



For South Broward  
Citizens For a Better  
Environment, Inc.:

J. Robert Miertschin, Jr., Esquire  
2801 Ponce de Leon Boulevard  
Suite 250  
Coral Gables, Florida 33134  
and  
Frank A. Kreidler, Esquire  
521 Lake Avenue, Suite 3  
Lake Worth, Florida 33460

For Florida Audubon  
Society and Broward  
County Audubon Society:

Charles Lee,  
Senior Vice President  
Florida Audubon Society  
1101 Audubon Way  
Maitland, Florida 32751

#### Preliminary Statement

On April 8, 1985, the South Broward County Resource Recovery Project, Inc., on behalf of the Broward County Board of County Commissioners, filed with the Department of Environmental Regulation its application for Power Plant Site Certification of the proposed resource recovery facility and landfill.

A land use hearing was held on August 20, 1985, and the Governor and Cabinet, sitting as the Siting Board pursuant to Chapter 403, Part II, Florida Statutes, entered an Order on October 15, 1985, concluding that the proposed site is consistent with the existing land use plans and zoning ordinances.

On June 4, 1985, the Public Service Commission issued its Consummating Order, numbered 14435, which adopted the proposed agency action contained in PSC Order No. 14357. This act effectively certified the present and future need for the electrical generating capacity to be supplied by the proposed resource recovery facility as required by Section 403.507(1)(b), Florida Statutes.

Prior to the certification hearing, the Department limited its objection to the project to the issue of whether the air pollution control technology proposed by the applicant constituted Best Available Control Technology (BACT). Accordingly, the Department presented testimony and evidence limited to this issue. One Department witness was called to address dredge and fill implications of the project.

At the site certification hearing, the Department presented testimony of eight witnesses, and its Exhibits 1-4, and 6-20

were received into evidence. The witnesses presented by the Department were: Hamilton S. Oven, Jr., accepted as an expert in the areas of processing and reviewing power plant siting certification applications, and the applicability of the Department's rules and standards to power plant siting certification applications, [T.1450-1456]; Mr. Larry O'Donnell, accepted as an expert in the evaluation of dredge and fill applications, the impact of dredge and fill activities on biological resources, and the impact of dredge and fill activities on DER water quality standards, [T.1529-1534]; Mr. Ed Svec, accepted as an expert in the review and analysis of air pollution sources for compliance with the Department's rules and regulations, [T.1750-1754]; Mr. Barry Andrews, accepted as an expert in the review and analysis of stationary air pollution sources for compliance with state and federal regulations, and the review and evaluation of air pollution control technologies and strategies [T.1561-1571]; Mr. Tom Rogers, accepted as an expert in meteorology, including air quality impact analysis and air quality modeling [T.1757-1761]; Dr. Aaron J. Teller, accepted as an expert in chemical engineering, with emphasis on design efficiency, reliability, and cost of air pollution control technology [T.1328-1334]; Mr. Jack Lauber, P.E., accepted as an expert in Best Available Control Technology ("BACT") for control of toxic air contaminants from municipal solid waste resource recovery incineration systems [T.1652-1658]; and Mr. Clair Fancy, accepted as an expert in air pollution control technology, and the review and analyses of air pollution sources for compliance with state and federal regulations [T.1780-1786].

The applicant presented testimony of thirteen witnesses concerning the proposed air emissions, their impacts, and the type and cost of air pollution control equipment it believed appropriate for the proposed facility.

No other party produced any witnesses nor introduced any evidence concerning the air issues in dispute between the applicant and the Department.

Two sessions of the certification hearing were devoted to allowing the public an opportunity to present testimony and evidence either for or against the proposed facility. These sessions were held on November 19 and 21, 1985. As necessary for such evidence or testimony to be considered in this proceedings, all witnesses were placed under oath and subject to cross-examination.

Having considered all testimony and evidence properly admitted, having heard argument of counsel and being otherwise fully advised herein, the following Findings of Fact, Conclusions of Law, and Recommended Order are entered.

#### FINDINGS OF FACT

1. Broward County proposes to construct a resource recovery facility near Ft. Lauderdale, Florida. The facility will consist of three mass burn incinerators, which combined will have the capacity to incinerate 2,250 tons per day (TPD) of municipal solid waste (MSW). [DER Exhibit 2, p. 27]

2. The applicant has estimated maximum annual emissions for the air pollutants that the facility will emit based on operation of the boilers at 115% of their rated nameplate capacity, 24 hours a day, 365 days each year. [T.1037]

3. Each incinerator unit will have an approximate heat input of  $281 \times 10^6$  Btu heat input per hour. [DER Exhibit 2]

4. The criteria pollutants the applicant proposes to emit and which the Department regulates include Particulate Matter (PM), Sulfur Dioxide (SO<sub>2</sub>), Nitrogen Oxides (NO<sub>x</sub>), Carbon Monoxide (CO), Lead (Pb), and VOC (the precursors to Ozone). [T.1021-1022]

5. Other pollutants which will be emitted by the facility, include Hydrogen Chloride (HCl), Dioxins, Furans, Beryllium (Be), Mercury (Hg), Arsenic (As), Fluorides, and Sulfuric Acid Mist.

6. The optimal temperature that the incinerator will operate at will be at or above 1800°F, with a residence time of the flue gas in the boilers at or above one second. [T.810-815.]

7. Broward County is designated a non-attainment area for the pollutant ozone. Volatile Organic Compounds (VOC) are the regulated pollutant for ozone. [T.1023.]

8. The proposed controlled emission rate of VOC for the proposed facility is 56.7 tons per year. Therefore, the applicant did not have to undergo a determination of Lowest Achievable Emission Rates (LAER) for VOC's. [DER Exhibit 2, p.34.]

9. For all other pollutants for which standards exist, the county is designated attainment. [T.1023.]

10. The proposed facility is considered a major source for the pollutant Partriculate Matter. The applicant has estimated PM emissions at 328 TPY. [DER Exhibit 2, p.33A.]

11. The proposed facility is considered a major source for the pollutant Sulfur Dioxide. The applicant has estimated SO<sub>2</sub> emissions at 2319 TPY. [DER Exhibit 2, p.33A.]

12. The proposed facility is considered a major source for the pollutant Carbon Monoxide. The applicant has estimated NO<sub>x</sub> emissions at 2361 TPY. [DER Exhibit 2, p.33A.]

13. The proposed facility is considered a major source for the pollutant lead. The applicant has estimated Pb emissions at 128 TPY. [DER Exhibit 2, p.33A]

14. The proposed facility is considered a major source for the pollutant fluorides. The applicant has estimated F emissons at 109 TPY. [DER Exhibit 2, p.33A.]

15. The proposed facility is considered a major source for the pollutant Sulfuric Acid Mist. The applicant has estimated H<sub>2</sub>SO<sub>4</sub> emissions at 200 TPY. [DER Exhibit 2, p.33A.]

16. The applicant indicated at the hearing that it had amended its proposed emission of lead from 0.27 lbs. per unit ton of MSW charged, to 0.030 lbs./MBtu. [T.1300.]

17. Prior to the hearing the Department was advised orally by the applicant that its proposed lead emission was incorrect by a factor of 10. However, the applicant never amended its application formally, nor did it provide the Department with any justification for the revised emission. [T.1484-1487.]

18. The emission factor for lead originally proposed by the applicant is closer to the median value of lead emissions from similar facilities. [T.1482-1484.]

19. Even with the applicant's revised emission for lead, the amount greatly exceeds the Significant Emission Rate of 0.6 tons per year listed in Florida Administrative Code Rule 17-2.500, Table 500-2. [DER Exhibit 2, p.33A.]

20. High removal efficiencies for metallic compounds emitted from MSW incinerators require operation of the particulate control equipment at temperatures below 500°F, and consistently efficient removal of submicron fly ash particles. [T.1713-14, 1342-43. DER Exhibit 2, p.40]

21. Metallic compounds, including lead, and dioxins and furans adsorb and condense onto submicron-sized particles when flue gas temperatures are below 500°F. [T.1715, T.1342-1343.]

22. The flue gas temperature at the inlet of the proposed facility's particulate control device is estimated to be 425-475°F. [DER Exhibit 2, p.40]

23. Electrostatic precipitators are less efficient than filter systems (baghouses) for removing particulate matter in the submicron-sized particle range. [T.856, T.1713-14]

24. The facility proposes to emit the acid gas Fluoride, uncontrolled, at the rate of 0.23 lbs per ton of refuse combusted, or 108.6 TPY emitted. The Significant Emission Rate for Fluorides listed in Florida Administrative Code Rule 17-2.500, Table 500-2, is three (3) tons per year. [DER Exhibit 2, p. 33A.]

25. The facility proposes to emit Sulfuric Acid Mist, uncontrolled, at a rate of 0.047 lbs./MBtu, or 200 TPY. The Significant Emission rate for Sulfuric Acid Mist listed in FAC Rule 17-2.500, Table 500-2, is seven (7) tons per year. [DER Exhibit 2, p.33A.]

26. The facility is estimated to emit HCl, uncontrolled, at 5252 tons per year. With 90% control as proposed by the Department, the facility will emit 120 pounds per hour, or 525 tons per year. [DER Exhibit 2, p. 47.]

27. The release of HCl gas from the combustion of polyvinyl chloride (PVC) plastics is a major contributor to HCl emissions from MSW incinerators. [T.1710.]

28. The plastics content of refuse can vary widely from load to load, city to city. [T.1738-1739.]

29. The plastics content of refuse was the subject of an EPA sponsored study in 1968. The study indicated that a 300-400% increase in plastics in refuse between the years 1968 and 2000 could be expected. [T.1711.]

30. The Environmental Protection Agency presently requires hazardous waste incinerators emitting more than four (4) pounds of HCl per hour to achieve removal efficiency of up to 99%. A minimum of 99% removal efficiency is required when removal at 99% will not reduce emissions to four pounds per hour. [DER Exhibit 2, p. 47.]

31. SO<sub>2</sub>, NO<sub>x</sub>, and HCl are identified precursors to possible acid formation and subsequent acidic rain. [DER Exhibit 2, p. 54].

32. Flue gas controls are the most conventional means of reducing HCl, fluorides, and Sulfuric Acid Mist emissions from MSW incinerators. ESP's do not provide any control of HCl or other acid gases. [T.1615 and DER Exhibit 2, p.44.]

33. For the proposed facility, PSD review is required for Particulate Matter, Sulfur Dioxide, Nitrogen Oxides, Carbon Monoxide, Lead, Fluorides, Sulfuric Acid Mist, Beryllium, and Mercury. [DER Exhibit 2, page 48].

34. The emissions proposed by the County for Particulate Matter, Sulfur Dioxide, Nitrogen Oxides, Carbon Monoxide, Lead, Fluorides, Beryllium, Mercury, and Sulfuric Acid Mist are higher than the Significant Emission Rates for Regulated Air Pollutants contained in Florida Administrative Code 17-2.500, Table 500-2. [DER Exhibit 2, p. 33A]

35. Applicable rules and regulations require an analysis of compliance with applicable air quality standards. These standards include ambient air quality standards ("AAQS") and prevention of significant deterioration ("PSD") requirements. [T.1021-1022.]

36. PSD rules provide that a proposed source cannot result in emissions which, when considered with all other new sources required to be included in the analysis, will exceed certain "increments" over the existing ambient air quality (or "baseline concentrations") established as of a certain date (in this case December, 1977). [DER Exhibit 2, page 52].

37. Computer modeling techniques are used to determine compliance with applicable standards. [T.1026, T.1800.]

38. Air quality impacts from a proposed facility depend on a number of factors, including meteorological conditions (such as the ambient temperature, wind speed and direction, and the turbulence of the atmosphere) and the physical parameters of the proposed emission source, such as the dimensions of the stack (including its height and diameter) and the temperature of the stack gas. [T.1038.]

39. When determining the effect of emissions from a proposed source on an area other than the immediate area, the geographical proximity of the proposed source to the impacted area is also a key factor. [T.1054-1055]

40. Using these factors, computer models predict the impact of air pollutant emissions on the concentration of a pollutant at the ground level at a certain point. [T.1042.]

41. Due to the dimensions of the proposed stack and building, aerodynamic downwash could increase emission concentrations in the immediate location of the facility. [T.1771].

42. The proposed facility's stack is 4.6 meters below the allowed good engineering practices stack height of 65 meters. [T.1074.]

43. An acid gas scrubber would lower the temperature of the flue gas, which would result in a lower plume height. [T. 1776-1777].

44. Although a lower plume height would result in deposition closer to the facility and less opportunity for dispersion of pollutants, a scrubber would reduce the amount of emissions coming out of the facility, and reduce the ambient concentrations of those emissions. [T.1779].



45. PSD review requires an analysis of the proposed facility's impact on Class I areas within 100 kilometers of the facility. [T.1764]

46. A Class I area, the Everglades National Park, is located within 100 kilometers of the proposed facility. [T.1764.]

47. Impact analysis indicated that the proposed facility would have a less than significant impact on the Class I area. [T.1765.]

48. The U.S. Department of Interior, National Park Service, determined that the proposed facility would not significantly impact the Everglades National Park. [T.1765]

49. The proposed facility is within an area designated as Class II. [DER Exhibit 2, page 52, T.1027.]

50. The proposed facility's emissions of SO<sub>2</sub> and PM are the only significant sources in the area that will consume PSD increment. Atmospheric dispersion modeling indicates that the concentration increases are less than the maximum allowable amounts. [DER Exhibit 2, p. 52].

51. A de minimus ambient impact level has been defined for fluorides, beryllium, and mercury. The proposed facility is not expected to exceed the de minimus level for these three non-criteria pollutants at the Department's BACT emission limitations. [DER Exhibit 2, p. 55].

52. The modeling analysis predicts that no ambient air quality standards will be exceeded for the criteria pollutants PM, SO<sub>2</sub>, CO, NO<sub>x</sub>, and Pb, based on the emission rates proposed by the Applicant or the Department. [T.1767].

53. Given existing air quality in the area of the proposed facility, emissions from the resource recovery facility are not expected to cause or contribute to a violation of an AAQS. [DER Exhibit 2, pp. 52-53, and T.1767.]

54. PSD requirements also require the use of Best Available Control Technology ("BACT"). A determination of BACT requires an analysis of the energy, environmental, and economic impacts of the proposed facility. BACT was determined for PM, SO<sub>2</sub>, NO<sub>x</sub>, CO, F, Sulfuric Acid Mist, Lead, Mercury, Beryllium, and Visible Emissions. [DER Exhibit 2, p. 48.]

