinated hydrocarbon emissions have been established for the State of Florida, mass-burn facilities such as the PCRRF should be required to install pollution control technology to minimize emissions of chlorinated hydrocarbons, in order to be consistent with the aforementioned SCP air quality policies. As noted under the "Air Quality" discussion, the PCRRF will have a suitable air pollution control technology.

3. In its analysis, the DCA considered the alternatives to the construction of a resource recovery facility in Pasco County. One such alternative would be to increase the number of landfills in Pasco County. Pasco County is increasingly becoming more urbanized and acceptable landfill sites are becoming increasingly difficult to locate and expensive to operate. Sanitary landfills require greater amounts of land than do resource recovery facilities, can be unsightly and noisome, and may lower the value of neighboring properties. Through combustion, the resource recovery facility will reduce the volume of solid waste disposed of in its landfill by approximately 70 percent, thus reducing the need for siting and developing new landfills. Another alternative to the resource recovery project's secondary function as a generator of electricity would be to (slightly) accelerate construction of a new base-load electrical generating station to serve central Florida. These large power plants are very expensive and often have significant environmental impacts. Certification and construction of the resource recovery facility will help postpone the date at which a new base-load power plant will be needed.

4. The development and use of resource and energy recovery facilities is a policy of 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 that the Pasco County Resource Recovery Facility would be compatible overall with the State Comprehensive Plan if the following recommended conditions of certification were met:

Condition A--The certification holder shall develop plans for the monitoring of groundwater in the area of the PCRRF site to the approval and satisfaction of the DER and the SWFWMD, and these plans shall be implemented so as to minimize potential negative impacts to groundwater. The certification holder shall also develop a contingency plan for the mitigation of any leachate leakage that is detected. This condition of certification is intended to help make the proposed resource recovery project consistent with SCP Water Resources policies Nos. 1, 5, 9, 10, and 12.

Condition B--In order to minimize noise and aesthetic impacts from the facility, the certification holder shall maintain or install a buffer of trees along the boundaries of the site. The buffer shall be of a height and width suitable for these purposes. This condition of certification is intended to moderate the aesthetic and noise impacts of the facility.

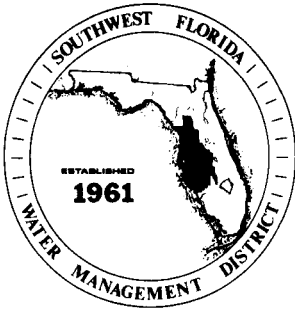
foregoing, the Permittee shall comply with the following specific conditions of certification:

1. Emission Limitations upon Operation of Units 1-3

a. Stack emissions from each unit shall not exceed the following assuming a Btu content of 4800 Btu/lb of MSW:

- (1) Particulate matter: 0.015 grains per standard cubic foot dry gas corrected to 12% CO₂.
- (2) SO₂: 60 ppmdv at 12% CO₂, 6-hour rolling average; or 70% reduction by weight of uncontrolled SO₂ emissions; not to exceed 100 ppmdv corrected to 7% O₂.
- (3) Nitrogen Oxides: 0.643 lbs/MBtu heat input.
- (4) Carbon Monoxide: 100 ppmdv corrected to 7% O₂, 8-hour rolling average.
- (5) Lead: 0.0007 lbs/MBtu heat input.
- (6) Mercury: 8.0 x E-4 lb/MBtu
- (7) Odor: there shall be no objectionable odor at or outside the site boundary.
- (8) Visible emissions: opacity shall be no greater than 15% 6-minute average 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, shut down or malfunction 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: 0.0080 lb/MBtu heat input.
- (10) Arsenic: 9.1 x E-6 lb/MBtu heat input.
- (11) Beryllium: 1.35 x E-7 lb/MBtu heat input.
- (12) VOC: 0.021 lb/MBtu heat input.
- (13) Hydrogen Chloride: 0.127 lb/MBtu heat input.

APPENDIX C



Southwest Florida Water Management District

MICHAEL ZAGORAC, JR., Chairman, Belleair WALTER H. HARKALA, Vice Chairman, Plant City
ANNE M. BISHOPRIC, Secretary, Sarasota HORACE F. HERNDON, Treasurer, Lake Wales
ROY G. HARRELL, JR., St. Petersburg ROBERT T. BRAMSON, M.D., Tampa
WILLIAM H. WILCOX, Ph.D., Port Charlotte MARY ANN HOGAN, Brooksville CHARLES A. BLACK, Crystal River

GARY W. KUHL, Executive Director DANIEL P. FERNANDEZ, General Counsel
WILLIAM K. HENNESSEY, PETER G. HUBBELL, JERRY I. SIMPSON, Deputy Executive Directors

Received DER

February 25, 1988

FEB 29 1988

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Mr. Hamilton S. Oven, Jr., Administrator
Siting Coordination Section
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: In Re: Application for Power Plant Site
Certification of Pasco County Solid Waste
Resource Recovery Facility
DOAH Case No. 87-5337

Dear Mr. Oven:

As you may know, the supplementary information requested by the Southwest Florida Water Management District for review of those matters within the District's jurisdiction on Pasco County's Solid Waste Resource Recovery Facility application was received on January 27, 1988.

Accordingly, enclosed are reports by the District on consumptive use of water and surface water management at the proposed facility required by Section 403.507(1)(c), Florida Statutes, and Rule 17-17.091(2)(e), Florida Administrative Code. Also enclosed is the District's report on the ashfill/landfill at the proposed facility required by Section 403.707(4), Florida Statutes, and Rule 17-7.07(4), Florida Administrative Code. These reports were approved by the District Governing Board on February 23, 1988, as agreed in the Joint Stipulation and Motion to Expedite in the above-referenced case and Kent Zaiser's letter to David S. Dee dated January 8, 1988.

Please advise us if you have any questions concerning the reports. Also, please provide us with a copy of the Department of Environmental Regulation's written analysis of Pasco County's

SOUTHWEST FLORIDA WATER
MANAGEMENT DISTRICT
BROOKSVILLE PERMITTING DIVISION

STAFF REPORT
CONSUMPTIVE USE PERMIT APPLICATION

Application No. 209087
Pasco County, Florida
Solid Waste Resource Recovery Facility

I. ABSTRACT

		<u>Quantities Requested</u>	<u>Quantities Proposed</u>
AVERAGE DAY	N/A	940,000 gpd	720,000 gpd
CONSUMPTIVE USE	N/A	N/A	703,000 gpd
MAXIMUM DAY	N/A	1,150,000 gpd	1,150,000 gpd

This is a proposed resource recovery and electrical power generation facility for Pasco County. Boiler make-up and potable water will be supplied by a proposed 4-inch well. Interim and/or emergency cooling water is to be supplied by a proposed 10-inch well. Permanent primary cooling water source supply is a proposed regional waste water treatment plant. All waste from this facility is to be returned to the proposed regional waste water treatment plant for disposal.

Special Conditions:

1. The facility operator attests that all statements made for this authorization are true and accurate and based upon the best information available, and that all conditions set forth in this authorization will be complied with. If any of the statements and or supporting data are found to be untrue and inaccurate, or if the facility operator fails to comply with all of the conditions set forth herein, then authorization for the facility may be revoked following notice and hearing.
2. Authorization is predicated upon the assertion by the applicant that the use of water applied for and granted is and continues to be reasonable and beneficial use as defined in Section 373.019(5), Florida Statutes (F.S.), is and continues to be consistent with the public interest, and will not interfere with any legal use of water existing on the date authorization is granted.
3. In granting authorization, the District has, by regulation, reserved from use by applicant, water in such locations and quantities, for such seasons of the year, as it determines may be required for the protection of fish and wildlife and the public health and safety. Such reservation are subject to periodic review and revision in light of changed conditions.

4. Authorization is for a combined average annual withdrawal of 720,000 gallons of water per day with a maximum combined withdrawal rate not to exceed 1,150,000 gallons during a single day. Withdrawals authorized are shown in the table below.
5.

