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(904) 434-0142

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

PLEASE REPLY TO:

Tallahassee

HAND-DELIVER

MEMORANDUM

TO: Richard Donelan, Jr.
Clair Fancy
Hamilton S. Oven, Jr.

FROM: David S. Dee D. Dee

DATE: April 5, 1988

RE: Pasco County Site Certification Hearing

Enclosed for your review are draft outlines of the questions that I am considering asking Clair Fancy and Buck Oven at the Pasco County site certification proceeding.

Please review and then let's discuss these questions.

DSD/vc:MEMO-2
Copied: CHFancy

RECEIVED
APR 5 1988
DER-BAQM

CLAIR FANCY

Qualifications

Academic Training

Job Experience

Current Job Title at DER

Duties and Responsibilities at DER

Experience with BACT Determinations

Experience with Resource Recovery Facilities

INTRODUCE FANCY'S RESUME INTO EVIDENCE

PROFFER FANCY AS AN EXPERT CONCERNING THE PERMITTING AND REGULATION OF SOURCES OF AIR POLLUTION

Pasco Project--BACT

Are you familiar with the proposed Pasco County resource recovery facility?

Yes.

Have you reviewed the Pasco County application?

Have you reviewed the DER report and conditions of certification?

Based on your experience and your activities in this case, have you formed an opinion as to whether the proposed baghouse, subject to an emission limitation of 0.015 grains per dry standard cubic foot for particulate matter, constitutes BACT for this facility?

Do you have an opinion as to whether the proposed dry scrubber constitutes BACT for the control of acid gases?

Have you formed an opinion as to whether the facility will comply with all of the other DER and EPA air quality standards?

Yes, it does.

Have you formed an opinion as to whether the County's evaluation of ambient air quality conditions at the site was satisfactory?

Yes, it was

Plastics Separation as BACT

Have you considered whether the BACT determination in this case should require Pasco County to remove plastic and styrofoam materials from the waste stream before they enter the resource recovery facility?

Theoretically interesting.

Not a practical approach.

Currently very difficult to separate these materials from the waste stream.

Do you know whether there would be any significant environmental benefit if Pasco County separated plastics and styrofoam from the waste stream?

Impacts from the facility are already very small.

May be some additional benefits from this proposal.

Benefits would not be significant.

Cost and difficulty of implementing proposal would outweigh the benefits.

What are the major pollutants created by the incineration of plastic and styrofoam?

Hydrogen Chloride

What is being done to control Hydrogen Chloride at the Pasco facility?

Dry scrubber will remove 90% of Hydrogen Chloride.

At this time, have you formed an opinion as to whether Pasco County should separate plastic and styrofoam from its waste stream?

Not appropriate now as BACT.

When the Department evaluates BACT, does it consider the BACT determinations being made elsewhere in the United States by other states and EPA?

Yes.

Do you know whether any other state or federal agency has required the removal of plastics and styrofoam from the waste stream as a method of implementing BACT?

Not aware of any cases.

Health Risks

How are health issues addressed in your assessment of the Pasco facility?

Ambient air quality standards are designed to protect the public health.

Neither DER nor EPA have standards for non criteria pollutants.

Evidence presented for Pasco and other projects indicates that health impacts for non-criteria pollutants are nominal where scrubber and baghouse are used.

Dioxin

What has the State of Florida done to evaluate the significance of dioxin emissions from resource recovery facilities?

Participated in study at Pittsfield, Mass.

Participated in study at Pinellas County facility with California Air Resources Board.

What did you learn from those studies?

Dioxin emissions from resource recovery are very small.

Did either one of these studies include a health risk assessment?

Pinellas Study showed risk of 1 in 1 million.

Do you know whether the Department of Environmental Regulation has decided what an appropriate level of risk is?

Risk of 1 in a million appears sufficiently low and this appears to be acceptable.

Notice of PSD Permit

Do you know whether the Department gave notice of its proposed action concerning the PSD permit for the Pasco resource recovery facility?

Did the Department provide a thirty day period for public comment?

Did the Department provide the material for public inspection at the Southwest District office?

Did the Department send a copy of the notice to the regional office of EPA in Atlanta and to other state and local officials, including the Tampa Bay Regional Plannig Council, the Federal Land Manager, and any other appropriate person?

Was a copy of the notice displayed at the District Office of DER?

Has the Department published notice of the PSD permit application in the Florida Administrative Weekly and in a newspaper of general circulation in Pasco County?

To the best of your knowledge, has the Department's notice of Pasco's PSD application complied with the applicable notice requirements in DER rule 17-2.220, Florida Administrative Code?

DSD/vc:Fancy

HAMILTON S. OVEN, JR.

Please state your name and business address.

Where are you employed?

What is your job title?

In general, what do you do?

Are you familiar with the proposed Pasco County resource recovery facility?

Comments from Other Agencies

In your capacity as the Siting Coordinator for DER, do you routinely send copies of applications for site certification to other state and federal agencies for their comments?

Did you send copies of the Pasco County application to other agencies for their comments?

Did you receive any comments from those agencies?

Do you recognize the documents labeled as Pasco County Exhibit ___-___?

PSC Order
DCA Report
SWFWMD Report
Department of Commerce
DNR
Archives
Agriculture
Others

Did you receive these documents in response to your request for comments about the Pasco County application for site certification?

Did you in the normal course of your business keep copies of these reports in your file?

INTRODUCE EXHIBITS ___-___ INTO EVIDENCE AS BUSINESS RECORDS.

Comments from DER

As the Siting Coordinator, do you normally solicit comments and reports from the other members of DER concerning the applications for site certification?

In this case, did you solicit comments about Pasco's application from the other members of DER?

What bureaus or divisions of the Department were given copies of the application for site certification?

> Southwest District Office, which has solid waste, groundwater monitoring, air quality and wastewater responsibilities.
>
> In Tallahassee, Bureau of Air Quality Management, Solid Waste, Groundwater Section.

What did you do to ensure that all of these groups of people in DER reviewed the Pasco County application?

> Oven talked with them and wrote them.

How do you know that these people actually reviewed the application?

> Received written and verbal communications from them with their comments.

Did you incorporate those comments into the DER report and conditions of certification which have been marked for identification as Pasco County's Exhibit _____?

Did you use your best efforts to ensure that the report and conditions of certification are accurate and correct?

To the best of your knowledge, are the report and conditions of certification correct?

INTRODUCE THE REPORT AND CONDITIONS OF CERTIFICATION INTO EVIDENCE AS CONDITIONS ___-____.

Evaluation of Alternatives

When the Department evaluates an application for site certification, does the Department routinely require the applicant to evaluate all of the possible alternatives to the applicant's proposed project?

No

Why not?

We do not have the authority or expertise to require the applicant to adopt alternatives.

As a practical matter, it would be very difficult for the Department to do so.

In this case, why didn't the Department require Pasco County to use recycling and composting rather than resource recovery?

That change would be very significant.

That approach would require a major policy decision concerning the County's expenditures of time and money.