55. In determining BACT for acid gas control, and particulate and heavy metal control, the capital and annual costs of utilizing a baghouse/dry scrubber system are set forth below:

Dry Scrubber/Baghouse

Capital Cost	<u>\$13,000,000.00</u>
Annual Cost	<u>\$ 4,147,100.00</u>

Resulting Emission Rates

Particulate Matter: 0.01 GR/DSCF  
(corrected to 12% CO<sub>2</sub>)

Acid Gas Reduction:

HF	95%
SO <sub>2</sub>	70%
HCl	90%

Heavy Metal Reduction: 99%

Cost per ton of refuse burned: \$4.38

[DER Exhibit 1; T. 1334-1339]

56. The cost of controlling SO<sub>2</sub> and HCl emissions alone is estimated at \$1,050 per ton of pollutant removed. This is less than the 1978 EPA guideline of \$2,000 per ton. [T.1605-1606].

57. The average person disposes of five pounds of solid waste per day, or approximately 1,825 pounds per year. [T.1796.]

58. If the average person generates slightly less than one ton of garbage per year, then the cost of disposing that garbage at the proposed facility, with acid gas and particulate control included, is slightly less than \$2.24 per person, per month, or \$26.88 per person, per year. [T.1796.]

59. Using the applicant's cost estimate for add-on acid gas control of \$13.40 per ton of refuse, the cost per person, per month is approximately \$2.99, or \$35.90 per year. [BC Exhibit 185, as amended.]

60. The applicant has estimated the tipping fee (the cost of sending one ton of garbage to the proposed facility) to be \$22.50 initially, increasing to \$26.50 in 1989. [T.70.]

61. The Department and the Applicant differ on what constitutes BACT for PM, SO<sub>2</sub>, Pb, F, and Sulfuric Acid Mist. [DER Exhibit 2, p. 37-38.]

62. The installation of a baghouse to control particulate emissions and lead has been determined to represent BACT. [T.1614.]

63. The use of flue gas control equipment, specifically dry scrubbers, to control SO<sub>2</sub>, F, Sulfuric Acid Mist, and HCl emissions has been determined to represent BACT for these emissions. [T.1614.]

64. Dry scrubbers/baghouses are extremely efficient and reliable in removing acid gases and submicron-sized particulates. [T.1724-1725, T. 1339.]

65. The State of Connecticut has certified a scrubber/baghouse system as BACT for the Mid-Connecticut facility. [T.1604-1605.]

66. The U.S. Department of Interior, National Park Service, agreed with the Florida Department of Environmental Regulation's BACT determination that dry scrubbers and a baghouse constituted Best Available Control Technology for the proposed facility. [DER Exhibit 4].

67. The South Florida Water Management District has filed its report as required by Section 403.507(1)(a), Florida Statutes, and that report does not object to certification of this site subject to certain conditions which are proposed to be adopted as conditions of certification. [DER Exhibit 2, and jointly filed Conditions of Certification.].

68. The Department of Community Affairs has filed its report as required by Section 403.507(1)(a), Florida Statutes, and that report concludes that the proposed project is compatible with the state comprehensive plan. [DER Exhibit 2, p. 17].

69. The State of Florida Department of Environmental Regulation has filed its report as required by Section 403.507(2), Florida Statutes, and has recommended certification of the proposed facility subject to the proposed Conditions of

Certification, including the Department's Air Emission Limitations. [DER Exhibit 2; Jointly filed Conditions of Certification with Exhibit B.].

#### CONCLUSIONS OF LAW

1. The Division of Administrative Hearings has jurisdiction, and this proceeding was heard pursuant to the Florida Electrical Power Plant Siting Act, Chapter 403, Part II, Florida Statutes, and Chapter 17-17, Florida Administrative Code, to consider the subject application for site certification.

2. Notice, in accordance with Chapters 120 and 403, Florida Statutes, and Chapter 17-17, Florida Administrative Code, has been given to all persons and parties entitled thereto, as well as to the general public.

3. The record of this proceeding consists of all pleadings and papers filed herein, including the site certification application the transcripts of all hearings, all orders entered by the Hearing Officer, and evidence and exhibits properly admitted into the record.

4. The purpose of the site certification hearing was to receive testimony and evidence concerning whether the location and operation of the proposed facility will produce minimal effects on human health, the environment, the ecology of the land and its wildlife, and the ecology of state waters and aquatic life, and balance fully the increasing demand for electric power plant location and operation with the above environmental effects. Section 403.502, Florida Statutes, and the Florida Chapter of the Sierra Club v. Orlando Utilities Commission, 436 So.2d 383, 385 (Fla. 5th DCA 1983).

5. The air quality issues are governed by regulations contained in Chapter 17-2, Florida Administrative Code, and in Chapter 40 of the Code of Federal Regulations.

6. Two broad categories of rules can be distinguished: non-attainment rules, or rules governing pollutants emitted in areas with measured concentrations of these pollutants exceeding the air quality standards; and attainment rules, or rules

governing pollutants emitted within areas not exceeding an air quality standard for that pollutant.

7. Broward County is designated a nonattainment area for the pollutant ozone. 40 CFR 81.310 and Rule 17-2.410, F.A.C.

8. For all other pollutants for which an air quality standard exists (criteria pollutants), the county is designated as attainment. 40 CFR 81.310 and Rule 17-2.420, FAC.

9. The proposed facility is considered a new Major Facility pursuant to Table 500-1, Major Facilities Category, 17-2, F.A.C.

10. For each regulated pollutant that the facility proposes to emit that would be equal to or greater than 100 tons per year, the resource recovery facility is considered a major source. FAC Rule 17-2.500(2)(d) 2.b.

11. For the pollutant lead, a source is considered major for emissions that would be equal to or greater than 5 tons per year.

12. All necessary and required governmental agencies were parties to this proceeding, and all required reports and studies were completed and presented to the Department of Environmental Regulation. These include the report of the Department of Community Affairs as to the compatibility of the proposed resource recovery facility with the State Comprehensive Plan, Section 403.507(1)(a), Florida Statutes; the Florida Public Service Commissions report as to the present and future need for electrical generating capacity to be supplied by the proposed facility, Section 403.507(1)(d), Florida Statutes; and the report of the South Florida Water Management District as to the impact of the proposed facility on water resources, Section 403.507(1)(c), Florida Statutes. The record further establishes that the Department of Environmental Regulation conducted or contracted for the enumerated studies required by Section 403.507(2), Florida Statutes, and completed its report and recommendations with respect thereto. The Department of Environmental Regulation recommends certification of the proposed resource recovery facility subject to its recommended conditions of certification, which with the exception of the Air Emission Limitations, have been accepted by the applicant.

13. The oral and documentary evidence adduced at the certification hearing demonstrate that the construction and operational safeguards for the proposed resource recovery facility are technically sufficient for the welfare and protection of the citizens of Florida. If performed in accordance with the recommended conditions of certification, the construction, operation and location of the proposed resource recovery facility are expected to produce minimal adverse effects on human health, the environment, the ecology of land and its wildlife, and the ecology of state waters and their aquatic life. Certification incorporating the conditions proposed by the Department is consistent with the premise of abundant, low-cost electrical energy and is a reasonable balance between those environmental impacts which will occur and the recognized need for the proposed resource recovery facility's electrical generating capacity.

14. The construction and operation of the resource recovery facility at the posed site is compatible with the applicable provisions of the Florida State Comprehensive Plan.

15. The construction and operation of the resource recovery facility at the proposed site will comply with applicable statutes, rules, regulations and other criteria of the South Florida Water Management District, as set forth in Chapter 373, Florida Statutes, Chapter 40E, Florida Administrative Code, and the conditions for certification proposed by the District.

16. Non-attainment review is required for all non-attainment pollutants which have the potential to emit 100 tons per year or more of the affected pollutants, Florida Administrative Code Rule 17-2.510(4). Non-attainment review includes a determination of Lowest Achievable Emission Rate (LAER), and the obtaining of emission offsets.

17. As the proposed facility will emit less than 100 tons of VOC's, the precursor of the non-attainment pollutant ozone, the facility does not have to undergo non-attainment review, including a determination of LAER.

18. The proposed facility is subject to the provisions of the federal New Source Performance Standards, 40 CFR 60, Subpart

E, for incinerators. These rules require that any standard required by BACT shall be at least as stringent as an applicable New Source Performance Standard.

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

20. Rule 17-2.500(2)(f)3, Florida Administrative Code, 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.

21. The emissions proposed by the County for Particulate Matter, Sulfur Dioxide, Nitrogen Oxides, Carbon Monoxide, Lead, Fluorides, Beryllium, Mercury, Sulfuric Acid Mist, and VOC's exceed the significant emission rates for Regulated Air Pollutants contained in Florida Administrative Code Rule 17-2.500, Table 500-2.

22. The applicant and the Department of Environmental Regulation differ over what constitutes BACT for the proposed facility's air emissions. I have carefully considered the evidence and conclude that the emission limits proposed by the Department, with the appropriate technology for achieving such, constitutes BACT.

23. BACT is defined as:

an emission limitation, including a visible emissions standard, based on the maximum degree of reduction of each pollutant emitted which the Department, on a case-by-case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, system and techniques (including fuel cleaning or treatment or innovative fuel combustion techniques) for control of each such pollutant. Rule 17-2.100(22), Florida Administrative Code. (E.S.)

24. Section 17-2.630, Florida Administrative Code, requires the Department give consideration to four areas when making a

determination of Best Available Control Technology (BACT). Those four areas that must be considered include:

(a) Any EPA determination of BACT pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 or 40 CFR Part 61. In no event shall application of BACT result in emissions of any pollutant which would exceed the emissions allowed under 40 CFR Part 60 or 61.

(b) All scientific, engineering, and technical material and other information available to the Department.

(c) The emission limiting standards or BACT determinations of any other state.

(d) The social and economic impact of the application of such technology.

25. The Department gave due consideration and balanced all required factors when understaking the BACT determination for the proposed project.

26. The applicant disputes the BACT determination completed by the Department for Particulate Matter, Sulfur Dioxide, Lead, Fluoride, and Sulfuric Acid Mist. I have considered carefully the evidence and conclude that the emission limitations for these pollutants proposed by Department constitute BACT. The control technology proposed by the applicant, that being only an electrostatic precipitator, does not constitute BACT.

27. The department's determination of BACT is further justified when the facility's proposed emissions of HCl are considered. Although the Department does not have an emission-limiting standard for HCl emissions from MSW incinerators, testimony and evidence adduced as the final hearing establish conclusively that the facility will be a major source of HCl emissions, HCl emissions have the potential to create adverse environmental impacts, and that the control technology proposed by the applicant will not provide control for HCl emissions. As required by the holding in McDonald v. Department of Banking and Finance, 346 So.2d 569 (Fla. 1st DCA 1977), the Department has the authority to protect and enhance the air quality of Florida, and appropriately defended its emerging policy of regulating HCl Emissions from MSW incinerators at the final hearing.

28. The air quality impact analysis required by the PSD regulations for the proposed facility included an analysis of



existing air quality; a PSD increment analysis for SO<sub>2</sub> and PM only; an AAQS analysis; an analysis of impacts on soils, vegetation, and acid rain, and growth-related air quality impacts; and a "Good Engineering Practice" stack height determination.

29. In 1978, E.P.A. published a N.S.P.S. guideline for reasonableness of cost that suggested that costs up to \$2,000 per ton of pollutant control was reasonable. [T. 1605, 1811]. This guideline has not been revised since it was promulgated, and while it still has some value as a comparative guideline, I do not consider it conclusive on the question of costs per ton of pollutant removed.

RECOMMENDED ORDER

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

IT IS RECOMMENDED THAT:

1. South Broward Resource Recovery Facility Project, Inc., be granted certification pursuant to Chapter 403, Part II, Florida Statutes, for the location, construction, and operation of the proposed resource recovery facility, as proposed in the application and evidence of record;

2. Certification be subject to the Conditions of Certification, including the Air Emission Limitations proposed by the Department, and which are attached to this Recommended Order as Appendix I.

Respectfully submitted and entered this \_\_\_\_ day of April, 1986, in Tallahassee, Florida.

\_\_\_\_\_  
WILLIAM J. KENDRICK  
Hearing Officer  
Division of Administrative Hearings  
The Oakland Building  
2009 Apalachee Parkway  
Tallahassee, Florida 32301  
Telephone: (904) 488-9675

Filed with the Clerk of the  
Division of Administrative Hearings  
this \_\_\_\_ day of April, 1986, in  
Tallahassee, Florida.

Copies furnished:

See attached page

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that an original and one copy of the foregoing State of Florida Department of Environmental Regulation's Proposed Findings of Fact, Proposed Conclusions of Law and Proposed Recommended Order was provided by Hand-Delivery to WILLIAM J. KENDRICK, Hearing Officer, Division of Administrative Hearings, The Oakland Building, 2009 Apalachee Parkway, Tallahassee, Florida 32301; and by U.S. Mail this 31st day of January, 1986, and by U.S. Mail this 31st day of January, 1986 to:

Clifford A. Schulman, Esquire  
Timothy A. Smith, Esquire  
Kerri L. Barsh, Esquire  
Greenberg, Traurig, Askew, Hoffman,  
Lipoff, Rosen & Quentel, P.A.  
1401 Brickell Avenue, 7th Floor  
Miami, Florida 33131

David L. Jordan, Esquire  
2751 Executive Center Circle, East  
Tallahassee, Florida 32301

Elizabeth D. Ross, Esquire  
Irene Kennedy Quincey, Esquire  
South Florida Water Management  
District  
3301 Gun Club Road  
West Palm Beach, Florida 33402

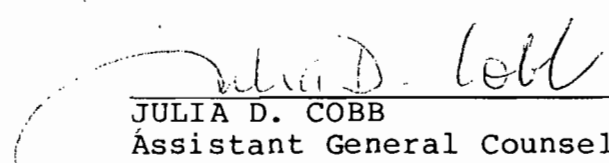
J. Robert Miertschin, Jr., Esquire  
2801 Ponce de Leon Boulevard  
Suite 250  
Coral Gables, Florida 33134

Frank A. Kreidler, Esquire  
521 Lake Avenue, Suite 3  
Lake Worth, Florida 33460

Charles Lee  
Senior Vice President  
Florida Audubon Society  
1101 Audubon Way  
Maitland, Florida 32751

DATED this 31st day of January, 1986

STATE OF FLORIDA DEPARTMENT OF  
ENVIRONMENTAL REGULATION

  
\_\_\_\_\_  
JULIA D. COBB  
Assistant General Counsel  
2600 Blair Stone Road  
Tallahassee, Florida 32301  
Telephone: 904/488-9730

BEFORE THE STATE OF FLORIDA  
DIVISION OF ADMINISTRATIVE HEARINGS

DER

FEB 4 1986

IN RE: )  
)  
SOUTH BROWARD COUNTY RESOURCE )  
RECOVERY PROJECT, POWER PLANT )  
SITING CERTIFICATION )  
APPLICATION PA 85-21 )

DOAH Case No.: 85-1106  
85-1116  
OGC File No.: 85-0357

BAQM

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION'S  
PROPOSED FINDINGS OF FACT, PROPOSED CONCLUSIONS  
OF LAW AND PROPOSED RECOMMENDED ORDER

Pursuant to Section 120.57(1)(b)4., Florida Statutes, and Florida Administrative Code Rule 28-5.401 and 22I-6.31, the State of Florida Department of Environmental Regulation ("Department"), submits within the allowed time this, its Proposed Recommended Order, which includes Proposed Findings of Fact and Proposed Conclusions of Law.