USER I.D.	DISTRICT I.D.	WITHDRAWAL POINT		GALLONS PER DAY AVERAGE	GALLONS PER DAY MAXIMUM
		LATITUDE	LONGITUDE		
1	1	282157	823430	677,000	1,010,000
2	2	282157	823429	43,000	60,000
6. In the event the District declares that a water shortage exists pursuant to Rule 40D-2.511, Florida Administrative Code (F.A.C.), the District may alter, modify or declare inactive all or parts of this authorization for water use.
7. The District reserves the right, at any reasonable time, to collect water samples from any withdrawal for this facility. The District may require the facility operator to submit samples in mailable containers provided by the District.
8. An authorized District representative may, at any reasonable time, enter the property, inspect the facility, and make environmental or hydrologic assessments. The facility operator shall either accompany District staff onto the property or make provision for access onto the property.
9. If the District, after consultation with the facility operator determines that significant water quantity or quality changes, or adverse environmental impacts are occurring, the District, upon notice and hearing, may reconsider the allowed withdrawal quantities.
10. The District may, at a future date, establish minimum water levels in aquifers and lakes, and minimum rates of flow in streams, which may require the facility operator to limit withdrawal from these sources at times when water levels or flows fall below the established minimums.
11. Water conservation shall be practiced by the facility operator to increase the efficiency of transport, application and use, to decrease waste and to minimize runoff from the property. At such time as the District adopts specific conservation criteria for the facility's water use classification, the facility operator will be subject to such criteria upon notice and after a reasonable period for compliance.
12. The following points, District Withdrawal No(s). 1,2 and supply from the regional waste water treatment plant, shall be equipped with totalizing flow meters or other flow measuring devices as approved in writing by the Director, Resource Regulation Department. Such devices shall have and maintain an accuracy within five percent (5%) of the actual flow. Those designated withdrawal points not equipped with such devices on the date the consumptive use is authorized shall be so equipped within one hundred twenty (120) days of the authorization date or upon completion of construction of

the withdrawal facility, unless an extension is approved in writing by District staff.

13. Total flow from each metered source shall be recorded on a monthly basis and reported to the District on District forms on or before the tenth (10th) day of the following month.

Reports shall be addressed to:

Permits Data Collection
Processing and Records Section
Southwest Florida Water Management District
2379 Broad Street
Brooksville, Florida 34609-6899

14. Water quality samples shall be collected and analyzed as indicated in the table below. Reports of the analyses shall be submitted to the District (on District forms) on or before the tenth (10th) day of the following month. The parameters and frequency of sampling and analysis may be modified by District staff as necessary to ensure the protection of the resource.

<u>District W/D No(s).</u>	<u>Parameters</u>	<u>Sampling Frequency</u>
1 and 2	Chloride	Monthly
1 and 2	Sulfate	Monthly
1 and 2	Total Dissolved Solids	Monthly

Analyses shall be performed according to procedures outlined in the current edition of Standard Methods for the Examination of Water and Wastewater by American Public Health Association-American Water Works Association-Water Pollution Control Federation or Methods for Chemical Analyses of Water and Wastes by the United States Environmental Protection Agency.

Reports shall be addressed to:

Permits Data Collection
Processing and Records Section
Southwest Florida Water Management District
2379 Broad Street
Brooksville, Florida 34609-6899

II. BACKGROUND

- | | |
|-------------------------------|--------------------------------------------------------------|
| A. Applicant: | Pasco County, Florida Solid Waste Resource Recovery Facility |
| B. Application Received Date: | December 4, 1987 |
| C. Application Complete: | January 28, 1988 |
| D. Type of Water Use: | Power Generation |

E. Location of Property: Pasco County, on Hayes road 2 miles north of State Road 52 approximately 11 miles northeast of New Port Richey (see location map).

F. Property Description: 750.6 Acres Owned

G. Sources:

Well(s)		District		Diameter		Total Depth / Casing Depth		Use(s)**	
		W/D No.		(inches)		(feet)			
		1(P)		10		250 / UNK		IN	
		2(P)		4		100 / UNK		IN	

(P) denotes a proposed source

**AG=Agricultural, PS=Public Supply, IN=Industrial, AUG=Augmentation

H. Consumptive Use/Acre Total: 936 gpd

III. EVALUATION

A. WATER USE

The requested average day withdrawal is 940,000 gpd. The evaluation is based upon the assumption that all water needs (cooling, process and potable) will be supplied by the two on-site wells without the use of waste water treatment plant effluent. The recommended average day withdrawal, 720,000 gpd, is derived from the total plant water balance of 500 gpm to which the applicant's engineer agrees. The recommended maximum day withdrawal, 1,150,000 gpd, is based upon a pump capacity of 800 gpm. The consumptive use is based upon the total plant water balance of 488 gpm consumptively used.

B. HYDROLOGY

The Floridan aquifer parameters for the area are:

Transmissivity = 40,000 Ft²/day
Leakance = 0.0005 day⁻¹

Data Source: Leggette, Brashears and Graham, Inc., June, 1978.

C. MODELING

The Jacob/Hantush analytical model was used to predict drawdown in the potentiometric surface. Based on the proposed average quantity at steady-state conditions, predicted drawdown is less than two (2) feet at all property boundaries.

D. RULE CRITERIA

The facilities meet all permitting criteria of Rule 40D-2.301, F.A.C.

IV. REQUEST(S) FOR PROPOSED AGENCY ACTION

No request(s) for notice have been received at the District, to date, after the published notice of this application.

V. REFERENCES

Leggette, Brashears and Graham, Inc., June, 1978, Development and Testing Program - Phase I, Cross Bar Ranch Wellfield, Pasco County, Florida, Status Report (SWFWMD CUP No. 204290).

VI. VISUAL DISPLAYS

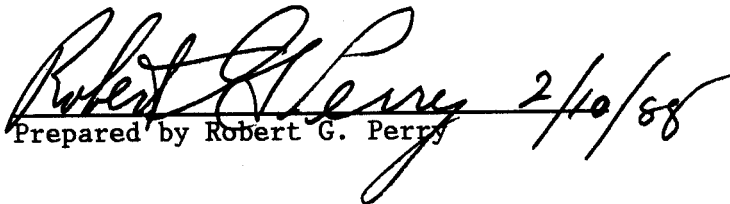
Location Map

VII. RECOMMENDATION

Forwarding of this report to the Florida Department of Environmental Regulation and approval by the Electrical Power Plant Siting Board of the consumptive use described subject to the proposed conditions herein.

VIII. PROPOSED PERMIT

A permit is not applicable as the proposed facility is covered under the Electrical Power Plant Siting Act, Sections 403.501 through 403.519, F.S., and Chapter 17-17, F.A.C.


Prepared by Robert G. Perry 2/10/88

Surface Water Permitting Staff Report

Project Name: Pasco County Resource Recovery Facility
File No.: 402861
Permitting Division: Brooksville
Evaluator(s): Michael J. Shostak/Dana L. West

I. BACKGROUND

A. Applicant: Ann Hildebrand, Chairman, Pasco County Board of County Commissioners
B. Land Use: Solid Waste Disposal
C. Location: Pasco County; Hays Road, 2.5 miles north of S.R. 52, Sections 24, 25 & 26, Township 24S, Range 17E
D. Date Received: December 4, 1987
E. Date Completed: January 27, 1988

II. SUMMARY

This application is for a power plant siting certification of a Surface Water Management System to serve a proposed 29 MW capacity, mass-burn resource recovery facility and a Class I Landfill for disposal of ash from this facility, as well as unprocessed Class I waste. The total land area owned by Pasco County for this project is 751 acres, 307.7 acres of which will be occupied by the resource recovery facility, the landfill/ashfill area, and surface water management facilities. The site is located in northwest Pasco County on Hays Road, approximately 2.5 miles north of State Highway 52.

The project will consist of the construction of the 52.1 acre resource recovery facility and the 207.8 acre landfill/ashfill area. Four (4) detention ponds with a total area of 47.8 acres have been designed to attenuate the post-development peak discharge rate of runoff from a total of 351.3 acres, which includes 43.6 acres of contributing off-site area. The project engineer used a 25 year-24 hour rainfall event of 9.3 inches to calculate both existing and post-development peak discharge rates. To satisfy water quality requirements of Chapter 17-25, F.A.C., the volume of stormwater runoff from the first one-inch of rainfall is retained in the ponds and infiltrated within 72 hours. Construction drawings, calculations, and other information have been submitted to show that the proposed development is in compliance with Chapters 40D-4 and 17-25, F.A.C. Approximately 16.25 acres of isolated wetlands exist within the project area. Project construction will incur no wetland impacts. No objections to this project have been received to date at the District office.