We did not feel that it was appropriate for the Department to force the County to utilize anything other than the approach that it proposed.

Notice For the Site Certification Hearing

As the Siting Coordinator for the Department, what responsibility do you have for the publication of notice concerning the site certification hearing?

In this case, what did you do to ensure that appropriate notice was published?

Press Release

Notice in Florida Administrative Weekly

Notice in the Pasco Times

Do you recognize the documents which have been marked for identification as Pasco County Exhibits ___-___?

The three notices.

PROFFER EXHIBITS ___-____ INTO EVIDENCE AS PROOF OF PUBLICATION FOR THE SITE CERTIFICATION HEARING.

DER Recommendation

Based on the Department's review of the Pasco County application for site certification, what is the Department's recommendation concerning the proposed resource recovery facility, ashfill and associated facilities?

Approval subject to conditions of site certification.

DSD/vc:OVEN-6

NOTICE OF CERTIFICATION HEARING ON AN APPLICATION TO CONSTRUCT AND OPERATE AN ELECTRICAL POWER PLANT ON A SITE TO BE LOCATED NEAR NEW PORT RICHEY, FLORIDA

1. Application number PA 87-23 for certification to authorize construction and operation of an electrical power plant near Port Richey, Florida, is now pending before the Department of Environmental Regulation, pursuant to the Florida Electrical Power Plant Siting Act, Part II, Chapter 403, F.S.

2. The proposed 751 acre resource recovery site is located in the northwestern portion of unincorporated Pasco County. The site is approximately two and one-half miles north of State Road 52. It is bounded on the west and south by Hayes Road, on the east by Shady Hills Road, and on the north by Blue Bird Lane. Florida Power Corporation has a 295-foot wide transmission line right-of-way crossing the site. Initially the site will house a 900 tons per day solid waste burning resource recovery facility. The power plant will ultimately be expanded to 1200 tons per day generating 29 MW of electricity.. A short transmission line will connect to an existing FPC substation to the southwest of the facility.

3. The Department of Environmental Regulation has evaluated the application for the proposed power plant and intends to recommend approval of the project subject to conditions of certification. Certification of the plant would allow its construction and operation. The application and Staff Analysis Report are available for public inspection at the addresses listed below:

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
Southwest District Office
4520 Live Oak Fair Boulevard
Tampa, Florida 33610-7347

PASCO COUNTY UTILITIES DIVISION
7536 State Street
New Port Richey, Florida 33553

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
2379 Broad Street
Brooksville, Florida 34609-4097

4. Pursuant to Section 403.508, Florida Statutes, the land use and zoning public hearing will be held by the Division of Administrative Hearings on February 16-17, 1988, at 9:00 a.m., Pasco-Hernando Community College Auditorium, 7025 State Road 587, New Port Richey, Florida 34654, Florida, to determine whether or not the site is consistent and in conformance with existing land use plans and zoning ordinances. No other issues will be heard at this land use and zoning hearing. A subsequent public hearing will be held to consider environmental and other impacts prior to final action by the Governor and Cabinet.

5. Pursuant to 403.508(4), F.S.: "(a) Parties to the proceeding shall include: the applicant; the Public Service Commission; the Division of State Planning; the water management district as defined in Chapter 373, in whose jurisdiction the proposed electrical power plant is to be located; and the Department. (b) Upon the filing with the Department of a notice of intent to be a party at least 15 days prior to the date set for the land use hearing, the following shall also be parties to the proceeding:

1. Any county or municipality in whose jurisdiction the proposed electrical power plant is to be located.

2. Any state agency not listed in paragraph (a) as to matters within its jurisdiction.

3. Any domestic non-profit corporation or association formed in whole or in part to promote conservation or natural beauty; to protect the environment, personal health, or other biological values; to preserve historical sites; to promote

consumer interests; to represent labor, commercial or industrial groups; or to promote orderly development of the area in which the proposed electrical power plant is to be located.

(c) Notwithstanding paragraph (4)(d), failure of an agency described in subparagraphs (4)(b)1 and (4)(b)2 to file a notice of intent to be a party within the time provided herein shall constitute a waiver of the right of the agency to participate as a party in the proceeding.

(d) Other parties may include any person, including those persons enumerated in paragraph (4)(b) who failed to timely file a notice of intent to be a party, whose substantial interests are affected and being determined by the proceeding and who timely file a motion to intervene pursuant to Chapter 120, F.S., and applicable rules. Intervention pursuant to this paragraph may be granted at the discretion of the designated hearing officer and upon such conditions as he may prescribe any time prior to 15 days before the commencement of the certification hearing.

6. When appropriate, any person may be given an opportunity to present oral or written communications to the designated hearing officer. If the designated hearing officer proposes to consider such communication, then all parties shall be given an opportunity to cross-examine or challenge or rebut such communications.

7. Notices or petitions made prior to the hearing should be made in writing to:

Ms. Diane D. Tremor
Division of Administrative Hearings
The Oakland Office Building
2009 Apalachee Parkway
Tallahassee, Florida 32399-1550

8. Those wishing to intervene in these proceedings must be represented by an attorney or other person who can be determined to be qualified to appear in administrative hearings pursuant to Chapter 120, F.S., or Chapter 17-1.21, FAC.

9. This Public notice is also provided in compliance with the federal Coastal Zone Management Act, as specified in 15 CFR Part 930, Subpart D. Public Comments on the applicant's federal consistency certification should be directed to the Federal Consistency Coordinator, Division of Environmental Permitting, Department of Environmental Regulation.

10. On November 16, 1987, Pasco County applied to the DER to construct the aforementioned resource recovery plant. The application is also subject to U.S. Environmental Protection Agency (EPA) regulations for Prevention of Significant Deterioration of air quality (PSD), codified at 40 CFR 52.21, and Florida Administrative Code Chapter 17-2.04. These regulations require that, before construction on a source of air pollution subject to PSD may begin, a permit must be obtained from DER Such permit can only be issued if the new construction has been determined by DER to comply with the requirements of the PSD regulations, which are described in 40 CFR 52.21 and 17-2.04, F.A.C. These requirements include a restriction on incremental increases in air quality due to the new source and application of best available control technology (BACT).

The DER has been granted a delegation by EPA to carry out the PSD review of this source. Acting under that delegation, the DER has prepared a draft permit which is included in the DER's staff analysis report. The DER has made a preliminary determination that the proposed construction will comply with all applicable PSD regulations. The degree of Class II increment consumption that will result from the construction is:

Pollutant	Annual Average	24-hr Average	3-hr Average
Particulate	0.5%	1%	
Sulfur Dioxide	2%	3%	2%

The source is located approximately 27 kilometers from the nearest Class I area.

The degree of Class I increment consumption that will result from the construction and operation of the source is:

Pollutant	Annual Average	24-hr Average	3-hr Average
Particulate	1%	0.04%	
Sulfur Dioxide	1%	8%	8%

Construction and operation of the source will not cause a violation of any ambient air quality standard nor will it cause an exceedance of any PSD increment.