RECOMMENDED ORDER

Pursuant to Notice, the Division of Administrative Hearings, by its duly designated Hearing Officer, William J. Kendrick, held a public hearing in the above-styled case November 12-15, and 18-22, 1985, in Davie, Florida.

Appearances

For the Applicant:

Clifford A. Schulman, Esquire  
Timothy A. Smith, Esquire  
Kerri L. Barsh, Esquire  
Greenberg, Traurig, Askew, Hoffman,  
Lipoff, Rosen & Quentel, P.A.  
1401 Brickell Avenue, 7th Floor  
Miami, Florida 33131

For the Department of  
Environmental Regulation:

Julia D. Cobb, Esquire  
Richard Tucker, Certified Legal  
Intern  
Department of Environmental  
Regulation  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32301

For the Department of  
Community Affairs:

David L. Jordan, Esquire  
Department of Community Affairs  
2751 Executive Center Circle, East  
Tallahassee, Florida 32301

For South Florida Water  
Management District:

Elizabeth D. Ross, Esquire  
Irene Kennedy Quincey, Esquire  
South Florida Water Management  
District  
3301 Gun Club Road  
West Palm Beach, Florida 33402

For South Broward  
Citizens For a Better  
Environment, Inc.:

J. Robert Miertschin, Jr., Esquire  
2801 Ponce de Leon Boulevard  
Suite 250  
Coral Gables, Florida 33134  
and  
Frank A. Kreidler, Esquire  
521 Lake Avenue, Suite 3  
Lake Worth, Florida 33460

For Florida Audubon  
Society and Broward  
County Audubon Society:

Charles Lee,  
Senior Vice President  
Florida Audubon Society  
1101 Audubon Way  
Maitland, Florida 32751

#### Preliminary Statement

On April 8, 1985, the South Broward County Resource Recovery Project, Inc., on behalf of the Broward County Board of County Commissioners, filed with the Department of Environmental Regulation its application for Power Plant Site Certification of the proposed resource recovery facility and landfill.

A land use hearing was held on August 20, 1985, and the Governor and Cabinet, sitting as the Siting Board pursuant to Chapter 403, Part II, Florida Statutes, entered an Order on October 15, 1985, concluding that the proposed site is consistent with the existing land use plans and zoning ordinances.

On June 4, 1985, the Public Service Commission issued its Consummating Order, numbered 14435, which adopted the proposed agency action contained in PSC Order No. 14357. This act effectively certified the present and future need for the electrical generating capacity to be supplied by the proposed resource recovery facility as required by Section 403.507(1)(b), Florida Statutes.

Prior to the certification hearing, the Department limited its objection to the project to the issue of whether the air pollution control technology proposed by the applicant constituted Best Available Control Technology (BACT). Accordingly, the Department presented testimony and evidence limited to this issue. One Department witness was called to address dredge and fill implications of the project.

At the site certification hearing, the Department presented testimony of eight witnesses, and its Exhibits 1-4, and 6-20

were received into evidence. The witnesses presented by the Department were: Hamilton S. Oven, Jr., accepted as an expert in the areas of processing and reviewing power plant siting certification applications, and the applicablity of the Department's rules and standards to power plant siting certification applications, [T.1450-1456]; Mr. Larry O'Donnell, accepted as an expert in the evaluation of dredge and fill applications, the impact of dredge and fill activities on biological resources, and the impact of dredge and fill activities on DER water quality standards, [T.1529-1534]; Mr. Ed Svec, accepted as an expert in the review and analysis of air pollution sources for compliance with the Department's rules and regulations, [T.1750-1754]; Mr. Barry Andrews, accepted as an expert in the review and analysis of stationary air pollution sources for compliance with state and federal regulations, and the review and evaluation of air pollution control technologies and strategies [T.1561-1571]; Mr. Tom Rogers, accepted as an expert in meteorology, including air quality impact analysis and air quality modeling [T.1757-1761]; Dr. Aaron J. Teller, accepted as an expert in chemical engineering, with emphasis on design efficiency, reliability, and cost of air pollution control technology [T.1328-1334]; Mr. Jack Lauber, P.E., accepted as an expert in Best Available Control Technology ("BACT") for control of toxic air contaminants from municipal solid waste resource recovery incineration systems [T.1652-1658]; and Mr. Clair Fancy, accepted as an expert in air pollution control technology, and the review and analyses of air pollution sources for compliance with state and federal regulations [T.1780-1786].

The applicant presented testimony of thirteen witnesses concerning the proposed air emissions, their impacts, and the type and cost of air pollution control equipment it believed appropriate for the proposed facility.

No other party produced any witnesses nor introduced any evidence concerning the air issues in dispute between the applicant and the Department.

Two sessions of the certification hearing were devoted to allowing the public an opportunity to present testimony and evidence either for or against the proposed facility. These sessions were held on November 19 and 21, 1985. As necessary for such evidence or testimony to be considered in this proceedings, all witnesses were placed under oath and subject to cross-examination.

Having considered all testimony and evidence properly admitted, having heard argument of counsel and being otherwise fully advised herein, the following Findings of Fact, Conclusions of Law, and Recommended Order are entered.

#### FINDINGS OF FACT

1. Broward County proposes to construct a resource recovery facility near Ft. Lauderdale, Florida. The facility will consist of three mass burn incinerators, which combined will have the capacity to incinerate 2,250 tons per day (TPD) of municipal solid waste (MSW). [DER Exhibit 2, p. 27]

2. The applicant has estimated maximum annual emissions for the air pollutants that the facility will emit based on operation of the boilers at 115% of their rated nameplate capacity, 24 hours a day, 365 days each year. [T.1037]

3. Each incinerator unit will have an approximate heat input of  $281 \times 10^6$  Btu heat input per hour. [DER Exhibit 2]

4. The criteria pollutants the applicant proposes to emit and which the Department regulates include Particulate Matter (PM), Sulfur Dioxide (SO<sub>2</sub>), Nitrogen Oxides (NO<sub>x</sub>), Carbon Monoxide (CO), Lead (Pb), and VOC (the precursors to Ozone). [T.1021-1022]

5. Other pollutants which will be emitted by the facility, include Hydrogen Chloride (HCl), Dioxins, Furans, Beryllium (Be), Mercury (Hg), Arsenic (As), Fluorides, and Sulfuric Acid Mist.

6. The optimal temperature that the incinerator will operate at will be at or above 1800°F, with a residence time of the flue gas in the boilers at or above one second. [T.810-815.]

7. Broward County is designated a non-attainment area for the pollutant ozone. Volatile Organic Compounds (VOC) are the regulated pollutant for ozone. [T.1023.]

8. The proposed controlled emission rate of VOC for the proposed facility is 56.7 tons per year. Therefore, the applicant did not have to undergo a determination of Lowest Achievable Emission Rates (LAER) for VOC's. [DER Exhibit 2, p.34.]

9. For all other pollutants for which standards exist, the county is designated attainment. [T.1023.]

10. The proposed facility is considered a major source for the pollutant Particulate Matter. The applicant has estimated PM emissions at 328 TPY. [DER Exhibit 2, p.33A.]

11. The proposed facility is considered a major source for the pollutant Sulfur Dioxide. The applicant has estimated SO<sub>2</sub> emissions at 2319 TPY. [DER Exhibit 2, p.33A.]

12. The proposed facility is considered a major source for the pollutant Carbon Monoxide. The applicant has estimated NO<sub>x</sub> emissions at 2361 TPY. [DER Exhibit 2, p.33A.]

13. The proposed facility is considered a major source for the pollutant lead. The applicant has estimated Pb emissions at 128 TPY. [DER Exhibit 2, p.33A.]

14. The proposed facility is considered a major source for the pollutant fluorides. The applicant has estimated F emissions at 109 TPY. [DER Exhibit 2, p.33A.]

15. The proposed facility is considered a major source for the pollutant Sulfuric Acid Mist. The applicant has estimated H<sub>2</sub>SO<sub>4</sub> emissions at 200 TPY. [DER Exhibit 2, p.33A.]

16. The applicant indicated at the hearing that it had amended its proposed emission of lead from 0.27 lbs. per unit ton of MSW charged, to 0.030 lbs./MBtu. [T.1300.]

17. Prior to the hearing the Department was advised orally by the applicant that its proposed lead emission was incorrect by a factor of 10. However, the applicant never amended its application formally, nor did it provide the Department with any justification for the revised emission. [T.1484-1487.]

18. The emission factor for lead originally proposed by the applicant is closer to the median value of lead emissions from similar facilities. [T.1482-1484.]

19. Even with the applicant's revised emission for lead, the amount greatly exceeds the Significant Emission Rate of 0.6 tons per year listed in Florida Administrative Code Rule 17-2.500, Table 500-2. [DER Exhibit 2, p.33A.]

20. High removal efficiencies for metallic compounds emitted from MSW incinerators require operation of the particulate control equipment at temperatures below 500°F, and consistently efficient removal of submicron fly ash particles. [T.1713-14, 1342-43. DER Exhibit 2, p.40]

21. Metallic compounds, including lead, and dioxins and furans adsorb and condense onto submicron-sized particles when flue gas temperatures are below 500°F. [T.1715, T.1342-1343.]

22. The flue gas temperature at the inlet of the proposed facility's particulate control device is estimated to be 425-475°F. [DER Exhibit 2, p.40]

23. Electrostatic precipitators are less efficient than filter systems (baghouses) for removing particulate matter in the submicron-sized particle range. [T.856, T.1713-14]

24. The facility proposes to emit the acid gas Fluoride, uncontrolled, at the rate of 0.23 lbs per ton of refuse combusted, or 108.6 TPY emitted. The Significant Emission Rate for Fluorides listed in Florida Administrative Code Rule 17-2.500, Table 500-2, is three (3) tons per year. [DER Exhibit 2, p. 33A.]

25. The facility proposes to emit Sulfuric Acid Mist, uncontrolled, at a rate of 0.047 lbs./MBtu, or 200 TPY. The Significant Emission rate for Sulfuric Acid Mist listed in FAC Rule 17-2.500, Table 500-2, is seven (7) tons per year. [DER Exhibit 2, p.33A.]

26. The facility is estimated to emit HCl, uncontrolled, at 5252 tons per year. With 90% control as proposed by the Department, the facility will emit 120 pounds per hour, or 525 tons per year. [DER Exhibit 2, p. 47.]



27. The release of HCl gas from the combustion of polyvinyl chloride (PVC) plastics is a major contributor to HCl emissions from MSW incinerators. [T.1710.]

28. The plastics content of refuse can vary widely from load to load, city to city. [T.1738-1739.]

29. The plastics content of refuse was the subject of an EPA sponsored study in 1968. The study indicated that a 300-400% increase in plastics in refuse between the years 1968 and 2000 could be expected. [T.1711.]

30. The Environmental Protection Agency presently requires hazardous waste incinerators emitting more than four (4) pounds of HCl per hour to achieve removal efficiency of up to 99%. A minimum of 99% removal efficiency is required when removal at 99% will not reduce emissions to four pounds per hour. [DER Exhibit 2, p. 47.]

31. SO<sub>2</sub>, NO<sub>x</sub>, and HCl are identified precursors to possible acid formation and subsequent acidic rain. [DER Exhibit 2, p. 54].

32. Flue gas controls are the most conventional means of reducing HCl, fluorides, and Sulfuric Acid Mist emissions from MSW incinerators. ESP's do not provide any control of HCl or other acid gases. [T.1615 and DER Exhibit 2, p.44.]

33. For the proposed facility, PSD review is required for Particulate Matter, Sulfur Dioxide, Nitrogen Oxides, Carbon Monoxide, Lead, Fluorides, Sulfuric Acid Mist, Beryllium, and Mercury. [DER Exhibit 2, page 48].

34. The emissions proposed by the County for Particulate Matter, Sulfur Dioxide, Nitrogen Oxides, Carbon Monoxide, Lead, Fluorides, Beryllium, Mercury, and Sulfuric Acid Mist are higher than the Significant Emission Rates for Regulated Air Pollutants contained in Florida Administrative Code 17-2.500, Table 500-2. [DER Exhibit 2, p. 33A]

35. Applicable rules and regulations require an analysis of compliance with applicable air quality standards. These standards include ambient air quality standards ("AAQS") and prevention of significant deterioration ("PSD") requirements. [T.1021-1022.]

36. PSD rules provide that a proposed source cannot result in emissions which, when considered with all other new sources required to be included in the analysis, will exceed certain "increments" over the existing ambient air quality (or "baseline concentrations") established as of a certain date (in this case December, 1977). [DER Exhibit 2, page 52].

37. Computer modeling techniques are used to determine compliance with applicable standards. [T.1026, T.1800.]

38. Air quality impacts from a proposed facility depend on a number of factors, including meteorological conditions (such as the ambient temperature, wind speed and direction, and the turbulence of the atmosphere) and the physical parameters of the proposed emission source, such as the dimensions of the stack (including its height and diameter) and the temperature of the stack gas. [T.1038.]

39. When determining the effect of emissions from a proposed source on an area other than the immediate area, the geographical proximity of the proposed source to the impacted area is also a key factor. [T.1054-1055]

40. Using these factors, computer models predict the impact of air pollutant emissions on the concentration of a pollutant at the ground level at a certain point. [T.1042.]

41. Due to the dimensions of the proposed stack and building, aerodynamic downwash could increase emission concentrations in the immediate location of the facility. [T.1771].

42. The proposed facility's stack is 4.6 meters below the allowed good engineering practices stack height of 65 meters. [T.1074.]

43. An acid gas scrubber would lower the temperature of the flue gas, which would result in a lower plume height. [T.1776-1777].

44. Although a lower plume height would result in deposition closer to the facility and less opportunity for dispersion of pollutants, a scrubber would reduce the amount of emissions coming out of the facility, and reduce the ambient concentrations of those emissions. [T.1779].

45. PSD review requires an analysis of the proposed facility's impact on Class I areas within 100 kilometers of the facility. [T.1764]

46. A Class I area, the Everglades National Park, is located within 100 kilometers of the proposed facility. [T.1764.]

47. Impact analysis indicated that the proposed facility would have a less than significant impact on the Class I area. [T.1765.]