III. RECOMMENDATION

 X Approval

 Denial

STAFF REPORT
SURFACE WATER PERMITTING

File No. 402861
Power Plant Siting Certification
Pasco County Resource Recovery Facility

I. ABSTRACT

This application is for a power plant siting certification of a Surface Water Management System to serve a proposed 29 MW capacity, mass-burn resource recovery facility and a Class I Landfill for disposal of ash from this facility, as well as unprocessed Class I waste. The total land area owned by Pasco County for this project is 751 acres, 307.7 acres of which will be occupied by the resource recovery facility, the landfill/ashfill area, and surface water management facilities. The site is located in northwest Pasco County on Hays Road, approximately 2.5 miles north of State Highway 52.

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II. BACKGROUND

- | | |
|-------------------------------|----------------------------------------------------------------------------|
| A. Applicant: | Ann Hildebrand, Chairman, Pasco
County Board of County
Commissioners |
| B. Date application received: | December 4, 1987 |
| C. Date application complete: | January 27, 1988 |
| D. Type of land use: | Solid Waste Disposal |

E. Location of property:

Pasco County; Hays Road, 2.5 miles north of S.R. 52, Sections 24, 25 & 26, Township 24S, Range 17E

III. EXISTING ADJACENT FACILITIES

The project site encompasses primarily a pine plantation with several isolated wetlands. There are no buildings on the site at the present time. Existing topography exhibits a drainage basin divide that generally runs east-west through the central portion of the site. Little surface runoff leaves the site due to the presence of very porous sandy soils and the location of the wetland depressional areas.

Adjoining properties east and west of the site consist primarily of vacant grassland and small cattle farms. A portion of the west boundary abuts the county-owned site for a proposed Class III landfill which is to be permitted separately. Adjoining properties to the north and south are rural areas containing pockets of low density, residential areas. Properties to the southeast were once pine plantations. Florida Power Corporation's Hudson Substation occupies 6.2 acres of land abutting the south property line and the power line transmission right-of-way which traverses the site.

IV. PROPOSED FACILITIES

The proposed development will occupy 307.7 of the total 751 acres, or about 41 percent of the total land area. For design purposes and proposed phasing of the project, the developed area was divided into four drainage basins (see Exhibit "B"). Basins 1, 2, and 3 consist of the landfill/ashfill area and the respective detention ponds only. Runoff from each of these three basins will flow through grassed swales beginning at the base of the landfill/ashfill slope, under a perimeter road through culverts, and to a detention pond for storage and treatment. Basin 4 consists of three sub-basins. Sub-basin 41 consists of the landfill/ashfill area only. Runoff from this sub-basin will also flow through a grassed swale, then under a perimeter road through culverts to detention pond 4. Sub-basin 42 consists of the resource recovery site itself and contributing off-site inflow from 43.6 acres. Runoff from this sub-basin will enter one of two grassed swales and flow through culverts to detention pond 4. The final design of the resource recovery facility itself is conceptual at this time and will be performed by the contractor or his engineer at a future date. As the exact amount of impervious surface is unknown at this time, it is not anticipated to be any greater than 80 percent. Therefore, a weighted SCS curve number of 63.81 has been calculated for sub-basin 42 to more closely approximate the actual post development condition. It is also assumed that an inlet and pipe collection system will be utilized in this area which should reduce the T_c value to an assumed approximation of 15 min. The proposed development will not alter existing runoff flow patterns in the area.

V. EVALUATION

A. Water Quantity

1. Allowable Discharge

Pre-development, allowable discharge rates were calculated for a 25-year, 24-hour storm event of 9.3 inches. The SCS Unit Hydrograph Package was used to model each basin area in both the pre- and post-development conditions. The Interconnected Pond Routing program was utilized to evaluate post-development flow patterns and rates of discharge (refer to Table 1 for details). Detention Ponds 1 and 2 provide enough capacity to hold the entire volume of runoff resulting from design storm event. Detention ponds 3 and 4 will discharge at a rate substantially lower than in the pre-developed condition, maintaining existing runoff patterns.

2. Flood Protection

The vast majority of the site lies in Zone C of the applicable Federal Flood Insurance Rate Map. A small portion of the southwest area of the site lies in Zone A. The design of Retention Pond 4 was modified to avoid an isolated wetland, which is part of the 100-year flood plain. Hence, no net encroachment due to construction occurs in the 100-year flood plain. This 100-year flood plain also encompassed some of the isolated wetlands within and west of the Florida Power Corporation easement. No construction activities will occur in this area either.

B. Water Quality

The Surface Water Management System has been designed to also meet the requirements of Chapter 17-25, F.A.C. Submitted calculations indicate that the runoff resulting from the first one inch of rainfall will infiltrate within 72 hours.

C. Environmental Considerations

Approximately 16.25 acres of isolated wetlands exist on the 751 acre project site. Project construction is confined to 307.7 acres of this area. Only one of the wetlands, approximately 2.40 acres in size, lies within this construction boundary. A wetland delineation line was verified by District staff. The design of the project has been modified to avoid wetland impacts. A fifteen foot buffer zone has been designated around the wetland and stacked hay bales will be located above this zone to minimize impacts of turbidity and erosion during construction. (See Table 2).

D. Land Use Information

The Pasco County Zoning Administration has determined that the selected site for the resource recovery facility and landfill/ashfill is exempt from the provisions of the county's zoning ordinance. The Pasco County Planning Director has determined that the proposed facility is consistent with the goals and objectives of the Pasco County Comprehensive Land Use Plan.

E. Utilities

All plant process cooling water will be drawn from the proposed Hudson Sub-regional Wastewater Treatment Plant which will be located about six (6) miles to the west. This plant is designed and will be constructed to Class 1 reliability standards. The County, in its agreement with the selected resource recovery vendor, will be responsible for providing wastewater disposal. Treated wastewater effluent will be used for plant cooling water, ash quench makeup water, the air pollution control system, and for dust control over the landfill/ashfill area. All site effluent will be returned to the wastewater treatment plant. A well system will be provided on site to provide boiler water makeup and site potable water. A thorough description of this system is provided in the consumptive use staff report.

F. Systems Operations

The maintenance and operation of the proposed Surface Water Management System will be by the Pasco County Utilities Division, as certified by Mr. George Ellsworth, Resource Recovery Manager.

VI. RECOMMENDATION

Staff recommends approval of this application subject to the attached special conditions.

VII. SPECIAL CONDITIONS

1. Except as authorized by this recommendation, any further land development, wetlands disturbance or other construction within the total land area of this site will require additional approval in accordance with Chapters 40D-4 and 17-25, F.A.C.
2. The applicant shall assure that erosion and sediment control measures required by Rule 17-25.025(7) shall be effectively implemented continuously from beginning of project construction until completion. Project detention/retention ponds and discharge control structures which are to be constructed as part of the project should be initially built and maintained continuously during project construction to avoid adverse impact to receiving waters or off site.
3. Any existing wells in the path of construction shall be properly plugged and abandoned by a licensed water well contractor in accordance with Chapter 40D-3 and Rule 17-21.10(4), F.A.C.

4. All retention/detention pond side slopes, shall be sodded, and staked as necessary, to prevent erosion.
5. By issuance of this recommendation, the District, its employees and representatives assume no responsibility and/or liability in regard to either the design, construction or performance of the proposed facilities.
6. Prior to initiating construction, the final resource recovery site plan is required to be submitted to the District for review of compliance with the conditions set forth in this recommendation and in accordance with Chapters 40D-4 and 17-25, F.A.C.

VIII. VISUAL DISPLAY(S)

1. Exhibit "A" - Location Map
2. Exhibit "B" - Drainage Basin Boundaries
3. Table 1 - Discharge Rates

Environmental Scientist: _____

Dana L. West
Dana L. West

Application Reviewed By: _____

Michael J. Shostak
Michael J. Shostak, E.I.