Technical Evaluation
and
Preliminary 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

April 4, 1988

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

Division of Environmental Permitting
Bureau of Permitting
Hamilton S. Oven, Jr., (Siting Coordination)

Southwest Florida District Office
Steve Morgan   Kim Ford
Bill Thomas   Harry Kern

Division of Environmental Programs
Bureau of Air Quality
Tom Rodgers   Clair Fancy
Barry Andrews

Bureau of Groundwater Protection
Don Kell

Bureau of Waste Management
John Reese

Bureau of Laboratories and Special Programs
Dr. Larry Olsen (Biology)

Office of General Counsel
Richard Donelan

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

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 liitle 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 SO_2 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 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 avaiable 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

"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 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 consevation 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 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 Resoures, 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, 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.

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 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 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 spred 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 reource 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 unprocessible 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 th e 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 Soutwest 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 tha 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 hydrogeologic 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 annd 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 elocated 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 committment 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.'

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

Siting Coordination Section
Bureau of Permitting
Division of Environmental Permitting
Tallahassee, Florida
32399-2400

4/4/88

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 limstones 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 lanfill 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 Subregional 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 clearcuting 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 a wide variety of pollutants into the ambient air. Some of these pollutants are specifically regulated, others are not. Of the specifically regulated pollutants some are regulated in order to protect human health and welfare, and have limiting ambient air concentration levels that are not to be exceeded. All of the specifically regulated pollutants are bound to certain emission restrictions which can differ for different source types. In many cases a pollutant is regulated for one source type and not another. For the pollutants identified as potentially being emitted 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 will deal with the prevention of significant deterioration regulations. The pollutants which are potentially subject to the PSD regulations are:

Pollutant	Emissions (TPY)
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_2S)	10
reduced sulfur compounds (including H_2S)	10
sulfuric acid mist (H_2SO_4)	7
fluorides (F-)	3

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:

Pollutant	Emissions (TPY)
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_2S)	10
reduced sulfur compounds (including H_2S)	10
sulfuric acid mist (H_2SO_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 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 (Tons/Year)	PSD Significant Emissions Rate (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
SO_2 - 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	H_2SO_4 - 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 techncal 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, Fl). 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 occured 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% CO_2. 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% CO_2. This level is slightly higher than the 0.01 grains/dscf corrected to 12% CO_2 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 aead 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 efficent 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% eficiency 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 valve 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% CO_2, 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 CO_2 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 nickle.

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 availalble 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 SO_2 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 SO_2 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 SO_2 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 SO_2 emissions in some cases. The installation of a flue gas desulfurization system to control SO_2 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 SO_3 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 constrast, plastics containing nitrogen as a heteroatom yield molecular nitrogen, some NOx, 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 compenents 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 SO_2 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 SO_2 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 SO_2 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 NOx are the temperature and the concentration of oxygen. Techniques used to reduce NOx 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 NOx 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 NOx 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 NOx 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 (NO_2) impact to be 1.03 ug/m^3. This impact level, in conjunction with the estimated background concentration of NO_2 (39 ug/m^3), is well below the National Ambient Air Quality Standard of 100 ug/m^3.

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 polycylic 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.

Polyclic organic matter is (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 cholorinated and non-chlorinated organic compounds through efficient combustin assured by proper operating practices. Modern incinerators have successfully controlled emissions of organic compounds by achieving proper compustion. 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 wheter 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 emissons or whether a casual relationship exists between CO emission levels and dioxin formation.

The EPA has developed a program of combustion strategis 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 fuly 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% O_2 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:

Air Pollutant	Emission Limit Per Unit
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 SO_2, CO, O_2, CO_2 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 (NOx), 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 SOS 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 conidtions 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 girds (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_2SO_4)	0.0358	75	17.9
Fluoride (as HF)	0.00802	17	4.01
Mercury (Hg)	0.00146	3.07	0.729
Beryllium (Be)	1.35×10^{-7}	0.000285	0.0000677
Inorganic Arsenic (As)	9.07×10^{-6}	0.0191	0.00454
Hydrogen Choloride (HCl)	0.127	267	63.5
Dioxin (as 2,3,7,8-TCDD)	3.54×10^{-9}	7.45×10^{-6}	1.77×10^{-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	Annual	0.05	1	NA
(TSP or PM_{10})	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	2.25×10^{-2}	NA	2.5×10^{-1}
Beryllium	24-hour	2.09×10^{-6}	NA	5.0×10^{-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 deminimus 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 deminimus level for each pollutant is also listed. All pollutants have maximum predicted impacts below their respective deminimus 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/m^3, 24-hour average and 1 ug/m^3, annual average for PM, and below 25 ug/m^3, 3-hour average, 5 ug/m^3, 24-hour average, and 1 ug/m^3, 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. Pasco RRF only Concent. (ug/m^3)	Maximum, All Increment Consuming Sources (ug/m^3)	Allowed Class I Increment (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, SO_2, CO, NO_2, Pb, and ozone (O_3) 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 maxmimum concentration increases are less than the sigificant impact levels defined in the State regulations for PM, SO_2, CO, and NO2. As such, no further modeling of other sources is required. Significant impact levels for Pb and O_3 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 though 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/m^3. 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 valeus 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 PM_{10}. Since maximum concentrations are less than 150 ug/m^3, the Federal PM_{10} 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 (H_2SO_4) 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 Hygenists (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 the 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 proccessing 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 silvaculture, 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 SO_2, 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.

3/31/88

State of Florida
Department of Environmental Regulation
Pasco County Resource Recovery Facility
Case No. PA 87-23
CONDITIONS OF CERTIFICATION

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State of Florida
Pasco County
Resource Recovery Facility
Case No. PA 87-23
CONDITIONS OF CERTIFICATION

I. CHANGE IN DISCHARGE

All discharges or emissions authorized herein shall be consistent with the terms and conditions of this certification. The discharge of any regulated pollutant not identified in the application, or more frequent than, or at a level in excess of that authorized herein, shall constitute a violation of the certification. Any anticipated facility expansions beyond the certified initial nameplate capacity of 1,200 TPD, production increases, or process modifications which may result in new, different, or increased discharges of pollutants, change in type of fuel as described in XIV.8., or expansion in steam generating capacity must be reported by submission of a supplemental application pursuant to Chapter 403, Florida Statutes.

II. NON-COMPLIANCE NOTIFICATION

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

A. A description of the discharge and cause of noncompliance; and

B. The period of noncompliance, including exact dates and times;

or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying event.