48. The U.S. Department of Interior, National Park Service, determined that the proposed facility would not significantly impact the Everglades National Park. [T.1765]

49. The proposed facility is within an area designated as Class II. [DER Exhibit 2, page 52, T.1027.]

50. The proposed facility's emissions of SO<sub>2</sub> and PM are the only significant sources in the area that will consume PSD increment. Atmospheric dispersion modeling indicates that the concentration increases are less than the maximum allowable amounts. [DER Exhibit 2, p. 52].

51. A de minimus ambient impact level has been defined for fluorides, beryllium, and mercury. The proposed facility is not expected to exceed the de minimus level for these three non-criteria pollutants at the Department's BACT emission limitations. [DER Exhibit 2, p. 55].

52. The modeling analysis predicts that no ambient air quality standards will be exceeded for the criteria pollutants PM, SO<sub>2</sub>, CO, NO<sub>x</sub>, and Pb, based on the emission rates proposed by the Applicant or the Department. [T.1767].

53. Given existing air quality in the area of the proposed facility, emissions from the resource recovery facility are not expected to cause or contribute to a violation of an AAQS. [DER Exhibit 2, pp. 52-53, and T.1767.]

54. PSD requirements also require the use of Best Available Control Technology ("BACT"). A determination of BACT requires an analysis of the energy, environmental, and economic impacts of the proposed facility. BACT was determined for PM, SO<sub>2</sub>, NO<sub>x</sub>, CO, F, Sulfuric Acid Mist, Lead, Mercury, Beryllium, and Visible Emissions. [DER Exhibit 2, p. 48.]

55. In determining BACT for acid gas control, and particulate and heavy metal control, the capital and annual costs of utilizing a baghouse/dry scrubber system are set forth below:

Dry Scrubber/Baghouse

Capital Cost	<u>\$13,000,000.00</u>
Annual Cost	<u>\$ 4,147,100.00</u>

Resulting Emission Rates

Particulate Matter: 0.01 GR/DSCF

(corrected to 12% CO<sub>2</sub>)

Acid Gas Reduction:

HF 95%

SO<sub>2</sub> 70%

HCl 90%

Heavy Metal Reduction: 99%

Cost per ton of refuse burned: \$4.38

[DER Exhibit 1; T. 1334-1339]

56. The cost of controlling SO<sub>2</sub> and HCl emissions alone is estimated at \$1,050 per ton of pollutant removed. This is less than the 1978 EPA guideline of \$2,000 per ton. [T.1605-1606].

57. The average person disposes of five pounds of solid waste per day, or approximately 1,825 pounds per year. [T.1796.]

58. If the average person generates slightly less than one ton of garbage per year, then the cost of disposing that garbage at the proposed facility, with acid gas and particulate control included, is slightly less than \$2.24 per person, per month, or \$26.88 per person, per year. [T.1796.]

59. Using the applicant's cost estimate for add-on acid gas control of \$13.40 per ton of refuse, the cost per person, per month is approximately \$2.99, or \$35.90 per year. [BC Exhibit 185, as amended.]

60. The applicant has estimated the tipping fee (the cost of sending one ton of garbage to the proposed facility) to be \$22.50 initially, increasing to \$26.50 in 1989. [T.70.]

61. The Department and the Applicant differ on what constitutes BACT for PM, SO<sub>2</sub>, Pb, F, and Sulfuric Acid Mist. [DER Exhibit 2, p. 37-38.]

62. The installation of a baghouse to control particulate emissions and lead has been determined to represent BACT. [T.1614.]

63. The use of flue gas control equipment, specifically dry scrubbers, to control SO<sub>2</sub>, F, Sulfuric Acid Mist, and HCl emissions has been determined to represent BACT for these emissions. [T.1614.]

64. Dry scrubbers/baghouses are extremely efficient and reliable in removing acid gases and submicron-sized particulates. [T.1724-1725, T. 1339.]

65. The State of Connecticut has certified a scrubber/baghouse system as BACT for the Mid-Connecticut facility. [T.1604-1605.]

66. The U.S. Department of Interior, National Park Service, agreed with the Florida Department of Environmental Regulation's BACT determination that dry scrubbers and a baghouse constituted Best Available Control Technology for the proposed facility. [DER Exhibit 4].

67. The South Florida Water Management District has filed its report as required by Section 403.507(1)(a), Florida Statutes, and that report does not object to certification of this site subject to certain conditions which are proposed to be adopted as conditions of certification. [DER Exhibit 2, and jointly filed Conditions of Certification.].

68. The Department of Community Affairs has filed its report as required by Section 403.507(1)(a), Florida Statutes, and that report concludes that the proposed project is compatible with the state comprehensive plan. [DER Exhibit 2, p. 17].

69. The State of Florida Department of Environmental Regulation has filed its report as required by Section 403.507(2), Florida Statutes, and has recommended certification of the proposed facility subject to the proposed Conditions of

Certification, including the Department's Air Emission Limitations. [DER Exhibit 2; Jointly filed Conditions of Certification with Exhibit B.].

#### CONCLUSIONS OF LAW

1. The Division of Administrative Hearings has jurisdiction, and this proceeding was heard pursuant to the Florida Electrical Power Plant Siting Act, Chapter 403, Part II, Florida Statutes, and Chapter 17-17, Florida Administrative Code, to consider the subject application for site certification.

2. Notice, in accordance with Chapters 120 and 403, Florida Statutes, and Chapter 17-17, Florida Administrative Code, has been given to all persons and parties entitled thereto, as well as to the general public.

3. The record of this proceeding consists of all pleadings and papers filed herein, including the site certification application the transcripts of all hearings, all orders entered by the Hearing Officer, and evidence and exhibits properly admitted into the record.

4. The purpose of the site certification hearing was to receive testimony and evidence concerning whether the location and operation of the proposed facility will produce minimal effects on human health, the environment, the ecology of the land and its wildlife, and the ecology of state waters and aquatic life, and balance fully the increasing demand for electric power plant location and operation with the above environmental effects. Section 403.502, Florida Statutes, and the Florida Chapter of the Sierra Club v. Orlando Utilities Commission, 436 So.2d 383, 385 (Fla. 5th DCA 1983).

5. The air quality issues are governed by regulations contained in Chapter 17-2, Florida Administrative Code, and in Chapter 40 of the Code of Federal Regulations.

6. Two broad categories of rules can be distinguished: non-attainment rules, or rules governing pollutants emitted in areas with measured concentrations of these pollutants exceeding the air quality standards; and attainment rules, or rules

governing pollutants emitted within areas not exceeding an air quality standard for that pollutant.

7. Broward County is designated a nonattainment area for the pollutant ozone. 40 CFR 81.310 and Rule 17-2.410, F.A.C.

8. For all other pollutants for which an air quality standard exists (criteria pollutants), the county is designated as attainment. 40 CFR 81.310 and Rule 17-2.420, FAC.

9. The proposed facility is considered a new Major Facility pursuant to Table 500-1, Major Facilities Category, 17-2, F.A.C.

10. For each regulated pollutant that the facility proposes to emit that would be equal to or greater than 100 tons per year, the resource recovery facility is considered a major source. FAC Rule 17-2.500(2)(d) 2.b.

11. For the pollutant lead, a source is considered major for emissions that would be equal to or greater than 5 tons per year.

12. All necessary and required governmental agencies were parties to this proceeding, and all required reports and studies were completed and presented to the Department of Environmental Regulation. These include the report of the Department of Community Affairs as to the compatibility of the proposed resource recovery facility with the State Comprehensive Plan, Section 403.507(1)(a), Florida Statutes; the Florida Public Service Commissions report as to the present and future need for electrical generating capacity to be supplied by the proposed facility, Section 403.507(1)(d), Florida Statutes; and the report of the South Florida Water Management District as to the impact of the proposed facility on water resources, Section 403.507(1)(c), Florida Statutes. The record further establishes that the Department of Environmental Regulation conducted or contracted for the enumerated studies required by Section 403.507(2), Florida Statutes, and completed its report and recommendations with respect thereto. The Department of Environmental Regulation recommends certification of the proposed resource recovery facility subject to its recommended conditions of certification, which with the exception of the Air Emission Limitations, have been accepted by the applicant.

13. The oral and documentary evidence adduced at the certification hearing demonstrate that the construction and operational safeguards for the proposed resource recovery facility are technically sufficient for the welfare and protection of the citizens of Florida. If performed in accordance with the recommended conditions of certification, the construction, operation and location of the proposed resource recovery facility are expected to produce minimal adverse effects on human health, the environment, the ecology of land and its wildlife, and the ecology of state waters and their aquatic life. Certification incorporating the conditions proposed by the Department is consistent with the premise of abundant, low-cost electrical energy and is a reasonable balance between those environmental impacts which will occur and the recognized need for the proposed resource recovery facility's electrical generating capacity.

14. The construction and operation of the resource recovery facility at the posed site is compatible with the applicable provisions of the Florida State Comprehensive Plan.

15. The construction and operation of the resource recovery facility at the proposed site will comply with applicable statutes, rules, regulations and other criteria of the South Florida Water Management District, as set forth in Chapter 373, Florida Statutes, Chapter 40E, Florida Administrative Code, and the conditions for certification proposed by the District.

16. Non-attainment review is required for all non-attainment pollutants which have the potential to emit 100 tons per year or more of the affected pollutants, Florida Administrative Code Rule 17-2.510(4). Non-attainment review includes a determination of Lowest Achievable Emission Rate (LAER), and the obtaining of emission offsets.

17. As the proposed facility will emit less than 100 tons of VOC's, the precursor of the non-attainment pollutant ozone, the facility does not have to undergo non-attainment review, including a determination of LAER.

18. The proposed facility is subject to the provisions of the federal New Source Performance Standards, 40 CFR 60, Subpart



E, for incinerators. These rules require that any standard required by BACT shall be at least as stringent as an applicable New Source Performance Standard.

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

20. Rule 17-2.500(2)(f)3, Florida Administrative Code, 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.

21. The emissions proposed by the County for Particulate Matter, Sulfur Dioxide, Nitrogen Oxides, Carbon Monoxide, Lead, Fluorides, Beryllium, Mercury, Sulfuric Acid Mist, and VOC's exceed the significant emission rates for Regulated Air Pollutants contained in Florida Administrative Code Rule 17-2.500, Table 500-2.

22. The applicant and the Department of Environmental Regulation differ over what constitutes BACT for the proposed facility's air emissions. I have carefully considered the evidence and conclude that the emission limits proposed by the Department, with the appropriate technology for achieving such, constitutes BACT.

23. BACT is defined as:

an emission limitation, including a visible emissions standard, based on the maximum degree of reduction of each pollutant emitted which the Department, on a case-by-case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, system and techniques (including fuel cleaning or treatment or innovative fuel combustion techniques) for control of each such pollutant. Rule 17-2.100(22), Florida Administrative Code. (E.S.)

24. Section 17-2.630, Florida Administrative Code, requires the Department give consideration to four areas when making a

determination of Best Available Control Technology (BACT). Those four areas that must be considered include:

(a) Any EPA determination of BACT pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 or 40 CFR Part 61. In no event shall application of BACT result in emissions of any pollutant which would exceed the emissions allowed under 40 CFR Part 60 or 61.

(b) All scientific, engineering, and technical material and other information available to the Department.

(c) The emission limiting standards or BACT determinations of any other state.

(d) The social and economic impact of the application of such technology.

25. The Department gave due consideration and balanced all required factors when understaking the BACT determination for the proposed project.

26. The applicant disputes the BACT determination completed by the Department for Particulate Matter, Sulfur Dioxide, Lead, Fluoride, and Sulfuric Acid Mist. I have considered carefully the evidence and conclude that the emission limitations for these pollutants proposed by Department constitute BACT. The control technology proposed by the applicant, that being only an electrostatic precipitator, does not constitute BACT.

27. The department's determination of BACT is further justified when the facility's proposed emissions of HCl are considered. Although the Department does not have an emission-limiting standard for HCl emissions from MSW incinerators, testimony and evidence adduced as the final hearing establish conclusively that the facility will be a major source of HCl emissions, HCl emissions have the potential to create adverse environmental impacts, and that the control technology proposed by the applicant will not provide control for HCl emissions. As required by the holding in McDonald v. Department of Banking and Finance, 346 So.2d 569 (Fla. 1st DCA 1977), the Department has the authority to protect and enhance the air quality of Florida, and appropriately defended its emerging policy of regulating HCl Emissions from MSW incinerators at the final hearing.

28. The air quality impact analysis required by the PSD regulations for the proposed facility included an analysis of

existing air quality; a PSD increment analysis for SO<sub>2</sub> and PM only; an AAQS analysis; an analysis of impacts on soils, vegetation, and acid rain, and growth-related air quality impacts; and a "Good Engineering Practice" stack height determination.

29. In 1978, E.P.A. published a N.S.P.S. guideline for reasonableness of cost that suggested that costs up to \$2,000 per ton of pollutant control was reasonable. [T. 1605, 1811]. This guideline has not been revised since it was promulgated, and while it still has some value as a comparative guideline, I do not consider it conclusive on the question of costs per ton of pollutant removed.

RECOMMENDED ORDER

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

IT IS RECOMMENDED THAT:

1. South Broward Resource Recovery Facility Project, Inc., be granted certification pursuant to Chapter 403, Part II, Florida Statutes, for the location, construction, and operation of the proposed resource recovery facility, as proposed in the application and evidence of record;

2. Certification be subject to the Conditions of Certification, including the Air Emission Limitations proposed by the Department, and which are attached to this Recommended Order as Appendix I.

Respectfully submitted and entered this \_\_\_\_\_ day of April, 1986, in Tallahassee, Florida.

\_\_\_\_\_  
WILLIAM J. KENDRICK  
Hearing Officer  
Division of Administrative Hearings  
The Oakland Building  
2009 Apalachee Parkway  
Tallahassee, Florida 32301  
Telephone: (904) 488-9675

Filed with the Clerk of the  
Division of Administrative Hearings  
this \_\_\_\_\_ day of April, 1986, in  
Tallahassee, Florida.