Report Received By: _____

Date: 2/3/88

WOJCIECH M. MROZ, Fla. P.E. No. 38749
Brooksville Permitting Division
Resource Regulation Department

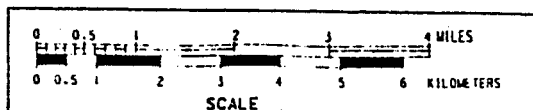
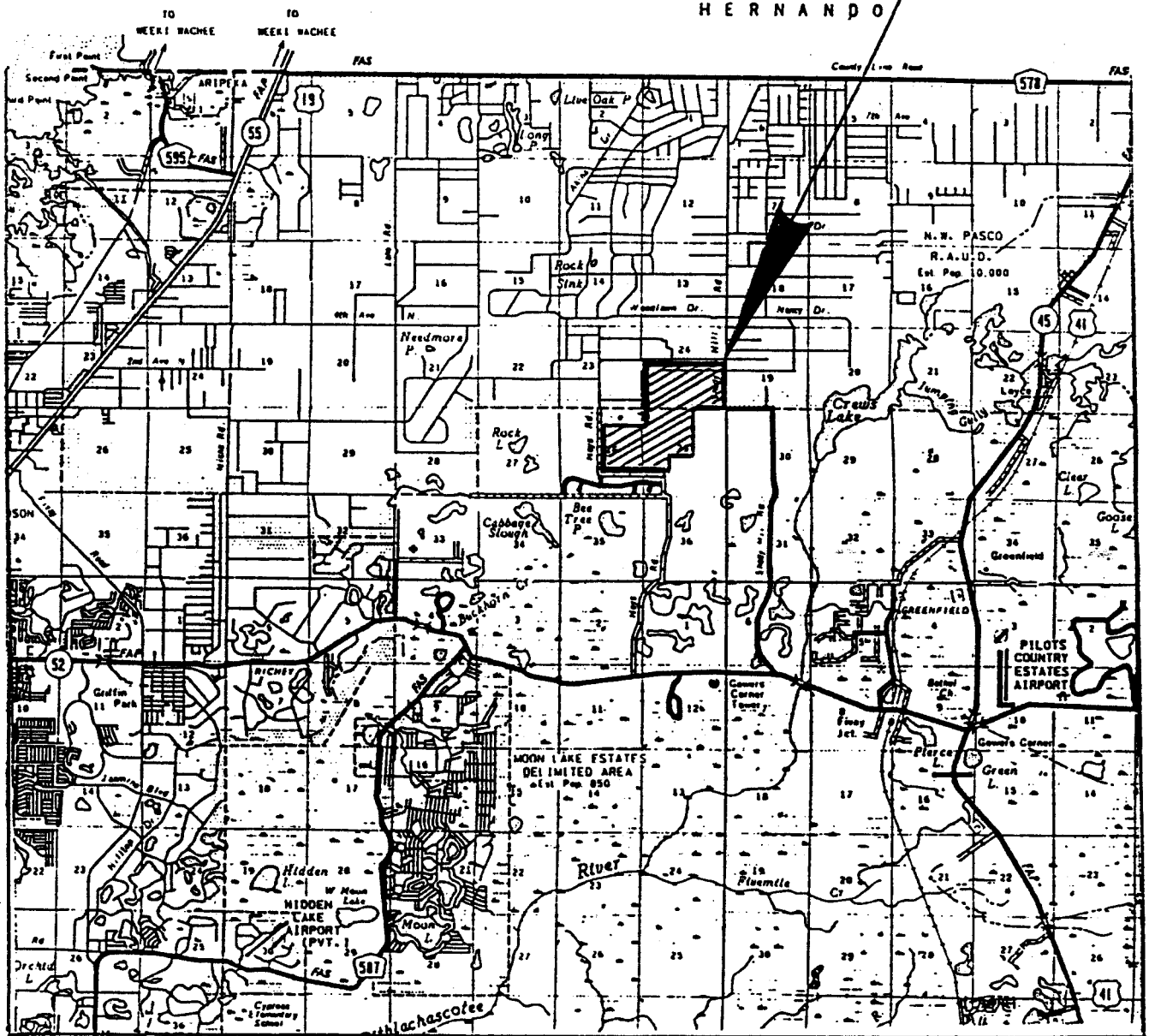
TABLE No. 2 WETLANDS REPORT

Project Name:	Pasco County Resource Recovery Facility
File No.:	402861
County:	Pasco
Proposed Land Use:	Municipal
Total Project Acreage:	307.7
Total Wetland Acreage:	16.25
Wetland Acreage Preserved:	16.25
Wetland Acreage Temporarily Disturbed:	0.00
Wetland Acreage Permanently Destroyed:	0.00
Wetland Acreage Created (Mitigation):	0.00
Wetland Acreage Net Change:	0.00
Other Compensation Acreage:	0.00

REMARKS: Isolated

RESOURCE RECOVERY FACILITY

PROJECT LOCATION

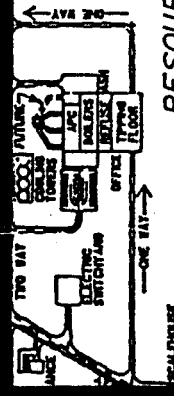


GENERAL HIGHWAY MAP
PASCO COUNTY
FLORIDA

Pasco County Resource Recovery Program Drainage Basin Delineations

SUB-BASIN 42

**OFF-SITE FLOW
43.60 AC.**



CLASS III
LANDFILL

295, WIDE FLORIDA-POWER COMPANY.

WELL SYSTEM

HAYES ROAD

HAYES ROAD

PASCO COUNTY RESOURCE RECOVERY FACILITY

TABLE 1

Discharge Rates (25 Year-24 Hour Storm)

<u>Basin Number</u>	<u>Basin Area</u>	<u>Peak Pre-Development Discharge (CFS)</u>	<u>Peak Post-Development Discharge (CFS)</u>
1	66.0	69.8	0
2	46.6	59.4	0
3	53.0	56.1	7.1
4	138.0	135.3	2.0

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Wetland Acreage Created (Mitigation):	0.00
Wetland Acreage Net Change:	0.00
Other Compensation Acreage:	0.00

REMARKS: Isolated

PASCO COUNTY RESOURCE RECOVERY FACILITY
AMENDED ASHFILL/LANDFILL EVALUATION
PASCO COUNTY, FLORIDA

As mandated by Section 403.707(4), Florida Statutes, when an application for a Class I or Class II solid waste disposal permit is made, the water management district within which the project is located shall prepare a report as to the impact on the water resources of the area. This report has been prepared to comply with 403.707(4), Florida Statutes.

BACKGROUND

The site selected for the Pasco County Resource Recovery Facility is located on Hays Road in northwestern Pasco County. The ashfill/landfill is an integral part of the resource recovery facility. The proposal is a solid waste disposal project consisting of facilities for disposing of processible (combustible) wastes, nonprocessible (noncombustible) wastes, by-passed waste (when the resource recovery plant has an outage or waste received is in excess of capacity), and ash residue from the mass-burn facility.

SITE CHARACTERISTICS

The proposed site is not an optimal area for the location of a sanitary landfill for the following reasons:

1. The Floridan Aquifer at the site is very poorly confined, so any contaminants which escape from a landfill would be able to move relatively quickly through the surface sediments to the limestone below. In western Pasco County, the only appreciable upper confinement of the Floridan Aquifer is provided by a thin (5 to 15 feet) drape of residual clay overlying the limestone. The clay is discontinuous, being broken by differential subsidence which occurs as the underlying limestone slowly dissolves, and perforated by sinkholes (which are continuing processes). The discontinuous nature of the clay confining unit accounts for the fact that a continuous water-table aquifer does not exist in west Pasco County.
2. The area is internally drained and has been recognized as a recharge area to the Floridan Aquifer, the major source of public and private water supply for the area.
3. The Floridan Aquifer beneath the area is of relatively high transmissivity, having conduit and fracture flow. These characteristics make recovery of contaminated water difficult once it has entered the aquifer.

Pasco County Resource Recovery Facility
Amended Ashfill/Landfill Evaluation

4. The site is four to five miles, at the closest point, south of the Spring Hill pumping center which is projected to double withdrawals in the next six years to 10,000,000 gallons per day (gpd). The potentiometric gradient in the area indicates that water recharged at the site flows to the northwest through west Pasco County, through the southwestern corner of Hernando County and beneath the United States Highway 19 corridor before discharging to the Gulf of Mexico.
5. The site is seven to eight miles, at the closest point, north of the Starkey Wellfield which is presently permitted to withdraw 8,000,000 gpd, and has applied for a permit to withdraw 15,000,000 gpd. However, the potentiometric gradient at the site is away from the Starkey Wellfield.

MITIGATING FACTORS

Two factors serve to mitigate the concerns about the suitability of the site:

1. The proposed ashfill/landfill is a state-of-the-art, above-ground landfill with a double system of underdrains and liners to collect leachate and prevent leachate migration. The waste is to be contained in sixteen segregated cells. The primary underdrain system is designed to collect leachate from the base of each waste cell for handling. The secondary underdrain system serves as backup to the primary system and is to be monitored to detect leakage from the primary liner of any waste cell. The landfill is designed to contain all leachate and not leak into the underlying aquifer.
2. The ashfill/landfill is intended to receive largely ash residue from the mass-burn facility and nonprocessible (noncombustible) wastes. These materials will contain greatly reduced quantities of volatile and organic materials compared to unprocessed solid waste. This will result in a leachate which is less likely to cause degradation and failure of liners and underdrains, and in turn, reduce the risk of contamination of the underlying aquifer.