III. FACILITIES OPERATION

The Permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the Permittee to achieve compliance with the terms and conditions of this certification. Stoppages of landfill operations induced by weather conditions shall be allowed until the weather permits operations to resume. In the event of a malfunction of a resource recovery boiler's pollution control system that unit's furnace emissions must be shifted to the extent feasible to one or both of the remaining units having a properly functioning pollution control system. In the event of a prolonged (thirty (30) days or more) equipment malfunction or shutdown of air pollution control equipment, operation could be permitted to continue to take place under a consent order, only if the Permittee demonstrates that such operation will be in compliance with all applicable ambient air quality standards and PSD increments, solid waste rules, domestic waste rules and industrial waste rules. Additionally, during such malfunction or shutdown, the source shall comply with all other requirements of this certification and all applicable state and federal emission standards not affected by the malfunction or shutdown which is the subject of the consent order. Administrative action will not be initiated in the event of such a malfunction for 25 days following a malfunction unless there is an imminent health threat. However, if at thirty (30) days following a malfunction compliance has not been achieved by the source, an Order for Corrective Action may be immediately imposed upon the Applicant, subject to the provisions of Chapter 120 of the Florida Statutes. Operational stoppages exceeding two hours for air pollution control systems or four hours for other systems or operational malfunctions as noted below exceeding two hours for air pollution control systems or four hours for other systems and as defined in the operational contingency plans as specified in Condition XVII are to be reported as specified in Condition II. Identified operational malfunctions which do not stop operation but do compromise the integrity of the operation shall be reported to the Southwest District Office as specified in Condition II.

IV. ADVERSE IMPACT

The Permittee shall take all reasonable steps to minimize any adverse impact resulting from noncompliance with any limitation specified in this certification, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

V. RIGHT OF ENTRY

The Permittee shall allow during operational or business hours the Secretary of the Florida Department of Environmental Regulation and/or authorized representatives, upon the presentation of credentials:

A. To enter upon the Permittee's premises where an effluent source is located or in which records are required to be kept under the terms and conditions of this certification, and

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

C. To inspect and test any monitoring equipment or monitoring method required in this certification and to sample any discharge or pollutants, and

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

VI. REVOCATION OR SUSPENSION

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

VII. CIVIL AND CRIMINAL LIABILITY

This certification does not relieve the Permittee from civil or criminal penalties for noncompliance with any conditions of this certification, applicable rules or regulations of the Department or Chapter 403, Florida Statutes, or regulations thereunder.

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

VIII. PROPERTY RIGHTS

The issuance of this certification does not convey any property rights in either real or personal property, nor any exclusive privileges, nor does it authorize any injury to public or private property or any invasion of personal rights nor any infringement of Federal, State or local laws or regulations.

IX. SEVERABILITY

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

X. DEFINITIONS

The meaning of terms used herein shall be governed by the definitions contained in Chapter 403, Florida Statutes and any regulations adopted pursuant thereto. In the event of any dispute over the meaning of a term in these conditions which is not defined in such statutes or regulations, such dispute shall be resolved by reference to the most relevant definitions contained in any other state or federal statute or regulation. Words or phrases used herein dealing with conditions of the South Florida Water Management District (SFWMD) shall be defined by reference to Chapter 373, Florida Statutes, or applicable rules of the SFWMD.

XI. REVIEW OF SITE CERTIFICATION

The certification shall be final unless revised, revoked or suspended pursuant to law. At least every five years from the date of issuance of certification the Department shall review all monitoring data that has been submitted to it during the preceding five-year period for the purpose of determining the extent of the Permittee's compliance with the conditions of this certification and the environmental impact of this facility. The Department shall submit the results of its review and recommendations to the Permittee. Such review will be repeated at least every five years thereafter.

XII. MODIFICATION OF CONDITIONS

Pursuant to Subsection 403.516(1), F.S., the Board hereby delegates the authority to the Secretary to modify any condition of this certification dealing with sampling, monitoring, reporting, specification of control equipment, related time schedules, emission limitations (subject to notice and opportunity for hearing), conservation easements, or any special studies conducted, as necessary to attain the objectives of Chapter 403, Florida Statutes. Requests for modifications shall not be unreasonably withheld by the Department.

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

XIII. CONSTRUCTION

The facility shall be constructed, at a minimum, pursuant to the design standards presented in the application and the standards or plans and drawings submitted and signed by an engineer registered in the state of Florida. The Applicant shall present specific facility plans, as developed, for review by the Southwest District Office prior to construction pursuant to the portions of the plans then being submitted. Specific Southwest District Office approval of plans will be required based upon a determination of consistency with approved design concepts, regulations and these Conditions prior to initiating construction of the: leachate collection system; air pollution control equipment; stormwater runoff system; landfill closure plans and hazardous, toxic or pathological handling facilities or areas. Review and action by the Southwest District Office on said plans shall be accomplished in no longer than thirty (30) days from the date of a complete submittal of such plans and any action may be subject to review pursuant to Chapter 120, Florida Statutes.

A. Control Measures

1. Stormwater Runoff

To control runoff during construction which may reach and thereby pollute Waters of the State, necessary measures shall be utilized to settle, filter, treat or absorb silt-containing or pollutant-laden stormwater to ensure against spillage or discharge of excavated material that may cause turbidity in excess of 29 Nephelometric Turbidity Units above background in Waters of the State. Control measures may consist of sediment traps, barriers, berms, and vegetation plantings. Exposed or disturbed soil shall be protected and stabilized as soon as possible to minimize silt and sediment laden runoff. The pH of the runoff shall be kept within the range of 6.0 to 8.5. The Permittee shall comply with Florida Administrative Code Chapters 17-25 and 40D-4. The Permittee shall complete the forms required by 17-25.09(1) and 40D-4 and submit those forms and the required information to the SWFWMD for any modifications that might occur.

2. Burning

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

3. Sanitary Wastes

Disposal of sanitary wastes from construction toilet facilities shall be in accordance with applicable regulations of the appropriate local health agency.

4. Solid Wastes

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

5. Noise

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

6. Dust and Odors

The Permittee shall employ proper odor and dust-control techniques to minimize odor and fugitive dust emissions. The applicant shall employ control techniques sufficient to prevent nuisance conditions on adjoining property.

7. Transmission Lines

The directly associated transmission lines from the Resource Recovery Facility electric generators to the existing Florida Power Corporation substation shall be cleared, maintained and prepared without the use of herbicides.

8. Protection of Vegetation

The Permittee shall develop the site so as to retain a buffer of trees or shall plant a buffer of trees sufficient to minimize the aesthetic and noise impacts of the facility. The buffer, as far as practicable, shall be of sufficient height and width suitable for the purpose of mitigating both construction and operational impacts of the facility.

9. Dewatering Operations

The dewatering operations during construction shall be carried out in such a manner that all water withdrawn will be retained onsite. There shall be no discharge of water offsite due to dewatering operations.

B. Environmental Control Program

An environmental control program shall be established under the supervision of a Florida registered professional engineer to assure that all construction activities conform to applicable environmental regulations and the applicable conditions of certification. If harmful effects or irreversible environmental damage not anticipated by the application or the evidence presented at the certification hearing are detected during construction, the Permittee shall notify the Southwest District Office as required by Condition II.