Copies furnished:

See attached page

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that an original and one copy of the foregoing State of Florida Department of Environmental Regulation's Proposed Findings of Fact, Proposed Conclusions of Law and Proposed Recommended Order was provided by Hand-Delivery to WILLIAM J. KENDRICK, Hearing Officer, Division of Administrative Hearings, The Oakland Building, 2009 Apalachee Parkway, Tallahassee, Florida 32301; and by U.S. Mail this 31st day of January, 1986, and by U.S. Mail this 31st day of January, 1986 to:

Clifford A. Schulman, Esquire  
Timothy A. Smith, Esquire  
Kerri L. Barsh, Esquire  
Greenberg, Traurig, Askew, Hoffman,  
Lipoff, Rosen & Quentel, P.A.  
1401 Brickell Avenue, 7th Floor  
Miami, Florida 33131

David L. Jordan, Esquire  
2751 Executive Center Circle, East  
Tallahassee, Florida 32301

Elizabeth D. Ross, Esquire  
Irene Kennedy Quincey, Esquire  
South Florida Water Management  
District  
3301 Gun Club Road  
West Palm Beach, Florida 33402

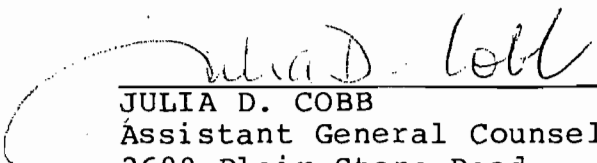
J. Robert Miertschin, Jr., Esquire  
2801 Ponce de Leon Boulevard  
Suite 250  
Coral Gables, Florida 33134

Frank A. Kreidler, Esquire  
521 Lake Avenue, Suite 3  
Lake Worth, Florida 33460

Charles Lee  
Senior Vice President  
Florida Audubon Society  
1101 Audubon Way  
Maitland, Florida 32751

DATED this 31st day of January, 1986

STATE OF FLORIDA DEPARTMENT OF  
ENVIRONMENTAL REGULATION

  
\_\_\_\_\_  
JULIA D. COBB  
Assistant General Counsel  
2600 Blair Stone Road  
Tallahassee, Florida 32301  
Telephone: 904/488-9730

STATE OF FLORIDA  
DIVISION OF ADMINISTRATIVE HEARINGS

IN RE: SOUTH BROWARD COUNTY RESOURCE )  
RECOVERY PROJECT, INC. )  
POWER PLANT SITING )  
CERTIFICATION APPLICATION ) CASE NO. 85-1106  
 ) 85-1166  
P.A. 85-21 )  
 ) (CERTIFICATION  
 ) HEARING)

---

RECOMMENDED ORDER

Pursuant to notice, the Division of Administrative Hearings, by its duly designated Hearing Officer, William J. Kendrick, held a public hearing in the above-styled case on November 11-15, 1985, and November 18-22, 1985, at Davie, Florida.

APPEARANCES

For the Applicant:

Clifford A. Schulman, Esq.  
Timothy A. Smith, Esq.  
Kerri L. Barsh, Esq.  
Greenberg, Traurig,  
Hoffman, Lipoff, Rosen &  
Quentel, P.A.  
1401 Brickell Avenue,  
PH-1  
Miami, Florida 33131

For the Department  
of Environmental  
Regulation:

Julia A. Cobb, Esq.  
Richard Tucker, Certi-  
fied Legal Intern  
Department of Environ-  
mental Regulation  
2600 Blair Stone Road  
Tallahassee, Florida  
32301

For the Department of  
Community Affairs:

David L. Jordan, Esq.  
Department of Community  
Affairs  
2571 Executive Center  
Circle, East  
Tallahassee, Florida  
32301

For the South Florida  
Water Management  
District:

Elizabeth D. Ross, Esq.  
Irene K. Quincey, Esq.  
South Florida Water  
Management District  
3301 Gun Club Road  
West Palm Beach, Florida  
33402

For South Broward  
Citizens for A Better  
Environment, Inc:

J. R. Miertschin, Jr., Esq.  
Frank Kreidler, Esq.  
2801 Ponce de Leon Blvd.  
Suite 250  
Coral Gables, Florida  
33134

For the Florida  
Audubon Society  
and Broward County  
Audubon Society:

Charles Lee, Qualified  
Representative  
Florida Audubon Society  
1101 Audubon Way  
Maitland, Florida 32751

PRELIMINARY STATEMENT

On April 8, 1985, South Broward County Resource Recovery Project, Inc. (Applicant), filed its application with the Department of Environmental Regulation (DER) for power plant site certification for a resource recovery facility and landfill to be located in Broward County, Florida. Pursuant to Section 403.508(1) and (2), Florida Statutes, a land use hearing was held before the undersigned Hearing Officer on August 20, 1985, and the Governor and Cabinet, sitting as the Siting Board, entered an Order on October 15, 1985, concluding that the proposed site is consistent and in compliance with existing land use plans and zoning ordinances.

By Order Number 14435 issued on June 4, 1985, the Florida Public Service Commission (PSC) concluded that a need existed for the electrical generating capacity to be supplied by the proposed resource recovery facility. This Order constituted the final report of the PSC required by Section 403.507(1)(b), Florida Statutes, and creates a presumption of public need and necessity, pursuant to Section 403.519, Florida Statutes.

At hearing, the Applicant presented the testimony of 24 witnesses and its Exhibits 1, 2 (Appendix 10.1.5 only), 3-6, 10, 27, 28, 33, 34, 40, 50-52, 54, 58, 59, 68, 69, 72, 73, 79-81, 86, 89-91, 95, 97-106, 109, 110, 112-118, 120-121, 126-133, 136-139, 141-169, 173-176, 178-198, 201; 211, 213-216, and 219 were received into evidence. Applicant Exhibit 2, with the exception of Appendix 10.1.5, was received into evidence for the sole purpose of establishing that an application for power plant site

certification had been filed. Applicant Exhibits 87, 88, 96, and 111 were received into evidence to demonstrate conceptual designs, and not for their truth.

Testifying on behalf of the Applicant were Thomas M. Henderson, accepted as an expert in solid waste management, planning, and implementation; James E. Elias; Ronald J. Mills, accepted as an expert in environmental permitting procedures for resource recovery facilities; Robert J. Snyder, accepted as an expert civil engineer; John M. Klett, accepted as an expert in stationary power engineering; Peter E. Robinson, accepted as an expert in the fields of civil, sanitary and environmental engineering, specializing in the design of storm water control systems, leachate, and liner systems for landfills; Joseph E. Fluet, Jr., accepted as an expert in geosynthetics and geosynthetic design of landfills; Vincent P. Amy, accepted as an expert in groundwater hydrology; James M. Hudgens, accepted as an expert in biology, specializing in wetlands mitigation plans and their institution; James A. Fife, accepted as an expert in mechanical engineering; Mark P. Hepp, accepted as an expert mechanical engineer with special emphasis on the design and performance of power boilers and the application and performance of air pollution control equipment; Howard J. Teas, accepted as an expert in biology, with special emphasis on mitigation plans for wetlands environments and South Florida wetlands; Dalia Germanas, accepted as an expert in chemistry, with emphasis on the constituents and rates of emission of dioxins and related compounds from resource recovery facilities; Robert McCann, accepted as an expert in meteorology and air quality modeling; Allan H. Smith, accepted as an expert in epidemiology, biostatistics, and health risk assessments; Edward T. Wei, accepted as an expert in toxicology and health risk assessment; Robin Hart, accepted as an expert in plant physiological ecology, with emphasis on the effects of acid deposition and other air pollutants on vegetation; Frank J. Mazzotti, accepted as an expert in biology, zoology and herbatology, with emphasis on

crocodilians and their habitat; Oscar Owre, accepted as an expert in ornithology and biology, with emphasis on South Florida avian ornithology; Charles F. Zirrou, accepted as an expert in aviation facilities engineering and planning; Andrew Szurgot, accepted as an expert in environmental engineering; Miroslav Dvirka, accepted as an expert professional engineer, with emphasis on air pollution control equipment for resource recovery facilities; Kennard P. Kosky, accepted as an expert in mechanical and environmental engineering, with emphasis on PSD and BACT analysis; and Jesse R. White, accepted as an expert on marine mammals, with emphasis on manatees and their habitat.

DER presented the testimony of 8 witnesses, and its Exhibits 1-4 and 6-20 were received into evidence. Testifying on behalf of DER were Aaron J. Teller, accepted as an expert in chemical engineering, with emphasis on design efficiency, reliability and cost of air pollution control technology; Hamilton S. Oven, Jr., accepted as an expert in processing and review of power plant siting certification applications, and the applicability of DER rules and standards to such applications; Larry O'Donnell, accepted as an expert in the evaluation of dredge and fill applications, the impact of dredge and fill activities on biological resources, and the impact of dredge and fill activities on DER water quality standards; Barry D. Andrews, accepted as an expert in the review and analysis of stationary air pollution sources for compliance with state and federal regulations, and the review and evaluation of air pollution control technologies and strategies; Jack D. Lauber, accepted as an expert in BACT for control of toxic air contaminants from municipal solid waste resource recovery incineration systems; Edward Svec, accepted as an expert in the review and analysis of air pollution sources for compliance with DER rules and regulations; Thomas G. Rogers, accepted as an expert in meteorology, including air quality impact analysis and air quality modeling; and Clair Fancy, accepted as an expert in air pollution control technology, and the review and analysis of air



pollution sources for compliance with state and federal regulations.

Intervenor, South Broward Citizens for A Better Environment, Inc. (SBC) presented the testimony of 7 witnesses, and its Exhibits 2-3, 6,7, and 9-23 were received into evidence. Testifying on behalf of SBC were Craig Smith, accepted as an expert in manatee habitat in Broward County, Florida; Daniel Austin, accepted as an expert in ecology of habitats and botany; Curtis M. Burney, accepted as an expert in marine chemistry and microbiology; George Fitzpatrick, accepted as an expert in wetland ecology; Herbert J. Bauche; David Addison, accepted as an interpretive naturalist of Southwest Florida; and Sherwood Wilkes, accepted as an expert naturalist in identifying, inventorying and categorizing flora and fauna species, reptiles and manatees, including their habitat.

Intervenors, Florida Audubon Society and Broward County Audubon Society (Audubon) called Bernard J. Yokel, accepted as an expert in biology and wetlands ecology, as a witness. Audubon Exhibits 1 and 2 were received into evidence. Seven members of the public testified on their own behalf.

The Applicant, DER, SBC, and Audubon have submitted proposed findings fact, and they have been reviewed and considered. The parties waived the requirement set forth in Section 120.59(2), Florida Statutes, that a ruling be made on each proposed finding.

#### FINDINGS OF FACT

1. South Broward County Resource Recovery Project, Inc (Applicant), <sup>1</sup> proposes to construct a mass burn resource recovery facility (RRF) and two landfills to meet the solid waste disposal needs of approximately 600,000 residents of south

---

<sup>1</sup> The applicant, a for profit Florida corporation, was formed by the Broward County Board of County Commissioners (Broward County) to own and operate the proposed facility. Under the terms of its agreement with the vendor, Signal Environmental Systems, Inc. (Signal), Broward County proposes to transfer ownership of the applicant to Signal. As a wholly owned subsidiary of Signal, the applicant will construct and operate the facility, under a land lease from Broward County, for an initial term of 20 years. To date, a joint operating agency has not been formed between Broward County and the applicant.

Broward County. At present these residents dispose of their solid waste at the County's Davie landfill. That landfill will reach its capacity by February 1987, and must be closed by December 31, 1987.

2. The facility proposed by the applicant will initially consist of three 750 ton per day (TPD) municipal solid waste (MSW) incinerators capable of disposing of 2,250 tons of waste daily, and generating 68.5 megawatts of electrical power. The facilities' ultimate capacity, with four MSW incinerators, will dispose of 3,000 tons of MSW daily.

3. The site for the proposed RRF and landfills is a predominantly undeveloped 248-acre parcel of land situated at the southeast corner of the intersection of US 441 (State Road 7) and State Road (SR) 84. The site is bounded on the north by the right-of-way for I-595, the northerly part of its east boundary by the proposed Ann Kolb Park, the southerly part of its east boundary and the south by the South Fork New River Canal (New River Canal), and on the west by US 441. As sited, the facility is accessible to US 441, a four-lane undivided highway and major roadway in the area, proximate to the solid waste centroid of south Broward County, and buffered from residential neighborhoods by major thoroughfares and commercial/industrial development.

4. The applicant proposes to locate the RRF on the southerly portion of the site and two landfill cells for the disposal of ash residue and nonprocessable solid waste on the northerly portion of the site. The RRF will occupy 50-acres of land, and the landfills approximately 148 acres. Applicant's Exhibit 10, attached hereto as Appendix 1, graphically illustrates the boundaries and proposed development of the site.

#### Impact on Public Lands and Wetlands

5. A majority of the proposed site consists of wetlands. These wetlands include marshy areas, shrub swamps, wax myrtle pastures, open water and swamp forest. Prior to the enactment of DER'S statutory authority, the hydrologic regime of

this historically forested wetland was severely impacted by ditching and diking to further agricultural pursuits.

6. The proposed construction of the RRF is expected to eliminate 15.6 acres of mixed healthy and disturbed wetlands which currently provide some pollutant assimilation and contribute detrital or dissolved organic material to the New River Canal. To mitigate the impact of the removal of 15.6 acres of wetlands at the RRF site, the applicant proposes to restore a 300' swath of severely altered wetlands along the bank of the New River Canal. This project, comprising approximately 15 acres, will restore the area to a functional wetland system by excavating existing berms, grading, and revegetating with native wetland species. When restored, the area will significantly increase wetlands habitat and wildlife populations, increase aquatic productivity, enhance water quality, and improve hydrologic exchange between the area and the New River Canal.

7. The preparation of the site for the construction of the landfill and a retention pond will result in the excavation of 527,600 cubic yards of muck and limerock from a 157 acre site, placing fill for the base of the landfill to an elevation of +5' MSL (mean sea level), and the construction of earthen berms and grassed swales around the landfill.

8. The landfill will consist of two large cells (Cell 1 and 2) which, combined with the north-south FP & L easement, incorporate 133 acres of wetlands. The area of Cell 1 is located to the south within the project site and is vegetated by wax myrtle and exotic and jurisdictional herbaceous plants including sawgrass and cattails. To the north and in the west-half of the area of Cell 2, the vegetation consists of a mixture of cypress, maple, buttonbush, willow, exotics, cattails, and sawgrass. The surface hydrological flow and drainage in the area of Cell 1 and the west-half of Cell 2 has been severely restricted by a raised earthen road which bisects the area of Cell 2 north to south (the north-south FP&L easement). Drainage by ditches along US 441 and SR84, and berms along the New River Canal, have also

affected the flow regimes and water levels in the area of Cell 1 and the west-half of Cell 2. This condition has resulted in progressive infestation by melaleuca, Australian pine, and Brazilian pepper. Due to the severe alteration of the site, the area of Cell 1 and the west-half of Cell 2 offer nominal wetland value.

9. The east-half of Cell 2 (herein after referred to as the sawgrass area) lying east of the north-south FP&L easement, is a healthy 42-acre marsh system which supports an abundance and variety of species. This area is predominantly vegetated by sawgrass, cattails, swamp lily, pickeral weed and arrowhead; however, melaleuca and Brazilian pepper have encroached along the bermed periphery of the site.

10. Abutting the east boundary of Cell 2, is the proposed Ann Kolb Park. The park consists of 135 acres of swamp forest acquired for preservation by the Florida Department of Transportation as part of a mitigation plan developed in the environmental permitting process for construction of I-595. The park area has been designated by Broward County as an area of particular concern.