These two aspects of the proposed facility are greatly appreciated and respected by District staff. The development of resource recovery facilities is welcomed as a replacement for the traditional landfill disposal of unprocessed solid wastes.

Pasco County Resource Recovery Facility
Amended Ashfill/Landfill Evaluation

RECOMMENDATIONS

District staff does not share the confidence of the designers that a "leak-proof" landfill can be constructed in west Pasco County, given the geologic characteristics of the area. It is not known what effect the loading of the land surface beneath the landfill will have on the stability of potential or plugged sinkholes. It should be assumed that the development of sinkholes and differential subsidence will continue in the area of the landfill, and that these processes, along with potential imperfections of construction, may allow some leakage of leachate from the landfill. Therefore, staff recommendations focus on limiting the types of wastes disposed of in the proposed landfill to those types which pose the least threat to the ground-water resources of the region in the event of leakage of the landfill.

The disposal of ash residue from the mass burn facility is regarded as much less threatening to the water resources of the region than unprocessed solid waste. The following recommendations are made for the operation of the facility in such a way as to eliminate or limit the disposal of unprocessed solid waste and hazardous waste at the site, and to require advance development of contingency plans for dealing effectively with landfill leakage.

1. It is recommended that disposal of unprocessed waste at the ashfill/landfill site before the resource recovery facility is operational be minimized. Accordingly, it is recommended that disposal of unprocessed waste at the ashfill/landfill site be prohibited until the existing East Pasco County Sanitary Landfill site is filled to maximum capacity permittable by the Florida Department of Environmental Regulation, subject to the use limitations contained in the East Pasco County Sanitary Landfill site lease, or until the resource recovery facility is operational, whichever occurs first.
2. It is recommended that the disposal of by-passed unprocessed waste at the ashfill/landfill site be minimized when the resource recovery facility is not fully operational or when capacity of the facility is exceeded, in accordance with the County's plans for operation contained in the application. It is further recommended that the County be encouraged to initiate future construction of additional capacity of the resource recovery facility as early as possible in order to avoid processible waste received exceeding capacity of the facility and to avoid disposal of unprocessed waste in the ashfill/landfill.

Pasco County Resource Recovery Facility
Amended Ashfill/Landfill Evaluation

3. It is recommended that segregation of ash residue in cells separate from unprocessed waste (as proposed) be encouraged to better insure that the ash remains in an alkaline state. An alkaline state is desirable for the ash, as the heavy metal ions are much less mobile under alkaline conditions.
4. It is recommended that the secondary underdrain system be monitored weekly for the presence of leachate which would indicate leakage from a primary liner. It is also recommended that a contingency plan be developed for actions to be taken in the event that failure of a liner or underdrain is detected. The plan should include:
 - a. Methods for determining which cell is leaking,
 - b. Plans for immediate expansion of the monitor well network downgradient of the problematic cell for early detection of leachate in the aquifer if the secondary liner fails,
 - c. Plans for repair of a leaking waste cell, and
 - d. Plans for restoration of the aquifer if aquifer contamination occurs.
5. It is recommended that the County be encouraged to collect and segregate appliances and machines containing or utilizing coolants, greases, or oils for recycling by a metals processor as proposed by the County in order to minimize their disposal in the ashfill/landfill.

It is recommended that these conditions be incorporated by the Department of Environmental Regulation and the Electrical Power Plant Siting Board in the site certification for operation of the facility.

REFERENCES

Camp, Dresser, and McKee, Inc., November 1987, Pasco County, Florida Resource Recovery Facility Application for Power Plant Site Certification, Volume IV - Landfill/Ashfill.

Cherry, R. N., J. W. Stewart, and J. A. Mann, 1970, General Hydrology of the Middle Gulf Area, Florida: Florida Geological Survey Report of Investigations 56.


Parker, Garald G., April 1982, Statement Regarding Use of Pasco County Site 5 as a Potential for a Landfill.

Pasco County Resource Recovery Facility
Amended Ashfill/Landfill Evaluation

Sinclair, William C., J. W. Stewart, R. L. Knutilla, A. E. Gilboy, and R. L. Miller, 1985, Types, Features, and Occurrence of Sinkholes in the Karst of West-Central Florida: U. S. Geological Survey Water Resources Investigations Report 85-4126.

Thaggard, Mark, and Robert G. Perry, August 1987, Staff Evaluation of CUP 204290 (Cross Bar Wellfield), Southwest Florida Water Management District.

Wetterhall, W. S., 1964, Geohydrologic Reconnaissance of Pasco and Southern Hernando Counties, Florida: Florida Geological Survey Report of Investigations 34.

 FEB 23, 1988
John W. Parker, Hydrologist
Consumptive Use Permitting Supervisor
Brooksville Permitting Division
Resource Regulation Department
Southwest Florida Water Management District

Final Determination

Pasco County Resource Recovery Facility
Pasco County, Florida

Permit No. PSD-FL-127

Florida Department of Environmental Regulation
Bureau of Air Quality Management
Central Air Permitting

September 19, 1988

Final Determination

Pasco County's PSD permit application (part of the Power Plant Siting application) for a resource recovery facility in Pasco County, Florida, has been reviewed by the Bureau of Air Quality Management. Comments received concerning the proposed PSD permit are addressed in a chronological order.

I. Comments received from David Dee, on behalf of Pasco County (see Attachment 2), are addressed below.

1. The correction of the latitude/longitude of the facility is accepted as an amendment to the PSD application (Volume III), and the change will be reflected in the permit.
2. The request to allow a charging rate of upto 115% of the design capacity for the combustors cannot be granted because the resultant potential emissions would exceed the maximum emissions considered in the project evaluation. However, the Department can allow a charging rate of upto 114% of design capacity, at which level the potential emissions would match the maximum emissions evaluated for the project. Specific Condition (SC) No. 3 will be amended to reflect this.
3. SC No. 2.b. will be restated to distinguish between control of SO₂ emissions and control of other acid gases (namely HCl, H₂SO₄ mist, and fluorides).
4. The particulate matter emission limitation will remain 0.0150 gr/dscf, as this is consistent with recently issued PSD permits for similar facilities.
5. In SC No. 3, DER will change the emission limit for mercury to 0.112 lb/hr, as requested. The emission limits for SO₂, CO, and lead, will also be changed to 31.4, 54.7, and 0.098 lb/hr, respectively, to maintain consistency in the calculations.
6. Compliance testing at + 10% of the rated 140 MMBTU/hr heat input rate is acceptable to DER and shall be incorporated into Specific Condition No. 4.e.
7. The O₂ CEM has been required as an indicator of good combustion for all recently permitted similar facilities. SC No. 5 will remain unchanged.
8. Monitoring of the furnace exit gas temperature (FEGT) at the economizer outlet, as proposed by Pasco County, is not acceptable because EPA requires the FEGT monitoring to be conducted as near the over-fire air fully-mixed zone in the

furnace as possible. The difference between the FEGT and the flue gas temperature at the economizer outlet, and the number of variables affecting that temperature difference, would be too great to make a reasonably accurate correlation as required.

II. In consideration of comments from the Central Air Permitting Staff, the following changes will be made in the proposed permit:

1. The reference to "design" will be deleted from SC Nos. 1.c., 2.b., and 2.c., to emphasize the performance of the facility.
2. Compliance test method 25A will be deleted from SC No. 4 as it may not be appropriate for the testing of VOC emissions from this facility.
3. SC Nos. 7.a., 7.b. and 8, will be standardized to reflect the wording used in other permits issued by DER for similar projects.

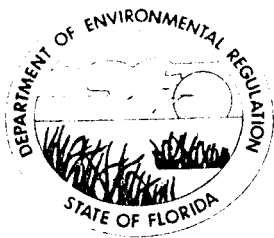
III. In consideration of the comments from the Southwest District office received by telephone on September 8, the following changes will be made in the proposed permit.