C. Reporting

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

2. Upon or immediately prior to completion of construction of the resource recovery facility or a phase thereof and upon or immediately prior to completion of all necessary preparation for the operation of each landfill cell, the Southwest District Office will be notified of a date on which a site or facility inspection should be performed in accordance with Condition V, and the inspection shall be performed within fourteen (14) days of the date of notification by Permittee.

XIV. OPERATION

A. Air

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

1. Emission Limitations upon Operation of Units 1-3

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% CO_2.

(2) SO_2: 60 ppmdv at 12% CO_2, 6-hour rolling average; or 70% reduction by weight of uncontrolled SO_2 emissions; not to exceed 100 ppmdv corrected to 7% O_2.

(3) Nitrogen Oxides: 0.643 lbs/MBtu heat input.

(4) Carbon Monoxide: 100 ppmdv corrected to 7% O_2, 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.

b. The height of the boiler exhaust stack shall not be less than 275 feet above grade.

c. The resource recovery facility's boilers shall not be loaded in excess of either 115% of their rated nameplate capacity of 29,167 pounds of MSW or 115% of 140 x 10^6 Btu per hour each.

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

e. Compliance with the limitations for particulates, sulfur oxides, nitrogen oxides, carbon monoxide, fluoride, VOC and lead shall be determined in accordance with Florida Administrative Code Rule 17-2.700, DER Methods 1,2, 3, 4, and 6 and 40 CFR 60, Appendix A, Methods 5, 7, (modified with prefilter), 10, 12, 13A or 13B (or modified method 5 for fluorides), and 18 or other methods as approved by the DER. The stack test for each unit shall be performed at $\pm$10% of the maximum heat input rate of 140 x 10^6 Btu heat input per hour or the maximum charging rate of 29,167 pounds of MSW per hour. Compliance with the beryllium emission limitation shall be determined in accordance with 40 CFR 61, Method 103 or 104, Appendix B. Compliance testing for mercury shall be determined in accordance with 40 CFR 61, Method 101A, Appendix B. Particulate testing shall include one run during representative soot blowing which shall be averaged proportionally to normal daily operations. Visible emission testing shall be conducted simultaneously with soot blowing and non-soot blowing runs. Compliance with the opacity limit shall be demonstrated in accordance with Florida Administrative Code Rule 17-2.700(6)(a)9., DER Method 9. Compliance with SO_2 emissions when firing supplemental oil may be determined by submission of a chemical analysis of the oil as fired.

f. Combustion efficiency shall be calculated by: $\%CE = (1/(1+(CO/CO_2))) \times 100$, and shall be at least 99.5% for an 8 hour average.

2. Emission Control Equipment

a. The boiler particulate control system shall be designed constructed and operated to achieve a maximum emission rate of 0.015 grains per dscf corrected to 12% CO_2. All other particulate control devices shall be designed to meet the provisions of Section 17-2.610, FAC.

b. The facility shall be equipped with dry scrubbers which are designed, constructed and operated to remove SO_2 at an efficiency of 70% by weight or to achieve an emission rate of 100 ppmdv at 7% O_2 which ever is less stringent and to cool the flue gases to an average temperature not to exceed $300^{0}F$ (3-hour rolling average).

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

3. Air Monitoring Program

a. The Permittee shall install and operate continuously monitoring devices to measure combustion temperature and flue gas temperature at the exit of the acid gas control equipment plus SO_2, CO, and CO_2 levels and opacity for each unit. The monitoring devices shall meet the applicable requirements of Chapter 17-2, Section 17-2.710, FAC, and 40 CFR 60.45, and 40 CFR 60.13, including certification of each device in accordance with 40 CFR 60, Appendix B, Performance Specifications and 40 CFR 60.7 (a)(5). Re-certification shall be conducted annually from initial certification. Data on monitoring equipment specifications, manufacturer, type, calibration and maintenance needs, and its proposed location after the economizer or in the air pollution control equipment outlet duct shall be provided to the Southwest District Office for approval prior to installation together with and subject to the same provisions as submittal of air pollution control equipment pursuant to Paragraph XIII hereof.

b. The Permittee shall provide sampling ports in the air pollution control equipment outlet duct or stack and shall provide access to the sampling ports in accordance with Section 17-2.700, FAC. Drawings of testing facilities including sampling port locations as required by Section 17-2.700 shall be submitted to the Department for approval at least 60 days prior to construction of the sampling ports and stack.

c. The Permittee shall have a sampling test of the emissions performed by a commercial testing firm within 60 days after achieving the maximum rate at which the boilers will be operated but not later than 180 days of the start of operation of the boilers and annually for particulate and NO_x from the date of testing thereafter. Thirty (30) days prior notice of the initial sampling test shall be provided to the Southwest District Office and fifteen (15) days notice before subsequent annual testing. The notification requirements of 40 CFR parts 60 and 61 will also be observed.

4. Reporting

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

b. Emissions monitoring shall be reported to the Southwest District Office on a quarterly basis in accordance with Section 17-2.710, FAC, 40 CFR, Part 60, Subsection 60.7 or 40 CFR Part 61 as appropriate..

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

5. Unconfined Emissions

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

B. Fuel

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

C. Wastewater Disposal

A complete submittal of plans, drawings and specifications for leachate collection systems, pumps, lift stations, sewage collection systems, and wastewater collection systems in accordance with appropriate DER rules shall be furnished to the Southwest District Office for approval at least 60 days prior to start of construction for the particular of such component. In order to obtain approval, the receiving sewage treatment plant shall indicate its ability and willingness to accept the wastewater. Also plans and specifications for connections to off-site sewage and wastewater transmission systems shall be furnished to the Southwest District Office for approval 60 days prior to start of construction. Review shall be accomplished in accordance with Condition XIII.

D. Water Discharges

1. Surface Water

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

2. Groundwaters

a. All discharges to groundwaters, such as landfill leachate, shall be collected and treated as necessary, or otherwise be of high enough quality, to be able to meet the applicable Water Quality Standards of Sections 17-3.402 and 17-3.404, FAC, at the boundary of the site. If monitoring should indicate a violation of the standards, the Permittee shall immediately notify the Southwest district Office and SWFWMD and institute remedial action.