11. The park is a unique historical wetlands area. The western half of the park is populated by a strand of cypress dating as much as 300 years old. Prior to its deforestation, the sawgrass area was part of the park's cypress strand. Today, the sawgrass area functions as a marsh, with signs that it is slowly returning to the swamp system, and provides a habitat and food source for much of the wildlife in the area. The east half of the park consists of a pond apple slough.<sup>2</sup>

12. The sawgrass area and the park function as an ecological unit. The sawgrass area, with a number of ponds, contains an abundance of organisms which help support the wildlife in the area. Among the food sources available in the

---

<sup>2</sup>The natural beauty and diverse life forms which inhabit the park are starkly demonstrated by the slides which comprise SBC's Exhibit 20.

open hunting space provided by the sawgrass area are crayfish, frogs, small snakes, apple snail, snook, bream and large mouth bass. The park itself provides natural shelter for such diverse species as opossum, bobcat, Florida deer, and owls. While surrounded by urban lands, the sawgrass area and the park have survived as an island of wilderness. Any reduction in the size of this ecosystem would have a negative impact on the wildlife it supports.

13. In addition to the close wildlife ties which exist between the sawgrass area and the park, these areas are also linked by surface water flow. That flow from the sawgrass area to the park carries with it various nutrients, detritus and other elements which help support the food chain and ecological functions of the park.

14. To mitigate the destruction of 133 acres of wetlands in the construction of the land fills, the Applicant proposes to restore or enhance five sites. Site 1 consists of 18 acres located between the New River Canal and the landfill site. This area currently consists of disturbed wetlands and spoil mounds supporting exotic vegetation. While restoration of this area would improve water exchange with the canal and improve water quality and habitat value, it also opens the sawgrass area to the risk of salt water intrusion. Site 2 involves a 15 acre parcel located between proposed Cell 2 and the Ann Kolb Park. This parcel consists of a strip of land 250' to 550' wide extending to the New River Canal. As mitigation, the Applicant proposes to plant a 50' strip of cypress trees along the east side of the proposed landfill berm. Site 3 consists of 16 acres near Hacienda Flores, immediately north of Ann Kolb Park. As mitigation, the Applicant proposes to clear that area of exotic vegetation and replant it in native species. Site 4 consists of a 15 acre parcel at a site known as "Treetops Park," about 4 1/2 miles west of the proposed facility. The Applicants' restoration

plan consists of grading and enhancing hydrological conditions to create 13 acres of sawgrass marsh and 2 acres of hydric hammock within the park's expansive boundary. Site 5 consists of a 74 acre parcel of land located some 12 miles west of the proposed facility. At this site, the "Everglades Restoration Area," the applicant proposes to recreate an artificial sawgrass marsh from former Everglades lands which have been drained, and are currently surrounded by agricultural and residential development. The Applicant proposes to control water flow to the area through an artificial system of pipes and gates connected to the New River Canal.

15. The value of the mitigation at Treetops Park and the Everglades Restoration Area in light of the expense involved, the distance from the proposed facility, and the lack of any ecological relationship between the sites and their surrounding lands, is minimal. The Everglades Restoration Area is within two miles of the eastern boundary of Water Conservation Area No. 3 of the South Florida Water Management District. That Conservation area contains hundreds of thousands of acres of healthy, natural, sawgrass habitat. To artificially create another 74 acres two miles away isolated behind dikes and surrounded by agricultural and residential development, is superfluous. The Treetops Park restoration project would produce another man-made modification of an existing semi-natural area. While of some possible value from a park development perspective it suffers from the same ecological deficiencies as the Everglades Restoration Area.

16. The mitigation plan proposed by the Applicant is inadequate to mitigate the destruction of the high quality wetlands which would underly the east-half of proposed Cell 2, and the disruption of the natural balance existing between the sawgrass area and Ann Kolb Park.

17. Significantly, the U.S. Army Corps of Engineers, while tentatively permitting the project, expressly requested that Broward County investigate alternative sites to replace the sawgrass area in its landfill plans. Broward County is currently

investigating alternative sites to comply with the Corps' request. The evidence of negative impact has not been countered by any showing that the economic viability of Applicant's project would be adversely impacted should the sawgrass area be excluded from the landfill area.

#### Impact on water resources

18. Underlying the proposed site of the RRF and landfill cells is the Biscayne Aquifer. This aquifer supplies fresh water to residents of the region.

19. Except for potential impacts to Ann Kolb Park, discussed supra, the water management system proposed by the applicant provides reasonable assurances that surface and ground waters will not be adversely impacted by the proposed facility. Stormwater runoff from active areas within a landfill cell will be treated as leachate and pumped to the Hollywood Wastewater Treatment Plant. Underlying the cells, a double liner leachate collection system will assure that leachate will not enter the groundwater. The double liner system will consist of layers of geosynthetic textile materials, including two high density polyethylene (HDPE) liners and a series of soil and textile cushions and filter fabrics designed to prevent damage to the liners and obstruction of the collection system. As added protection, the Applicant will install a secondary leachate collection system between the two layers of HDPE material to capture any potential leakage from the primary system, and pump it to a nearby monitoring pump for early detection. Finally, monitoring wells will be installed on the landfill site to detect any increased levels of pollutants which would signify a potential leak in the liner system. If such pollutants are detected, they would be contained and removed by interceptor wells.

20. Upon final completion of each landfill, the Applicant will "cap" the cell with approximately two feet of a mixture of soil and bentonite. This clay-like material will act as an impermeable cover over the land-fill and prevent further

generation of leachate by prohibiting rainfall from entering the completed landfill. Additionally, the Applicant will cover the "cap" with vegetation to stabilize the landfill and prevent erosion.

21. As part of the surface water management system, the Applicant proposes to construct a perimeter swale system around the landfill cells to capture stormwater runoff from inactive areas. Under the Applicant's double-dyked system, an internal dyke will surround each landfill to prevent stormwater from entering the landfill and contacting ash residue. An external dyke will detain the stormwater, allowing it to percolate slowly into the ground and adjacent wetlands or convey it by culverts to a storm water retention pond established at the eastern portion of Cell 2. During peak storm periods, discharges via stormwater outfall diversion structures will allow water to flow over an elevated weir and discharge into a dispersion pond before flowing over the on-site mitigation area into the New River Canal. The Applicant has agreed to monitor the quality of the stormwater runoff.

#### Air quality impact analysis

22. Since the proposed facility will emit a regulated pollutant at a rate equal to or greater than 100 tons per year (TPY), the project is classified as a major new facility, and subject to New Source Review (NSR)- Prevention of Significant Deterioration (PSD) for all pollutants it will emit in PSD - significant amounts.<sup>3</sup> NSR requires an ambient air quality analysis for any pollutant for which national or state ambient air quality standards have been established (criteria pollutants) to assure that the emission levels will not cause or contribute to a violation of ambient air quality standards (AAQS) or any applicable maximum allowable increase (a PSD - increment

---

<sup>3</sup>Table 500-2, Rule 17-2.500 F.A.C., establishes a "significant emission rate" in TPY or pounds per year (PPY) for regulated pollutants. If the anticipated emission rate of a pollutant equals or exceeds the established significant emission rate, the pollutant is subject to the NSR requirements.



analysis). For each pollutant subject to NSR requirements for which no national or state AAQS have been established, NSR requires air quality monitoring to assess ambient air quality for that pollutant in the area to be affected. Additionally, NSR requires that the facility apply the Best Available Control Technology (BACT) for each pollutant subject to NSR requirements.

23. Pertinent to this proceeding, the pollutants subject to NSR requirements are the criteria pollutants particulate matter (PM), sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), volatile organic compounds (VOC), and lead (Pb), and the non-criteria pollutants fluoride (Fl), sulfuric acid mist, beryllium (Be), mercury (Hg), and arsenic (As).

24. To analyze existing air quality, the applicant relied on preconstruction monitoring data collected in accordance with Environmental Protection Agency (EPA) approved methods. To perform the AAQS analysis and PSD-increment analysis, the applicant used the EPA approved Industrial Source Complex air quality dispersion model.<sup>4</sup> In completing the model, the applicant estimated the capacity of the facility at 115 percent of its name plate capacity, a conservative approach, and estimated the emission rates of the regulated pollutants based on test results from similar facilities.

25. The applicant's atmospheric dispersion modeling established that the emission rate of the criteria pollutants pertinent to this proceeding (PM, SO<sub>2</sub>, NO<sub>x</sub>, CO, and Pb)<sup>5</sup> will not

---

<sup>4</sup>The Industrial Source Complex air quality dispersion model is utilized to predict ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area and volume sources. The model incorporates elements for plume rise, transport by the mean wind, and dispersion. Due to the physical layout of the facility, aerodynamic downwash from the facilities' stack is not reasonably expected to occur.

<sup>5</sup>The Department and EPA designate geographic areas which meet AAQS for a pollutant as "attainment," and those which do not meet AAQS as "nonattainment." Broward County is designated as an attainment area for all criteria pollutants except ozone. Under such circumstances the applicant would normally be required to undergo "nonattainment-new source review" for the pollutant ozone. However, where, as here, less than 100 TPY of VOC (the regulated pollutant for ozone) will be emitted from the facility, nonattainment review is unnecessary, and ozone (VOC) is not a pollutant of concern in this proceeding.

cause or contribute to a violation of primary or secondary AAQS.<sup>6</sup> The model further established that the emissions from the facility will not cause a violation of the PSD-increment standards established for SO<sub>2</sub> and PM.<sup>7</sup>

26. In addition to meeting AAQS and PSD-increment standards, NSR also requires a further air quality analysis for the non-criteria pollutants which are expected to be emitted in excess of significant emission rates unless their concentrations are predicted to fall below the "de minimus ambient impact" level established by Table 500-3, Rule 17-2.500, F.A.C. In this case, the evidence establishes that the predicted emission rates for Fl, Be and Hg are below the de minus levels requiring further analysis. An analysis of sulfuric acid mist and As was not required since an appropriate monitoring method has not yet been developed for these pollutants.

Best Available Control Technology (BACT)

27. Although the applicant has met the monitoring and air quality analysis requirements of NSR, NSR also requires that the applicant apply the Best Available Control Technology (BACT) for each pollutant the facility will emit in excess of the significant emission rates established by Table 500-2, 17-2.500, F.A.C. BACT is defined by Rule 17-2.100(22), F.A.C. as:

An emission limitation, including a visible emissions standard, based on the maximum degree of reduction of each pollutant emitted which the Department, on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems and techniques (including fuel cleaning or treatment or innovative fuel combustion techniques) for control of each such pollutant.

28. DER and the applicant differ on what constitutes BACT for the control of PM, SO<sub>2</sub>, Pb, Fl and sulfuric acid mist.

---

<sup>6</sup>Federal and state laws establish primary AAQS to protect the public health and secondary AAQS to protect the public interest in animal and plant life, property, visibility, and atmospheric clarity.

<sup>7</sup>The PSD-increments represent the amount that new sources in an area may increase ambient ground-level concentrations of SO<sub>2</sub> and PM over the concentrations that existed on December 27, 1977<sup>2</sup> (the "baseline date").

DER advocates as BACT an emission limitation achievable through application of a baghouse to control PM and Pb, and flue gas control equipment (dry scrubbers) to control SO<sub>2</sub>, F1, sulfuric acid mist and HCL (a non regulated pollutant)<sup>8</sup>. The applicant asserts that the emission limitations achievable through the use of MSW, a low-sulfur content fuel, to control SO<sub>2</sub>, the use of electrostatic precipitators (ESPs) to control PM and Pb, and the uncontrolled discharge of F1 and sulfuric acid mist, constitute BACT. Resolution of the BACT issue requires an evaluation of the energy, environmental, and economic impacts that would be occasioned by the different emission limitation standards proposed by DER and the applicant.

29. At 115 per cent of its initial nameplate capacity, the proposed facility will emit PM, SO<sub>2</sub>, Pb, F1 and sulfuric acid mist at the following rates, compared to the PSD significant emission rates:<sup>9</sup>

<u>Pollutant</u>	<u>Emission Rate</u>	<u>PSD-Significant Emission Rate</u>
PM	328.8 TPY	25 TPY
SO <sub>2</sub>	2,443.6 TPY	40 TPY
Pb	113.3 TPY	0.6TPY
F1	111.1 TPY	3 TPY
Sulfuric Acid Mist	12.3 TPY	7 TPY

30. Adoption of DER's limitation standards would result in a reduction of PM to .015 GR/DSCF<sup>10</sup> corrected to 12% CO<sub>2</sub>, heavy metals (Pb, Be, cadmium and zinc) by 99%, and of hydrogen fluoride (HF), SO<sub>2</sub>, and HCL by 95%, 70% and 90%, respectively. Adoption of the applicant's limitation standards, would control the emission of PM to .03 GR/DSCF corrected to 12%

---

<sup>8</sup>Although DER sought to regulate HCL by non-rule policy, it failed to establish any adverse impacts which could be reasonably anticipated by its emission, or to otherwise explicate its policy. Accordingly, there exists no rational basis to support the regulation of HCL in this case.

<sup>9</sup>Applicant's Exhibit 2, Appendix 10.1.5.

<sup>10</sup>Per standard cubic foot of dry gas.

CO<sub>2</sub>, and would not further abate the discharge of SO<sub>2</sub>, Pb, Fl, or sulfuric acid mist.

31. The capital and annual cost for the baghouse/dry scrubber system can be expressed as a factor of cost per ton of pollutant removed or cost per ton of MSW incinerated. The cost per ton of pollutant removed, when the facility is operated between 85 and 115 percent of capacity, is calculated to be:

<u>Pollutant</u>	<u>85%</u>	<u>100%</u> <sup>11</sup>	<u>115%</u>
PM	\$3,719	\$3,232	\$2,744
SO <sub>2</sub> , Fl, <sup>12</sup> H <sub>2</sub> SO <sub>4</sub>	\$3,670	\$3,147	\$2,623

The cost per ton of MSW incinerated is approximately \$6.00.<sup>13</sup>

32. At hearing, the only objective standard advanced to establish a reasonable cost for removal of these pollutants was a 1978 EPA guideline. That guideline suggested a cost factor of \$2,000 per ton of pollutant removed as reasonable; however, in light of the significant inflation rate experienced in the late 1970's and early 1980's, that guideline is unreliable. Therefore, there was not shown an objective standard against which the cost of removal of these pollutants can be compared.

33. The environmental benefit to be gained by the adoption of DER's standards was shown to be minimal. The emission rates proposed by the Applicant will consume a nominal percentage of AAQS and PSD-increments, and will produce no significant adverse effects on human health, the environment, the

---

<sup>11</sup>The applicant calculated the cost at 85 percent and 115 per cent capacity. Simple interpolation yields the cost per ton of pollutant removed at 100 percent capacity.