1. The project description on the first page will mention the design heat input rate of the combustors.
2. A requirement for the notification to DER of the air pollution control equipment and combustor to be purchased will be added to SC No. 2.
3. A SC will be added stating that the facility shall be operated in a manner which would preclude objectionable odors.
4. A SC will be added stating that reasonable precautions shall be taken to prevent/control unconfined emissions.
5. SC No. 7 will include a specific reference to the Southwest District office.
6. A requirement will be added to SC No. 4 requiring the permittee to submit to DER the pertinent operating parameters of the control devices, which would indicate proper operation.
7. A requirement will be added to SC No. 4 for the prior approval of DER for the location of the stack sampling platform.

IV. In consideration of comments dated September 8, 1988, from EPA Region IV (see Attachment 3), the following changes will be made to the proposed permit:

1. Emission limits for CO and SO₂ will be amended by including time averages as requested. However, the 24-hr limit for SO₂ does not seem practical.
2. Although the 0.643 lb/MM BTU nitrogen oxides (NO_x) emission limitation exceeds the values for other municipal waste combustors (MWCs) in Florida, the Bureau believes that this level is representative of the NO_x emissions that are emitted from modern MWCs. Modern MWCs are designed to achieve high combustion efficiencies which require high operating temperatures resulting in higher than one time anticipated NO_x emissions. This is evident from recent permitting actions in which the original permitted NO_x emissions limitations for MWCs in Oregon, Oklahoma, and Florida were modified to reflect the actual emissions tested.
3. The compliance testing requirements will be amended to reflect that the 1987 version of 40 CFR 60 and 61 is quoted as reference. The specific mention of the number of test runs, sample volumes, and sampling times will be incorporated into future permits after further clarification from EPA.
4. Public hearings were held both during the day and at night where the issues of air toxics and unregulated pollutants were discussed.
5. The decision for not choosing de-NO_x controls as BACT for NO_x was primarily based on economics. The economic analysis of using catalytic reduction indicated that the cost would be more than twice the cost guideline that is used for BACT purposes. In addition, the use of de-NO_x control has not been extensive to the point of being considered well proven technology for MWCs. In the United States, only one facility (Commerce, California) has operating experience using de-NO_x control (approximately 1 year at the time of the Pasco County Facility permit review). Because de-NO_x control operation experience is limited, the long term cost of operating this technology is uncertain and estimates have indicated that the actual cost may be greater than those submitted for the Pasco County Facility.
6. DER does not intend to delete the requirement for an O₂ CEM from the proposed permit.
7. DER will clarify that the required temperature monitor should be placed as close to the fully mixed zone as possible.

The final action of the Department will be to issue the permit as proposed with the above mentioned amendments.



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor

Dale Twachtman, Secretary

John Slaughter, Assistant Secretary

PERMITTEE:

Pasco County
7536 State Street
New Port Richey, FL 33553

Permit Number: PSD-FL-127

County: Pasco

Latitude/Longitude: 28° 22' 05"N
82° 33' 30"W

Project: Pasco County Resource
Recovery Facility Units 1, 2, and 3

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawings, plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

For the construction of a municipal solid waste (MSW) resource recovery facility with an ultimate capacity of 1200 TPD (tons per day), generating 29 MW of electricity. Initially, three combustors will be installed each with a design capacity of 350 TPD (total of 1050 TPD for the facility). The design rated heat input capacity of each unit will be 140 MMBTU/hr. The normal operating range of each unit will be between 80% and a maximum of 114% of the design rated capacity. Acid gases and particulates will be controlled by dry scrubber and baghouse technology. DER will be notified of the final choice of control/combustor equipment. The power plant site certification number for this project is PA 87-23.

Construction shall be in accordance with the attached permit application and additional information except as otherwise noted in the Specific Conditions.

Attachments are as follows:

1. Power Plant Site Certification package PA 87-23 and its associated attachments, dated April 4, 1988.
2. Letter from David Dee, for Pasco County, of August 10, 1988.
3. Letter from EPA dated September 8, 1988.
4. DER's Final Determination dated September 14, 1988.

PERMITTEE: Pasco County

Permit Number: PSD-FL-127

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or 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. This permit does not constitute a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

PERMITTEE: Pasco County

Permit Number: PSD-FL-127

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

- a. Having access to and copying any records that must be kept under the conditions of the permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

- a. a description of and cause of non-compliance; 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 noncompliance.

PERMITTEE: Pasco County

Permit Number: PSD-FL-127

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the Department, may be used by the Department as evidence in any enforcement case arising under the Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

- (x) Determination of Best Available Control Technology (BACT)
- (x) Determination of Prevention of Significant Deterioration (PSD)
- (x) Compliance with New Source Performance Standards.

14. The permittee shall comply with the following monitoring and record keeping requirements:

- a. Upon request, the permittee shall furnish all records and plans required under Department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

PERMITTEE: Pasco County

Permit Number: PSD-FL-127

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. Municipal Solid Waste Combustor

- a. Each of the three municipal waste combustors (MWC) shall have a design rated capacity of 350 tons municipal solid waste (MSW) per day, 140 million Btu heat input per hour, assuming a heating value of 4,800 Btu per pound.
- b. The maximum individual MWC's throughput shall not exceed 114% of either the design MSW charging rate of 350 TPD or the heat input rate of 140 MMBTU/hr.

PERMITTEE: Pasco County

Permit Number: PSD-FL-127

SPECIFIC CONDITIONS:

- c. The furnace mean temperature at the fully mixed zone of the combustor shall not be less than 1,800°F.
 - d. The normal operating range of the MWC shall be 80% to a maximum of 114% of design rated capacity.
 - e. The MWC shall be fueled with municipal solid waste only. Other wastes shall not be burned without specific prior written approval of Florida DER.
 - f. Auxiliary fuel burner(s) shall be fueled only with natural gas. If the annual capacity factor for gas is greater than 10%, as determined by 40 CFR 60.43b(d), the facility shall be subject to 40 CFR 60.44b, standards for nitrogen oxides.
 - g. Auxiliary fuel burner(s) shall be used at start up during the introduction of MSW fuel until design furnace gas temperature is achieved.
 - h. The facility may operate continuously (8760 hrs/yr).
2. Air Pollution Control Equipment Design
- a. Each MWC shall be equipped with a baghouse for particulate emission control.
 - b. Each MWC shall be equipped with a dry scrubber for acid gas control, to remove at least 70% of SO₂ and 90% of other acid gases (namely HCL, H₂SO₄ mist, and fluorides).
 - c. The acid gas emission control system shall be capable of cooling flue gases to an average temperature not exceeding 300°F (3-hour rolling average).
 - d. DER shall be notified of the control devices chosen.
3. Flue gas emissions from each unit shall not exceed the following:
- a. Particulate: 0.0150 grains/dscf corrected to 12% CO₂
 - b. Sulfur Dioxide: 104 ppm_{dv} corrected to 7% O₂ 3-hour (rolling) average, and 60 ppm_{dv} corrected to 7% O₂ 6-hour rolling average;

PERMITTEE: Pasco County

Permit Number: PSD-FL-127

SPECIFIC CONDITIONS:

or

70% reduction of uncontrolled SO₂ emissions, 6-hour rolling average. Not to exceed 100 ppmdv corrected to 7% O₂, 6-hr rolling average.

- c. Nitrogen Oxides: 0.643 lb/MMBtu heat input.
- d. Carbon Monoxide: 400 ppmdv corrected to 7% O₂, 1-hr average, and 100 ppmdv corrected to 7% O₂, 8-hr rolling average.
- e. Volatile Organic Compounds: 0.021 lb/MMBtu heat input
- f. Lead: 0.0007 lb/MMBtu heat input
- g. Fluoride: 0.008 lb/MMBtu heat input
- h. Beryllium: 1.35×10^{-7} lb/MMBtu heat input
- i. Mercury: 0.0008 lb/MMBtu heat input
- j. Visible Emissions: Opacity of MWC emissions shall not exceed 15% opacity (6-min. average), except for one 6-min. period per hour of not more than 20% opacity. Excess emissions resulting from startup, shut down, or malfunction shall be permitted provided that best operational practices to minimize emissions are adhered to, and the duration of excess emissions are minimized.

For each pollutant for which a continuous emissions monitoring system is required in Condition No. 5, the emission averaging time specified above shall be used to establish operating limits and reportable excess emissions.

PERMITTEE: Pasco County

Permit Number: PSD-FL-127

SPECIFIC CONDITIONS:

Compliance with the permit emission limits shall be determined by EPA reference test methods included in 40 CFR Parts 60 and 61, 1987 version, and listed in Condition No. 4 of this permit. Other DER approved methods may be used only after prior Departmental approval.