3. Groundwater Monitoring Program

a. Sampling of the shallow aquifer groundwater quality shall be conducted in at least six well clusters in the site vicinity. At least one of these wells shall be up the hydrologic slope from the landfill area to provide current background data. Other wells shall be located down the hydrologic slope from the landfill areas. Specific location of any new wells or modifications to the monitoring program may be proposed by the applicant, but must be approved by the Department prior to the construction of the new monitoring wells.

b. Upon completion of construction of the Ground water monitoring system, the following information shall be submitted to the Southwest District Office for all ground water monitoring wells and any new well(s) constructed:

Well identification	Drillers log
Latitude/Longitude	Total depth of well
Aqifer monitored	Casing diameter
Screen type and slot size	Casing type and length
Screen length	SWFWMD well construction permit numbers
Elevation at top of pipe	
Elevation at land surface	

c. Upon completion of construction of the ground water monitoring system, but not less than 12 months before the disposal of MSW or ash, the Permittee shall sample all ground water monitoring wells for the Primary and Secondary Drinking Water parameters includes in Chapter 17-22, FAC, Public Drinking WAter Systems. The specific parameters to be sampled are listed in Part II, Quality Standards, Analytical Methods, Sampling, Sections 17-22.210 and 17-22.220, FAC.

d. The field testing, sample collection and preservation and laboratory testing, including quality control procedures, shall be in accordance with Chapter 17-4.246 and 17-3.401, FAC. Approved methods as published by the Department or as published in Standard Methods, A.S.T.M. or EPA methods shall be used. Approved methods for chemical analyses are summarized in the Federal Register, December 1, 1976 (41FR52780) except that turbidity shall be measured by the Nephelometric Method.

e. All required submittals shall be sent to the DER Southwest Office within 60 days of installation of the ground water monitoring system. Upon receipt and review of the required data, quarterly sampling reports shall be submitted to the Southwest District Office commencing 12 months prior to disposal of any wastes in the ashfill/landfill. Any required modifications of the ground water monitoring system or program shall be modified in accoedance with the provisions of Condition XIII. The ground water monitoring program may be reviewed annually.

E. Solid/Hazardous Waste

1. Operation of the associated landfill shall be done in accordance with all applicable portions of Chapter 17-7, FAC, including prohibitions, procedures for closing of the landfill, and final cover requirements, or, as provided in this condition (XIV.E.) in its entirety. The plans of the final landfill design shall be provided to the Department for review and approval at least 90 days prior to start of operation. Review shall be performed in accordance with Condition XIII. The final plans for this Facility shall include provisions for the isolated temporary handling of suspected hazardous, toxic or infectious wastes.

2. No suspected or known hazardous, toxic, or infectious wastes as defined by Federal, State or local statutes, rules, regulations or ordinances shall be burned or landfilled at the site.

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

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

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

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

7. Unless approved by the Department with subsequent modification of conditions, this facility shall not accept materials defined by applicable Federal, State or local statutes, rules, regulations or ordinances as "Hazardous Wastes".

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

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

10. Results from said residue analysis shall be sent to the Southwest District Office within 30 days of receipt. Results of these analyses may also be used for correlation with groundwater monitoring information and in any subsequent modification of conditions.

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

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

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

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

project, the Permittee shall submit certified as-built plans signed and sealed by a Florida Registered Professional Engineer.

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

16. An adequate quality control plan shall be submitted to the Southwest District Office 30 days prior to liner installation/construction. The quality control plan shall include installation/construction personnel, all specifications and construction methods, liner testing procedures, and sampling frequency. The liner material proposed for use shall be completely described. Laying of the liner shall comply with the specified standards as fully described in the Quality Control Plan. An acceptable method of testing for pinholes and defective areas shall be completely described. Sampling and testing shall be conducted in the field during construction and after completion by qualified personnel under the direction of a professional engineer in charge to assure the liner will meet performance standards.

17. At least 30 days prior to liner installation, the Permittee shall submit to the Southwest District Office a construction schedule or chart to include the following:

a. Beginning of liner installation,

b. Completion of liner installation,

c. Beginning of leachate collection system/removal system collection,

d. Completion of leachate collection/removal system construction.

18. After all significant initial construction of each new system, section, or phase of the landfill has been completed and prior to the operation or acceptance of any solid waste, the engineer or the authorized public officer shall complete a Certification of Construction Completion, DER Form 17-7.130(2).

19. The design, operation, and monitoring of disposal or control of any "special wastes" shall be in accordance with F.A.C. Section 17-7.060, and any other applicable department rules, to protect the public saftey, health and welfare. "Special wastes" means those wastes that require extraordinary management. They include but are not limited to abandoned automobiles, white goods, used tires, waste oil, sludges, dead animals, agricultural and industrial wastes, septic tank pumpings, and infectious and hazardous wastes. Sludges which may be hazardous due to their chemical composition should be disposed of in accordance with F.A.C. Section 17-7.040(4). Disposal of Grade III Domestic Wastewater Treatment Sludge, disposal of domestic septage, and disposal of food service sludge, shall be in accordance with F.A.C. Section 17-7.540(6).

F. Operational Safeguards

The overall design and layout of the facilities shall be such as to mitigate potential adverse effects to humans and the environment. Security control measures shall be utilized to prevent exposure of the public to hazardous conditions. The Federal Occupational Safety and Health Standards will be complied with during construction and operation. The safety standards specified under Section 440.56, Florida Statutes, by the Industrial Safety Section of the Florida Department of Commerce will be complied with during operation.

G. Transmission Lines

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

H. Noise

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

XV: SWFWMD - SURFACE WATER PERMITTING

A. Land Development

Except as authorized by this certification, 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.

B. Stormwater Control

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.

C. Well Plugging

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.

D. Pond Slopes

All retention/detention pond side slopes, shall be sodded, and staked as necessary, to prevent erosion.

E. Liability

By issuance of this certification, 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.

F. Plan Review

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.

XVI SWFWMD - CONSUMPTIVE USE PERMITTING

A. Accuracy of Information

The facility operator attests that all statements made for this certification 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 certification for the facility may be revoked following notice and hearing.

B. Reasonable Use

Certification is predicated upon 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 of certification is granted.

C. Reservations

In granting certification, 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 public health and safety. Such reservations are subject to periodic review and revision in light of changed conditions.

D. Withdrawal Limits

Certification 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 are shown in the table below.

USER ID	1	2
DISTRICT ID	1	2
WITHDRAWAL POINT		
LATITUDE	282157	282157
LONGITUDE	823430	823429
GPD AVERAGE	677,000	43,000
GPD MAXIMUM	1,010,000	60,000

E. Water Shortage

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.

F. Sampling

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.

G. Access

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.

H. Reconsideration

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.

I. Minimum Water Levels

The District may, at a future date, establish minimum water levels in aquifers and lakes, and minimum flow in streams, which may require the facility operator to limit withdrawal from these sources when water levels or flows fall below the established minimums.

J. Conservation

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.

K. Flow Measurement

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.

L. Reporting

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

M. Water Quality Sampling

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 Distict staff as necessary to ensure the protection of the resource.

District W/D No(s)	Parameters	Sampling Frequency
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 the 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

XVII. SWFWMD - ASHFILL/LANDFILL

A. Preoperational Limitation

As far as practical, disposal of unprocessed solid waste at the ashfill/landfill site should be minimized before the resource recovery facility is operational. The disposal of unprocessed waste at the ashfill/landfill site shall be prohibited until the East Pasco County Sanitary Landfill site is filled to the maximum capacity permitted 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.

B. Unprocessed Waste Limitation

The disposal of by-passed unprocessed waste at the ashfill/landfill site shall be minimized when the resource recovery facility is not fully operational or when the 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 initiate future construction of additional capacity of the resource recovery facility as early as possible in order to avoid having the amount of incoming processible waste exceed the capacity of the facility and to avoid disposal of unprocessed waste in the ashfill/landfill

C. Waste Segregation

In so far as practical, ash residue from the resource recovery facility shall be segregated from unprocessed waste in ashfill/landfill cells in order to insure that the ash remains in an alkaline state.