<sup>12</sup>The applicant also presented computations based on the cost per pollutant removed. Since SO<sub>2</sub>, Fl, and H<sub>2</sub>SO<sub>4</sub> will be removed by the same system it is more appropriate to relate cost to pollutants removed en masse. Additionally, although not factored into this cost estimate, the system will also remove heavy metals (Pb, Be, cadmium and zinc) by 99 percent.

<sup>13</sup>The applicant also advanced figures for cost per ton of pollutant removed and cost per ton of MSW incinerated which included a provision for lost revenues based on its assertion that the baghouse/dry scrubber system was unreliable. The systems reliability has, however, been established at 98-100 per cent.

ecology of the land and state waters and their wildlife and aquatic life. While the emission levels proposed by the Applicant for PM, SO<sub>2</sub>, Pb, Fl, and sulfuric acid mist are above the PSD-Significant Emission Rate, their concentrations are, with minor exception, well below the "de minimus ambient impact" level which would require preconstruction air quality monitoring. Adoption of DER's standards, while reducing the bulk loading of pollutants into the atmosphere, was not shown to be of any benefit to the environment, public health, or the future economic and industrial development of the area.

34. The last element of the BACT analysis requires an examination of the energy effects of the proposed limitation standards. This energy impact assessment, as opposed to increased energy costs which were addressed in the annual operating costs of the system, requires a consideration of the actual energy consumed (i.e., kilowatt hours) by imposition of the limitations. To limit PM emissions to .015GR/DSCF by a baghouse/dry scrubber system would increase energy consumption by 41 percent.

35. At 100 percent capacity, compliance with DER's limitations would cost \$4,927,500 annually, provide no demonstrated benefit to the environment, and increase energy consumption by 41 percent. A balancing of the energy, environmental and economic impacts of available methods, systems and techniques establishes that the emission limitations proposed by the Applicant are BACT.

#### CONCLUSIONS OF LAW

1. The Division of Administrative Hearings has jurisdiction over the parties to, and the subject matter of, these proceedings.

2. While recognizing the need and demand for increased power generation facilities, it is the policy of this State to ensure that the location and operation of electrical power plants will produce minimal adverse effects on human health, the environment, the ecology of the land and state waters and their

wildlife and aquatic life. Thus the need and demand for electrical power is to be balanced with the broad interests of the public. This balancing requires a consideration of the provision of abundant, low-cost electrical energy, technically sufficient operational safeguards and the need versus environmental impacts resulting from construction and operation of the facility. Section 403.502, Florida Statutes.

3. The evidence adduced at the certification hearing established that the construction and operational safeguards for the proposed RRF, landfill Cell 1, and the western half of landfill Cell 2, are technically sufficient for the welfare and protection of the citizens of Florida. If performed in accordance with the recommended conditions of certification attached hereto as Appendix II, the construction, operation and location of this portion of the facility are expected to produce minimal adverse effects on human health, the environment, the ecology of the land and its wildlife, and the ecology of state waters and their aquatic life. Certification of this portion of the applicant's proposal is consistent with the premise of abundant, low-cost electrical energy and is a reasonable balance between those minimal environmental impacts which will occur and the recognized need for the proposed facility.

4. The evidence failed to establish, however, that the construction and operation of the eastern half of Cell 2 would produce minimal adverse effects on the environment, the ecology of the land and state waters and their wildlife and aquatic life. Further, the applicant failed to establish any need for the construction of the eastern half of Cell 2 to render its project economically viable. A refusal to certify this portion of the applicant's proposal is not inconsistent with the premise of abundant, low-cost electrical energy, and is a recognition of the adverse environmental impacts which would occur without any demonstrated need.

Based on the foregoing Findings of Fact and Conclusions of Law, it is

RECOMMENDED that the Governor and Cabinet, sitting as the Siting Board, enter a Final Order:

1. Granting certification for the location, construction and operation of the proposed RRF and landfill Cell 1 and so much of the landfill Cell 2 as extends west of the FP & L north-south easement, subject to the conditions of certification attached to this Recommended Order as Appendix II and subject to the following additional conditions:


A. The offsite mitigation proposed by the applicant at Sites 4 and 5 be deleted as required mitigation for this project.

B. The onsite mitigation proposed by the applicant at Site 1 be deferred until additional study is conducted to assure that removal of the berm will not adversely impact the sawgrass area and Ann Kolb Park by permitting the intrusion of salt water.

C. The onsite mitigation proposed for Site 2 (the sawgrass area) be deleted and the Applicant be required to develop and implement, at its expense, a mitigation plan to include removal and control of exotic vegetation in the sawgrass area east of the FP & L north-south easement.

2. Denying certification for the location, construction and operation of so much of landfill Cell 2 as extends east of the FP & L north-south easement.

DONE AND ORDERED THIS 8<sup>th</sup> day of April, 1986, at Tallahassee, Florida.

  
WILLIAM J. KENDRICK  
Hearing Officer  
Division of Administrative Hearings  
Oakland Building  
2009 Apalachee Parkway  
Tallahassee, Florida 32301  
904/488-9675

FILED with the Clerk of the  
Division of Administrative  
Hearings this 8<sup>th</sup> day of  
April, 1986.

Copies furnished:

See Next Page

Case No. 85-1106

Copies Furnished:

Honorable Bob Graham  
Governor  
The Capitol  
Tallahassee, Florida 32301

Honorable George Firestone  
Secretary of State  
The Capitol  
Tallahassee, Florida 32301

Honorable Jim Smith  
Attorney General  
The Capitol  
Tallahassee, Florida

Honorable Gerald A. Lewis  
Comptroller  
The Capitol  
Tallahassee, Florida 32301

Honorable Ralph Turlington  
Commissioner of Education  
The Capitol  
Tallahassee, Florida 32301

Honorable Doyle Conner  
Commissioner of Agriculture  
The Capitol  
Tallahassee, Florida 32301

Honorable Bill Gunter  
Insurance Commissioner and  
Treasurer  
The Capitol  
Tallahassee, Florida 32301

Timothy A. Smith, Esq.  
Attorney's for Broward County  
1401 Brickell Avenue, Ph-1  
Miami, Florida 33131

Julia D. Cobb, Esq  
Department of Environmental  
Regulation  
2600 Blair Stone Road  
Tallahassee, Florida 32301

C. Lawrence Keesey, Esq  
Department of Community Affairs  
2571 Executive Center Circle, E.  
Tallahassee, Florida 32301

Elizabeth D. Ross, Esq.  
South Florida Water  
Management District  
3301 Gun Club Road  
West Palm Beach, Florida 33402

Steve Tribble, Clerk  
Florida Public Service Commission  
101 East Gaines Street  
Tallahassee, Florida 32301

Victoria Tschinkel, Secretary  
Department of Environmental  
Regulation  
2600 Blair Stone Road  
Tallahassee, Florida 32301

J. R. Miertschin, Jr., Esq.  
2801 Ponce de Leon Blvd.  
Suite 250  
Coral Gables, Florida 33134

Charles Lee  
Florida Audubon Society  
1101 Audubon Way  
Maitland, Florida 32751



BEFORE THE GOVERNOR AND CABINET  
SITTING AS THE SITING BOARD

IN RE: SOUTH BROWARD COUNTY RESOURCE )  
RECOVERY PROJECT, INC. ) DOAH CASE NOS. 85-1106  
POWER PLANT SITING ) 85-1116  
CERTIFICATION APPLICATION ) OCG FILE NO. 85-0357  
PA 85-21 )  
\_\_\_\_\_ )

RESPONSE TO EXCEPTIONS

Pursuant to Section 17-103.200(1), FAC, the State of Florida Department of Environmental Regulation hereby files its Response to Exceptions filed by the Applicant, and by the Audubon Society.

Florida and Broward County Audubon Societies' Exceptions:

Audubon requests that the Siting Board amend Paragraph 4 of the Hearing Officer's Conclusions of Law to include a legal conclusion that approval of the eastern one-half of Cell 2 would be specifically contrary to the provisions of Section 403.918(2)(b), F.S.

In response, the Department asserts that Audubon's interpretation of the mitigation section of the Warren S. Henderson Wetlands Protection Act is neither consistent with the Legislature's intent, nor a reasonable interpretation of the statute.

Audubon interprets Section 403.918(2), F.S., to require an applicant whose project is unpermittable under the Department's dredge and fill permitting criteria to consider alternatives to the project before it can even propose mitigation to the Department. To support this argument, Audubon places emphasis on the one word "otherwise" found in Section 403.918(2)(b), F.S.

The Department takes the position that the applicant has the option of proposing an alternative design or project if the applicant's original proposal is unacceptable. However, it would be unreasonable to require alternatives be considered prior to allowing any mitigation proposal. In adopting the language contained in Section 403.918(2)(b), F.S., it was the Legislature's intent that the Department had to at least consider mitigation

proposals. Attempts to amend the Henderson Act to require applicants to propose alternatives prior to proposing mitigation were unsuccessful.

If an applicant can meet the permitting criteria, either by design of the project or by mitigating adverse impacts, there is no reason to require an applicant to build a different project merely because the Department may find the alternative design more acceptable. If consideration of alternatives was required prior to proposing mitigation, the alternative of not building the project would have to be considered, and the Department would never get to consideration of a mitigation proposal.

The Department's interpretation of Section 403.918(2)(b), F.S., does not suggest that alternatives are not considered. In fact, the Department is mandated at Section 403.92, F.S., to identify for the applicant acceptable alternatives if it issues an intent to deny a permit.

The Department urges the Siting Board to reject Audubon's request to amend Paragraph 4 of the Hearing Officer's Conclusions of Law.

The Applicant, Broward County's Exceptions:

Paragraph 4 of the Applicant's Exceptions to the Hearing Officer's Recommended Order requests that the Siting Board overturn the Finding that cost revenues could be excluded from consideration of the economic impacts of a scrubber/baghouse versus an ESP, due to the finding that a scrubber/baghouse is 98-100 per cent reliable.

The Department's response is that the Hearing Officer, in this finding, correctly concluded that there would be no lost revenues attributable to the use of a dry scrubber/baghouse, due to their operating reliability of 98-100 per cent.

The record is clear, as is the Recommended Order, at p.16, n.13, that lost revenues, due to operation inefficiencies, are an appropriate item for consideration when evaluating the economic impacts, and costs, of a BACT candidate. However, the record is also clear that for the Department's BACT recommendation of a

dry scrubber/baghouse, there would be no lost revenues due to the dry scrubber/baghouse system's operating efficiency of 98-100 per cent.

There is competent, substantial evidence in the record to support the Hearing Officer's finding. Therefore, it is not appropriate to now request that the Siting Board re-weigh the evidence and testimony adduced at the Certification Hearing. Forehand v. School Board of Washington County, 481 So.2d 953 (Fla. 1st DCA 1986). While the Department certainly agrees that lost revenues due to operating inefficiencies are an appropriate consideration when comparing candidates for BACT (See Memorandum of Law, Issue 3, attached), it is clear from the record and the Recommended Order that because a dry scrubber/baghouse is 98-100 per cent reliable, lost revenues do not apply to the BACT determination for the South Broward County Resource Recovery Facility. Therefore, the Department urges that the Siting Board reject the Applicant's request that the Board find that lost revenues are an appropriate consideration when comparing an ESP versus a dry scrubber/baghouse for this facility.

Paragraph 5 of the Applicant's Exceptions requests that the Board make a finding that \$2,000 per ton of pollutant removed is the "upper limit of acceptable costs for the control of any of the pollutants but is not applicable to many of them, including particulate matter." While the Department is not clear exactly what the Applicant means by this request, the Department's response is that the Hearing Officer clearly and correctly determined that the U.S. Environmental Protection Agency's 1978 guideline of \$2,000 per ton of pollutant removed is out-of-date. Even if it were adjusted for inflation, it would still not provide an accurate comparison of the costs of controlling pollutants via different control strategies. When promulgated in 1978, EPA did not include in this \$2,000 figure an analysis of the costs of controlling toxic air pollutants. This was not an EPA priority at that time. However, today the scientific and regulatory community is convinced that there is a need to control emissions of toxic air pollutants and heavy metals.

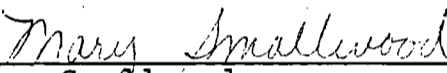
**Best Available Copy**


Because some of these emissions are so toxic, and because most are emitted in minute quantities, it is entirely reasonable to expect a source to control them at a cost equal to or above the 1978 figure of \$2,000, adjusted for inflation to 1986 dollars.

However, as the Hearing Officer's finding was based on competent, substantial evidence in the record, the Siting Board is precluded from re-weighing the evidence the Hearing Officer considered in making his findings. Forehand v. School Board of Washington County, supra.

Any additional finding, as requested by the Applicant, would be contrary to the evidence in the record. Therefore, the Department requests that the Siting Board reject this request by the Applicant.

Respectfully submitted,

  
\_\_\_\_\_  
Mary Smallwood  
General Counsel


  
\_\_\_\_\_  
Julia D. Cobb  
Assistant General Counsel

STATE OF FLORIDA DEPARTMENT  
OF ENVIRONMENTAL REGULATION  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32301  
Telephone: 904/488-9730

**Best Available Copy**

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of the foregoing RESPONSE TO EXCEPTIONS was furnished to the following at their respective addresses by United States Mail this 5th day of May, 1986.