For the purpose of establishing specific increment consumption for TSP and SO₂ at the facility, an hourly emission rate shall be established for each pollutant at the time of performance testing using flue gas flow rates (corrected to 12% CO₂ or 7% O₂ at furnace capacity as appropriate) and the applicable concentration limits established above for TSP and SO₂. Projected emissions are listed below, based on 4800 Btu/lb heat content and 350 TPD MSW charging rate for each combustor (140 MMBTU/hr). Maximum emissions will be 14% above the tabulated values below and will occur at 114% of the design heat input rate.

Pollutant	lb/MMBtu Heat Input	Projected Emissions
		lb/hr 100%
Particulate	0.0322	4.5
Sulfur Dioxide	0.224	31.4
Nitrogen Oxides	0.643	90.0
Carbon Monoxide	0.098 ¹ , 0.391 ²	13.7 ¹ , 54.7 ²
Volatile Organics	0.021	2.9
Fluoride	0.008	1.1
Hydrogen Chloride	0.127	17.8
Sulfuric Acid Mist	0.035	5.0
Lead	7 x 10 ⁻⁴	0.098
Mercury	8 x 10 ⁻⁴	0.112
Beryllium	1.35 x 10 ⁻⁷	1.9 x 10 ⁻⁵
Arsenic	9.1 x 10 ⁻⁶	1.3 x 10 ⁻³

¹ 8-hr average

² 1-hr average

PERMITTEE: Pasco County

Permit Number: PSD-FL-127

SPECIFIC CONDITIONS:

The combustors are subject to 40 CFR Part 60, Subpart E, and Subpart Db, New Source Performance Standards (NSPS), except that where requirements within the permit are more restrictive, the requirements of the permit shall apply.

4. Compliance Tests

- a. Initial compliance tests for particulate matter, SO₂, nitrogen oxides, CO, VOC, lead, fluorides, mercury and beryllium shall be conducted in accordance with 40 CFR 60.8 (a), (b), (d), (e), and (f).
- b. Annual compliance test(s) for particulate matter and nitrogen oxides shall be performed.
- c. Compliance with the opacity standard shall be determined in accordance with 40 CFR 60.11(b) and (e).
- d. Compliance with the requirement for 70% control of sulfur dioxide emissions will be determined by using the test methods in Condition 4.f. below or a continuous emission monitoring system for SO₂ emissions, before and after the air pollution control equipment, which meets the requirements of Performance Specification 2 of 40 CFR 60, Appendix B.
- e. The compliance tests shall be conducted within $\pm 10\%$ of the design rated capacity for each permitted fuel.
- f. Prior DER approval shall be obtained for the location of the source sampling platform(s). The following test methods and procedures of 40 CFR Parts 60 and 61 (1987 version) or other DER approved methods with prior DER approval shall be used for compliance testing:
 - (1) Method 1 for selection of sample site and sample traverses.
 - (2) Method 2 for determining stack gas flow rate.
 - (3) Method 3 or 3A for gas analysis for calculation of percent O₂ and CO₂.
 - (4) Method 4 for determining stack gas moisture content to convert the flow rate from actual standard cubic feet to dry standard cubic feet.
 - 5) Method 5 or Method 17 for concentration of particulate matter.

PERMITTEE: Pasco County

Permit Number: PSD-FL-127

SPECIFIC CONDITIONS:

- (6) Method 9 for visible determination of the opacity of emissions as required in this permit in accordance with 40 CFR 60.11.
 - (7) Method 6, 6C, or 8 for concentration of SO₂.
 - (8) Method 7, 7A, 7B, 7C, 7D, or 7E for concentration of nitrogen oxides.
 - (9) Method 10 for determination of CO concentration.
 - (10) Method 12 for determination of lead concentration.
 - (11) Method 13B for determination of fluoride concentrations.
 - (12) Method 25 for determination of VOC concentration.
 - (13) Method 101A for determination of mercury emission rate.
 - (14) Method 104 for determination of beryllium emission rate.
- g. The permittee shall submit to DER a list of the pertinent operating parameters which indicate proper operation of the control equipment.

5. Continuous Emission Monitoring

Continuous emission monitors for opacity, oxygen, carbon monoxide, carbon dioxide, and sulfur dioxide shall be installed, calibrated, maintained and operated for each unit.

- a. Each continuous emission monitoring system (CEMS) shall meet performance specifications of 40 CFR 60, Appendix B. The SO₂ CEMS sample point shall be located downstream of control devices for each unit.
- b. CEMS data shall be recorded during periods of startup, shutdown and malfunction but shall be excluded from emission averaging calculations for CO, SO₂, and opacity.

PERMITTEE: Pasco County

Permit Number: PSD-FL-127

SPECIFIC CONDITIONS:

- c. A malfunction means any sudden and unavoidable failure of air pollution control equipment or process equipment to operate in a normal or usual manner. Failures that are caused entirely or in part by poor maintenance, careless operation, any other preventable upset condition, or preventable equipment breakdown shall not be considered malfunctions.
- d. The procedures under 40 CFR 60.13 shall be followed for installation, evaluation and operation of all CEMS.
- e. Opacity monitoring system data shall be reduced to 6-minute averages, based on 36 or more data points, and gaseous CEMS data shall be reduced to 1-hour averages, based on 4 or more data points, in accordance with 40 CFR 60.13(h).
- f. Average CO and SO₂ emission concentrations, corrected for O₂, shall be computed in accordance with the appropriate averaging time periods included in Condition No. 3.
- g. For purposes of reports required under this permit, excess emissions are defined as any calculated average emission concentration, as determined pursuant to Condition No. 5 herein, which exceeds the applicable emission limit in Condition No. 3.

6. Operations Monitoring

- a. Devices shall be installed to continuously monitor and record steam production, furnace exit gas temperature (FEGT) and flue gas temperature at the exit of the acid gas control equipment. A FEGT to combustion zone correlation shall be established to relate furnace temperature at the temperature monitor location (as close to fully mixed zone as possible) to furnace temperature in the overfire air fully mixed zone.
- b. The furnace heat load shall be maintained between 80% and 114% of the design rated capacity during normal operations. The lower limit may be extended provided compliance with the carbon monoxide emissions limit and the FEGT within this permit at the extended turndown rate are achieved.

7. Reporting

- a. A minimum of fifteen (15) days prior notification of compliance testing shall be given to the DER Southwest District Office.

PERMITTEE: Pasco County

Permit Number: PSD-FL-127

SPECIFIC CONDITIONS:

- b. The results of compliance test shall be submitted to the DER district office within 45 days after completion of the test.
- c. The owner or operator shall submit excess emission reports for any calendar quarter during which there are excess emissions from the facility. If there are no excess emissions during the calendar quarter, the owner or operator shall submit a report semiannually stating that no excess emissions occurred during the semiannual reporting period. The report shall include the following:
 - (1) The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factors used, and the date and time of commencement and completion of each period of excess emissions (60.7(c)(1)).
 - (2) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the furnace boiler system. The nature and cause of any malfunction (if known) and the corrective action taken or preventive measure adopted (60.7(c)(2)).
 - (3) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks, and the nature of the system repairs or adjustments (60.7(c)(3)).
 - (4) When no excess emissions have occurred or the continuous monitoring system has not been inoperative, repaired, or adjusted, such information shall be stated in the report (60.7(c)(4)).
 - (5) The owner or operator shall maintain a file of all measurements, including continuous monitoring systems performance evaluations; monitoring systems or monitoring device calibration; checks; adjustments and maintenance performed on these systems or devices; and, all other information required by this permit recorded in a permanent form suitable for inspection (60.7(d)).

PERMITTEE: Pasco County

Permit Number: PSD-FL-127

SPECIFIC CONDITIONS:

8. The construction shall reasonably conform to the plans and schedule submitted in the application. If the permittee is unable to complete construction on schedule, the Department must be notified in writing (Rule 17-2, F.A.C.).
9. Any change in the method of operation, fuels, equipment or operating hours shall be submitted for approval to DER's district office.
10. This facility shall be operated in such a manner so as to preclude objectionable odors pursuant to F.A.C. Rule 17-2.600(1).
11. All reasonable precautions shall be taken to prevent and control generation of unconfined emissions of particulate matter in accordance with F.A.C. Rule 17-2.610(3).
12. The permittee shall comply with all the applicable provisions of F.A.C. Chapter 17-2, 17-4, and 40 CFR 60 and 61.