D. Leachate Monitoring

The secondary underdrain system shall be monitored weekly for the presence of leachate which would indicate leakage from the primary liner. A contingency plan will be developed for actions to be taken in event that the failure of a liner or underdrain is detected. The contingency plan shall include:

1. Methods for determining which cell is leaking,
2. 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,
3. Plans for repair of a leaking liner, and
4. Plans for restoration of the aquifer if aquifer contamination occurs.

E. Appliances and Machines

The County, to the extent practicable, should collect and segregate appliances and machines containing or utilizing coolants, greases or oils for recycling by a metals processor in order to minimize their disposal in the ashfill/landfill.

XVIII. OPERATIONAL CONTINGENCY PLANS

A. Operating Procedures

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

B. Contingency Plans

The Permittee shall develop and furnish the Southwest District Office written contingency plans for the continued operation of the system in event of breakdown. Stoppages which compromise the integrity of the operations must have appropriate contingency plans. Such contingency plans should identify critical spare parts to be readily available.

C. Current Engineering Plans

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

D. Application Modifications

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

XIX. <u>TRANSFER AND/OR ASSIGNMENT</u>

If contractural rights, duties or obligations are transferred under this certification, notice of such transer or assignment shall immediately be submitted to the Department and SWFWMD by the previous certification holder (Permittee) and the Assignee. Included within the notice shall be the identification of the entity responsible for compliance with the certification. Any assignment or transfer shall carry with it full responsibility for the limitations and conditions of this certification.

XX. <u>PROPRIETARY DOCUMENTS OR INFORMATION - CONFIDENTIALITY</u>

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

XXI <u>GOPHER TORTOISE MANAGEMENT PLAN</u>

A. The Permittee shall identify the proposed gopher tortoise preserve, to be located in the 170-acre southwest portion of the site, on the site master plan. The Permittee shall develop a management plan as approved by the Florida Game and Fresh Water Fish Commission staff, that will adequately ensure the maintenance and enhancement of the gopher tortoises and their commensals on this preserve area.

B. The approximately 45-acre of remnant sandhill community, located in the northeast corner of the project site, should be utilized for borrow only when other potential on-site areas have been exhausted. Should adequate borrow material be obtained elsewhere this remnant sandhill community should be incorporated into the management plan for the gopher tortoises, or incorporated into the buffer area.

XXII. COOLING TOWER

A. The Pasco County Resource Recovery Facility may utilize reclaimed water or stormwater runoff as a source of cooling water. If the Permittee is forced to use ground water for cooling due to non-availability of reclaimed water, such use shall be in accordance with Condition XVI.

B. Prior to use in the cooling tower, reclaimed water shall be disinfected by use of chlorine or other suitable biocide to achieve a 1.0 mg/l concentration of total chlorine residual after a 15 minute contact time.

APPENDIX A

State of Florida

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

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

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

Dear Mr. Twachtmann:

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
Executive Director

TB-DS:bc
Attachment

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

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

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 necesary 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 critieria 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 5th 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

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

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-

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 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.

<u>Natural Systems and Recreational Lands</u>

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 longleaf pine and turkey oak. Clearcut areas are occuppied 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.

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 precipators 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.

<u>Energy</u>

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.

<u>Hazardous and Nonhazardous Materials and Wastes</u>

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 recieves 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.

<u>Land Use</u>

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 recource 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 faciity 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.

<u>Public Facilities</u>

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 unprocessible 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 comversion 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 únder 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.

APPENDIX C

Southwest Florida Water Management District

Received DER

February 25, 1988

FEB 29 1988

BPS

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

2379 BROAD STREET, BROOKSVILLE, FLORIDA 34609-6899
PHONE (904) 796-7211 or 1-800-423-1476 SUNCOM 628-4097

application, including analysis of the District's reports, when complete.

Sincerely,

Kent A. Zaiser

Kent A. Zaiser
Deputy General Counsel

Edward B. Helvenston

Edward B. Helvenston
Senior Attorney

KAZ:lc
Enclosures: 3
cc: David S. Dee (with enclosures)
Richard T. Donelan, Jr. (with enclosures)
James Benjamin Harrill (with enclosures)
C. Laurence Keesey (with enclosures)
Katie Nichols (with enclosures)

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

		Quantities Requested	Quantities Proposed
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 LATITUDE	LONGITUDE	GALLONS PER DAY AVERAGE	GALLONS PER DAY MAXIMUM
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.

District W/D No(s).	Parameters	Sampling Frequency
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 W/D No.	Diameter (inches)	Total Depth / Casing Depth (feet)	Use(s)**
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 Ft^2/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.

Robert G. Perry 2/10/88
Prepared by Robert G. Perry

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.

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. Staff recommends approval of the Surface Water Management System for the resource recovery project site.

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 Manageme 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.