Issued this 22 day of Sep, 1988

STATE OF FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION


Dale Twachtman, Secretary

ATTACHMENT 1

Available Upon Request.

ATTACHMENT 2

8-11-84
Tallahassee, FL

CARLTON, FIELDS, WARD, EMMANUEL, SMITH & CUTLER, P. A.

ATTORNEYS AT LAW

ONE HARBOUR PLACE
P. O. BOX 3239
TAMPA, FLORIDA 33601
(813) 223-7000

FIRSTSTATE TOWER
P. O. BOX 1171
ORLANDO, FLORIDA 32802
(407) 849-0300

HARBOURVIEW BUILDING
P. O. BOX 12426
PENSACOLA, FLORIDA 32562
(904) 434-0142

FIRST FLORIDA BANK BUILDING
P. O. DRAWER 190
TALLAHASSEE, FLORIDA 32302
(904) 224-1585

RECEIVED

PLEASE REPLY TO:

August 10, 1988

AUG 12 1988

Tallahassee

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

DER-BAQM

Re: Pasco County Resource Recovery Facility
PSD-FL-127

Dear Mr. Fancy:

On behalf of Pasco County, we have reviewed the Department's draft PSD permit for the Pasco County resource recovery facility. Our comments concerning the draft permit are set forth below.

1. On page 1 of the draft permit, the latitude and longitude should be modified because they are different than the coordinates presented in Pasco County's application for site certification.
2. On page 5, Specific Condition No. 1.b. should be modified to state that the maximum throughput "shall not exceed 115% of either the design MSW charging rate of 350 TPD or the heat input rate of 140 MMBtu/hr." The Department has historically authorized resource recovery facilities to operate at a throughput up to 115% of the design capacity. This practice is recognized in the Conditions of Certification for Pasco County which authorize a throughput of 115% of the design capacity. See Conditions of Certification, page 11, §XIV., ¶ A.1.c. We believe this condition should be changed because it is extremely important for the County to have the ability to operate at a throughput up to 115% of the nameplate capacity.
3. On page 6, Specific Condition No. 2.b. refers to 90% removal of "acid gases." To avoid confusion, it should be changed to refer to hydrogen chloride (HCL).

C. H. Fancy
Page Two
August 10, 1988

4. On page 6, Specific Condition No. 3.a. should refer to a particulate emission limit of 0.015 grains/dscf, rather than 0.0150 grains/dscf.

5. On page 8, the Specific Conditions contain a table of projected emissions. Our calculations indicate that the projected emissions for mercury will be 0.112 lbs/hr, rather than 0.105 lbs/hr.

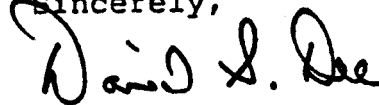
6. On page 9, Specific Condition No. 4.e. should be modified to indicate that compliance tests shall be conducted at $\pm 10\%$ of the nameplate BTU rating (i.e., 140 million BTU). As written, the draft condition suggests that a compliance test must be conducted precisely at the maximum capacity. We believe it is very important to modify this condition because it implies that there can be no flexibility in the operating conditions at the time of the compliance test.

7. On page 10, Specific Condition No. 5 requires continuous emission monitors for various substances, including oxygen. The conditions of certification for the Pasco County facility do not require a continuous emission monitor for oxygen. See Conditions of Certification at page 12, §XIV., ¶A.3.a. Accordingly, we believe the requirement for an oxygen monitor should be deleted from the draft permit.

8. On page 11, Specific Condition No. 6.a. requires continuous monitoring of the furnace exit gas temperatures. We do not know precisely where DER wants the monitor to be located for the furnace exit gas, but we assume that the monitor should be located at the economizer outlet. If our assumption is correct, we have no objections to this requirement.

Thank you for providing us with this opportunity to submit comments concerning the draft permit. Please call us if you have any questions.

Sincerely,



David S. Dee

cc: Ben Harrill
John Gallagher
Bob Hauser
Don Elias

DSD/vc:FANCY

*cc'd: Pradeep Raval
Tom Rogers
Bill Thomas, SW Dist
Dana Miller, EPA
Michael R. R. RPS*

Darryl Anderson

ATTACHMENT 3



4-7-89
Atlanta, GA
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV
345 COURTLAND STREET
ATLANTA, GEORGIA 30365

RECEIVED
SEP 12 1988
DER-BAQM

SEP 08 1988

4APT/APB-aes

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

Re: Pasco County Resource Recovery Facility (PSD-FL-127)

Dear Mr. Fancy:

Our office has reviewed the draft permit and the preliminary determination package for the proposed construction of the Pasco County Resource Recovery Facility (RRF), as well as the letter to your office from David Dee of the Carlton, Fields, Ward, Emmanuel, Smith and Cutler law offices. The permit was reviewed under the Region IV Overview of State Programs policy. We offer the following comments:

Draft Permit

In order for the permit to be more sufficient and enforceable, additional permit conditions are necessary for the flue gas emissions of each source. It is our policy that, for criteria pollutants, emission limits should specify the same averaging times as are indicated in the National Ambient Air Quality Standards (NAAQS). For example, your draft permit specifies that an eight-hour rolling average be used in determining the emission limits for carbon monoxide. Because the NAAQS for carbon monoxide was determined by using an eight-hour and a one-hour averaging times, we recommend the use of both averaging time standards in your permit. Likewise, for sulfur dioxide, a 24-hour and a three-hour average need to be specified.

Concerning the permit's emission limit for nitrogen oxides (0.643 lb/MMBTU), this limit exceeds values specified in other permits for municipal waste incinerators in Florida. Therefore, we do not consider this limit to represent BACT. For example, similar emission sources in Florida specify emission limits for nitrogen oxides (NO_x) without de- NO_x controls at approximately 0.051 lb/MMBTU.

Additional information is also needed in your discussion of compliance testing. When designating the test method to be used for compliance testing, you must specify which versions of 40 CFR Parts 60 and 61 are to be used. Also, for pollutants not subject to New Source Performance Standards (NSPS), you must indicate each pollutant's sample volume, sampling time, and the number of test runs for each test method specified. Concerning the Pasco County RRF permits, sampling times, test methods, etc., need to be specified for the following pollutants: Sulfur Dioxide, Nitrogen Oxides, Lead, Fluoride, Mercury, and Beryllium.

Public Notice

The public notice did not mention that toxics or unregulated pollutants were considered in determining BACT for this source. This causes the public notice to be deficient. However, if a public hearing was held and the public was informed of potential air toxic pollutants that would be emitted from the facility, then that would satisfy our concerns of a deficient public notice.

BACT Determination

We do not feel that the BACT analysis for NO_x was properly performed as insufficient arguments were given for not choosing the "top" control technology. We request that additional information be provided which shows unique and convincing arguments as to why de-NO_x controls cannot be applied to this source. Based on the information we received, the cost to control NO_x may be reasonable. Also, your argument that BACT analysis for NO_x is not necessary because the ambient impact of increased NO_x is not significant is completely unacceptable. The use of air quality modeling results to justify not using a certain level of BACT is also unacceptable. Ambient impacts do not drive the BACT determination. Ambient impacts only serve as a check to ensure that NAAQS and increments are met once a level of BACT is chosen.

Letter from Carton, Fields, Ward, Emmanuel, Smith and Cutler Offices - Attorneys at Law

Item 7 states that the requirement for an oxygen monitor should be deleted from Pasco County's draft permit; however, EPA's policy dictates that oxygen concentrations of exhaust gases be monitored continuously (see EPA memorandum on Operational Guidance on Control Technology for New and Modified Municipal Waste Combustors, dated June 26, 1987).

In item 8, it was assumed that the temperature probe would be located after the economizer. This is unacceptable. The location selected for measuring combustion temperatures should be based on sound engineering analysis and is usually as close as possible to the "fully mixed height," or the point beyond the final air addition where complete mixing should have occurred. We request that this point be clarified with Pasco County and the location of the temperature probe be indicated in the permit, if possible.

Thank you for the opportunity for providing our input. If you have any additional information or comments, please contact me or Karrie-Jo Shell of my staff at (404) 347-2864.

Sincerely yours,

Wayne J. Amon / Acting for

Bruce P. Miller, Chief
Air Programs Branch
Air, Pesticides, and Toxics
Management Division

*copied: Pradeep Raval
Barry Andrews
Bill Thomas, SW Dist
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