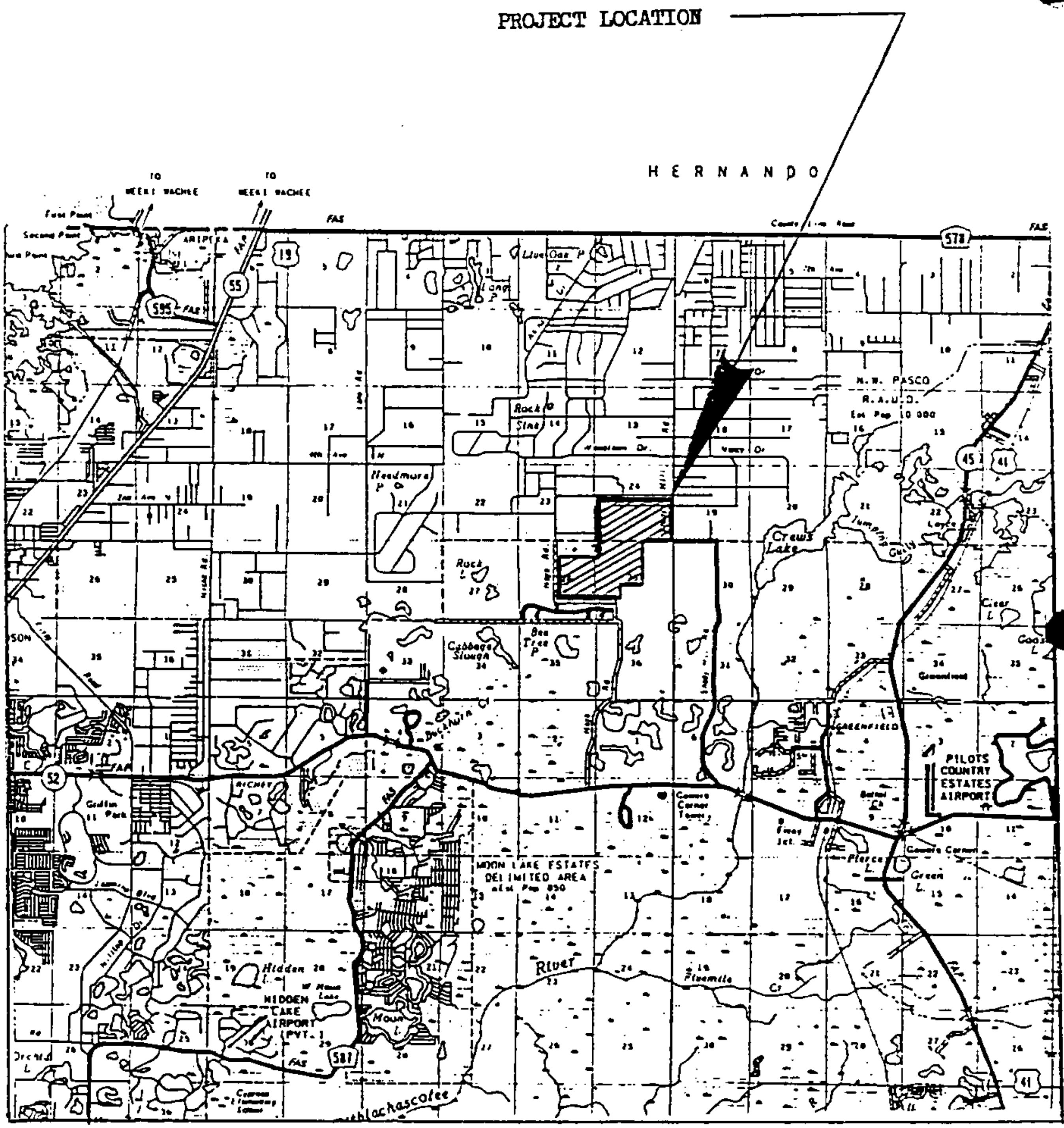
Report Received By: Wojciech M. Mroz Date: 2/3/83
WOJCIECH M. MROZ, Fla. P.E. No. 38749
Brooksville Permitting Division
Resource Regulation Department

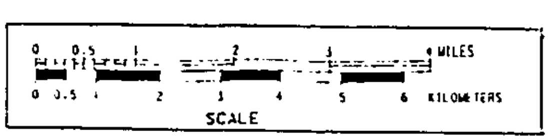
TABLE No. 2 WETLANDS REPORT

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



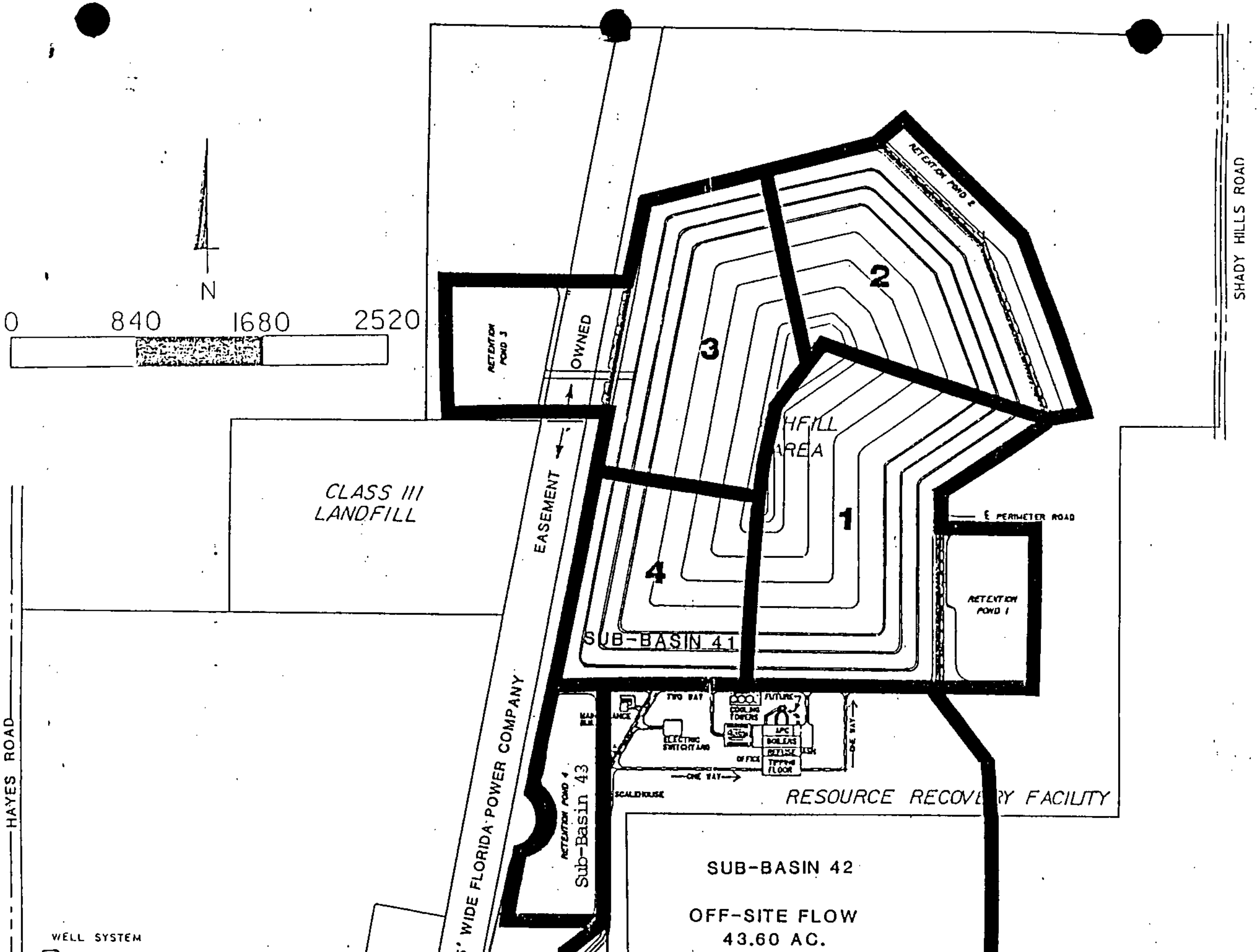


GENERAL HIGHWAY MAP

PASCO COUNTY

FLORIDA

EXHIBIT "A"



Pasco County Resource Recovery Program
Drainage Basin Delineations
EXHIBIT "B"

PASCO COUNTY RESOURCE RECOVERY FACILITY
TABLE 1
Discharge Rates (25 Year-24 Hour Storm)

Basin Number	Basin Area	Peak Pre-Development Discharge (CFS)	Peak Post-Development Discharge (CFS)
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

TABLE No. 2 WETLANDS REPORT

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File No.:	402861
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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.

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.

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.

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.

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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.

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John W. Parker FEB 23, 1988

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Brooksville Permitting Division
Resource Regulation Department
Southwest Florida Water Management District