  
\_\_\_\_\_  
JULIA D. COBB  
Assistant General Counsel

STATE OF FLORIDA DEPARTMENT  
OF ENVIRONMENTAL REGULATION  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32301  
Telephone: (904) 488-9730

Copies Furnished:

Honorable Bob Graham  
Governor  
The Capitol  
Tallahassee, Florida 32301

J. R. Miertschin, Jr., Esq.  
2801 Ponce de Leon Blvd.  
Suite 250  
Coral Gables, Florida 33134

Honorable George Firestone  
Secretary of State  
The Capitol  
Tallahassee, Florida 32301

Charles Lee  
Florida Audubon Society  
1101 Audubon Way  
Maitland, Florida 32751

Honorable Jim Smith  
Attorney General  
The Capitol  
Tallahassee, Florida

Frank Kreidler, Esquire  
521 Lake Avenue  
Suite 3  
Lake Worth, Florida 33460

Honorable Gerald A. Lewis  
Comptroller  
The Capitol  
Tallahassee, Florida 32301

Honorable Ralph Turlington  
Commissioner of Education  
The Capitol  
Tallahassee, Florida 32301

Honorable Doyle Conner  
Commissioner of Agriculture  
The Capitol  
Tallahassee, Florida 32301

Honorable Bill Gunter  
Insurance Commissioner and  
Treasurer  
The Capitol  
Tallahassee, Florida 32301

Timothy A. Smith, Esquire  
Attorney's for Broward County  
1401 Brickell Avenue, Ph-1  
Miami, Florida 33131

C. Lawrence Keesey, Esquire  
Department of Community Affairs  
2571 Executive Center Circle, E.  
Tallahassee, Florida 32301

Elizabeth D. Ross, Esquire  
South Florida Water  
Management District  
3301 Gun Club Road  
West Palm Beach, Florida 33402

Steve Tribble, Clerk  
Florida Public Service Commission  
101 East Gaines Street  
Tallahassee, Florida 32301

A LEGAL ANALYSIS OF  
THE INTERPRETATION AND  
APPLICATION OF BACT  
(BEST AVAILABLE CONTROL TECHNOLOGY)

MEMORANDUM OF LAW

TO: The Siting Board

FROM: Julia D. Cobb  
Assistant General Counsel

Florida Department of  
Environmental Regulation  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32301

IN RE: SOUTH BROWARD COUNTY  
RESOURCE RECOVERY  
PROJECT, INC.  
POWER PLANT SITING  
CERTIFICATION APPLICATION  
PA 85-21

DOAH CASE NOS.: 85-1106  
85-1116

OGC FILE NO.: 85-0357

DATE: May 8, 1986

TOPICAL INDEX

	<u>Page</u>
INDEX OF AUTHORITIES AND REFERENCES. . . . .	ii
STATEMENT OF CASE. . . . .	iv
STATEMENT OF FACTS . . . . .	v
QUESTIONS PRESENTED AND BRIEF ANSWERS. . . . .	vi
DISCUSSION:	
I.    WHETHER DETERMINATION OF BACT REQUIRES AN ASSESSMENT OF COMPLIANCE WITH NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS) OR PSD (PREVENTION OF SIGNIFICANT DETERIORATION) INCREMENT CONSUMPTION. . . . .	1
II.   WHETHER DETERMINATION OF BACT REQUIRES A SHOWING THAT THE RESULTANT EMISSION LIMITATIONS WILL OR WILL NOT IMPACT THE ENVIRONMENT AND PUBLIC HEALTH. . . . .	6
III.  WHETHER THE DEPARTMENT CORRECTLY APPLIED BACT TO THE PROPOSED RESOURCE RECOVERY FACILITY. . . . .	9
CONCLUSION. . . . .	16
FOOTNOTES. . . . .	.17



INDEX OF AUTHORITIES AND REFERENCES

<u>CASES</u>	<u>PAGES</u>
<u>Alabama Power v. Costle,</u> 606 F.2d.1068 (D.C. Cir. 1979). . . . .	2
<u>Sierra Club v. Costle,</u> 657 F.2d 298 (D.C. Cir. 1981). . . . .	19
<u>Sierra Club v. Ruckelshaus,</u> 344 F. Supp. 253 (D.D.C. 1972), <u>aff'd</u> by an equally divided court sub nom., <u>Fri v. Sierra Club</u> , 412 U.S. 541 (1973). . . . .	1,2
 <u>STATUTES AND REGULATIONS</u>	
42 U.S.C.S. §7401, <u>et seq.</u> (1982) . . . . .	<u>passim</u>
40 C.F.R. §50.4-.12 (1985) . . . . .	1
39 F.R. 42,510 (1974) . . . . .	2
43 F.R. 26,380 (1978) . . . . .	2
44 F.R. 51,924 (1979) . . . . .	2
<u>Fla. Stat.</u> §403.501, <u>et seq.</u> (1985). . . . .	3
<u>Fla. Stat.</u> §403.061 (1985). . . . .	8
<u>Fla. Stat.</u> §403.087 (1985) . . . . .	8
<u>Fla. Adm. Code</u> , Chapter 17-2 (1985) . . . . .	<u>passim</u>
<u>Fla. Adm. Code</u> , Chapter 17-17 (1985). . . . .	3
 <u>MISCELLANEOUS</u>	
<u>Clean Air Act Amendments of 1976:</u> <u>Report by the Committee on</u> <u>Interstate and Foreign Commerce,</u> 94th Cong., 2d Sess. (1976) . . . . .	.6,7,8,14
<u>Forcing Technology : The Clean Air Act</u> <u>Experience</u> , 88 <u>Yale L.J.</u> 1713 (1979) . . . . .	17

PAGES

Laneau, Alabama Power Co. v. Costle:  
An End to a Decade of Controversy Over  
the Prevention of Significant  
Deterioration of Air Quality?,  
10 Envtl. L. 585 (1980) . . . . . 17

Note, Environmental Law - Non-Degradation-  
Clean Air Act and Amendments Held to  
Mandate a Policy of Preventing  
Significant Deterioration of Air  
Quality in Areas of Relatively  
Clean Air, 2 Fordham Urb. L.J. 136 (1973) . . . . . 17

Terzieu, PSD: New Regulations and  
Old Problems, 5 Harv. Env'tl. L. Rev.  
1390 (1981) . . . . . 6

Tobi, Balancing Economic Growth and  
Air Quality: Prevention of Significant  
Deterioration and the Protection of  
Florida's Future, 1 J. Land Use &  
Env'tl. L. 25 (1985) . . . . . 2

## STATEMENT OF THE CASE

The applicant, South Broward County Resource Recovery Project, Inc., seeks certification of a proposed resource recovery facility pursuant to the Power Plant Siting Act Part, II, Chapter 403, Florida Statutes. The certification hearing was held November 12-22, 1985, by the duly assigned Hearing Officer.

The primary issue in dispute between the applicant and the Department concerned the determination of best available control technology, and what constituted BACT for the proposed facility.

On April 8, 1986, the hearing officer issued to the Siting Board his Recommended Order, which recommended certification of the facility subject to the Conditions of Certification. The Hearing Officer found that the applicant's interpretation and application of BACT was the correct interpretation, and the air pollution control technology proposed by the applicant, that being an electrostatic precipitator, was BACT for the facility.

Thereafter, the Department filed exceptions to the Recommended Order, and challenged the Hearing Officer's findings of fact, mixed with conclusions of law, concerning the legal interpretation and application of BACT.

## STATEMENT OF THE FACTS

The applicant proposes to build a mass burn resource recovery facility and two landfills to meet the solid waste disposal needs of approximately 600,000 residents of south Broward County.

The facility proposed by the applicant will initially consist of three 750 ton per day (TPD) municipal solid waste incinerators capable of disposing of 2,250 tons of waste daily, and generating 68.5 megawatts of electrical power.

Since the proposed facility will emit a number regulated pollutant at a rate equal to or greater than 100 tons per year, the project is classified as a major new facility, and subject to New Source Review (NSR) - Prevention of Significant Deterioration (PSD).

NSR-PSD review by the State of Florida requires an ambient air quality analysis for each pollutant regulated under state or federal law. For pollutants for which standards have not been promulgated, NSR-PSD requires air quality monitoring to assess ambient air quality. Further, the facility must apply the best available control technology (BACT) to reduce its emissions.

The BACT determination is the issue of dispute between the applicant and the Department. The Department determined BACT to be a dry scrubber and fabric filter system. The applicant believed that a correct application of BACT warranted the use of an electrostatic precipitator (ESP).

QUESTIONS PRESENTED AND BRIEF ANSWERS

I. WHETHER DETERMINATION OF BACT REQUIRES AN ASSESSMENT OF COMPLIANCE WITH NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS) OR PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT CONSUMPTION.

Brief Answer: No. BACT is a technology determination. Although the determination requires a balancing of several factors regulations require be considered, achieving NAAQS or PSD increment consumption are not components of that consideration.

II. WHETHER DETERMINATION OF BACT REQUIRES A SHOWING THAT RESULTANT EMISSION LIMITATIONS WILL OR WILL NOT IMPACT THE ENVIRONMENT AND PUBLIC HEALTH.

Brief Answer: No. Again, BACT is a technology determination. No regulation implementing the BACT component of PSD permitting requires any such showing, nor would the requirement of such a showing be consistent with the policies the Clean Air Act seeks to effectuate.

III. WHETHER THE DEPARTMENT CORRECTLY APPLIED BACT TO THE PROPOSED RESOURCE RECOVERY FACILITY.

Brief Answer: Yes. The Department's determination of BACT for the proposed facility complies with the letter, intent, and policy behind the PSD portion of the Clean Air Act, and regulations adopted pursuant thereto.

I. WHETHER DETERMINATION OF BACT REQUIRES AN ASSESSMENT OF COMPLIANCE WITH NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS) OR PSD (PREVENTION OF SIGNIFICANT DETERIORATION) INCREMENT CONSUMPTION.

A determination of BACT is a technology determination, taking a number of considerations into account as part of the determination process. However, nowhere in the Department's rules that define BACT<sup>1</sup> or detail the procedure for determining BACT<sup>2</sup> does it state that one of the requisite considerations includes an assessment of ambient air quality standards or PSD increment consumption. To understand why this is so, it is imperative that an overview of the legislative history and regulatory implementation of the Clean Air Act be undertaken.

The primary goal of the 1970 Amendments<sup>3</sup> to the Clean Air Act was to achieve "National Ambient Air Quality Standards"<sup>4</sup> for a set of "criteria pollutants"<sup>5</sup> in areas that did not meet these standards. This goal was to be accomplished through state implementation plans (SIPs).<sup>6</sup> Each SIP was to include "emission limitations, schedules, . . . timetables, . . . and such other measures as may be necessary to insure attainment and maintenance of the standards."<sup>7</sup>

The Amendments did not explicitly address the issue of whether EPA or the states had to protect air quality in areas that already met the ambient standards. In 1972, the Sierra Club brought suit to resolve this issue.<sup>8</sup> The Sierra Club obtained a decision from the U.S. District Court for the District of Columbia, which was affirmed on appeal, that found that one of the

goals of the 1970 Amendments - to "protect and enhance" the quality of the nations' air - required states to include in their implementation plans measures to prevent significant deterioration of air quality even in those areas meeting the ambient standards.

After the Sierra Club decision, EPA promulgated regulations which placed the prevent significant deterioration policy into each state implementation plan.<sup>10</sup> When Congress amended the Clean Air Act in 1977, it used the 1974 regulations as an outline, and converted the PSD program into a new part of the Act.<sup>11</sup>

When EPA again issued PSD regulations in 1978,<sup>12</sup> almost forty different groups, representing industry and environmentalists filed law suits challenging the regulations. These suits were consolidated and ruled on in Alabama Power v. Costle.<sup>13</sup> On appeal, the appellate court attempted to resolve the vagueness of the Act, and clarified the definitions and interpretations of the Act EPA had promulgated.<sup>14</sup> Following the decision in Alabama Power, EPA amended its regulations to comply with the order of the Circuit Court.<sup>15</sup> The amendments did not significantly change the procedure for application and review of permit applications.<sup>16</sup>

The purposes of the PSD program, paraphrased from the declaration of purpose included in the 1977 Amendments includes:

1. Protect public health and welfare from any actual or potential adverse effect of pollutants which may reasonably be anticipated

despite attainment and maintenance of the national ambient air quality standards. (Emphasis supplied).

2. To preserve, protect, and enhance the air quality in areas of special national or regional natural, recreational, scenic or historic value, and
3. Insure that economic growth will occur in a manner consistent with the preservation of clean air resources.<sup>17</sup>

The PSD program attempts to accomplish these purposes by limiting increases in air pollution. Specifically, in each area that meets the air quality standards for a given pollutant, the PSD program allows a limited increase in the atmospheric concentration of that pollutant, called the increment, from the initial concentration of that pollutant, called the baseline.<sup>18</sup>

The primary method of preventing violations of these increments is a permit process for new sources.<sup>19</sup> To construct or modify a major source, one must obtain a PSD permit. [Under the Power Plant Siting Act, an applicant does not receive a PSD permit from the Department, but instead, a certification which contains conditions for construction and operation. The conditions that are proposed for the air pollution aspects of a project result from a review by DER staff identical to a PSD permit application process.]<sup>20</sup>

One requirement of the PSD permit process is an ambient air quality analysis which must show that the new source will not cause a violation of a NAAQS or a PSD increment.<sup>21</sup>



A second requirement for a PSD permit is that the applicant must show that it will use the Best Available Control Technology.<sup>22</sup>

The Department has incorporated the federal statutory and regulatory air pollution control program into its own regulations.<sup>23</sup>

For facilities subject to New Source Review (NSR) - Prevention of Significant Deterioration (PSD), such as the proposed resource recovery facility, the source must be reviewed in accordance with FAC Sections 17-2.500(5)(b) through (h).

These regulations require that the source must comply with:

1. All applicable emission limitations contained in Part IV of Chapter 17-2, FAC, and 40 CFR Parts 60 and 61.<sup>24</sup>
2. Best Available Control Technology.<sup>25</sup>
3. An ambient impact analysis, demonstrating that the facility will not contribute to a violation of any ambient air quality standard or maximum allowable increase.<sup>26</sup>
4. An additional impact analysis on visibility, soils, vegetation, Federal Class I areas, and area growth.<sup>27</sup>
5. A preconstruction air quality monitoring and analysis, primarily for pollutants for which no national or state ambient air quality standards have been established.<sup>28</sup>
6. Post construction monitoring.<sup>29</sup>

The Department has adopted regulations which define BACT,<sup>30</sup> and establish the procedure for determining BACT.<sup>31</sup>

While BACT is a part of the NSR-PSD preconstruction review, as is a determination of compliance with NAAQS and PSD increment consumption, it is clear that compliance with NAAQS or PSD increment consumption plays absolutely no role in a determination of BACT.<sup>32</sup> It is also clear that there is no weighing of these factors when undertaking a BACT determination.<sup>33</sup> If a facility, upon review under Section 17-2.500, FAC, will exceed an NAAQS or consume an unallowable portion of the increment, then it could not be constructed. But if a facility will comply with NAAQS and not exceed its maximum allowable increment, it must still utilize the Best Available Control Technology to limit its emissions, regardless of the quantity of expected emissions and their impact.

These regulations implement the Congressional intent of preventing significant deterioration of air quality in areas already meeting standards, by assuring the emissions will be controlled to the degree achievable through the application of BACT.

With this understanding of PSD permitting, it is clear that a BACT determination is a wholly separate aspect of the PSD permit application process, and is not related to attainment of NAAQS or PSD increment consumption.

II. WHETHER DETERMINATION OF BACT REQUIRES A SHOWING THAT THE RESULTANT EMISSION LIMITATIONS WILL OR WILL NOT IMPACT THE ENVIRONMENT AND PUBLIC HEALTH.

The primary goal of the PSD program is to limit the loss of clean air through the use of increments.<sup>34</sup> As discussed previously, this goal is implemented through a permit system which permits consumption of increments of clean air. To obtain a PSD permit, the applicant must analyze the effects of emitting the pollutant,<sup>35</sup> and use BACT to control the emissions.<sup>36</sup>

No where in statutory, regulatory, or judicially interpreted law is there a requirement that mandates a showing the emission limitations which result from a BACT determination will benefit or adversely impact public health or the environment. While it is true that one of the factors that must be considered when determining which control technology is BACT is environmental impact,<sup>37</sup> it is clear that this consideration was intended to cover non-air impacts to the environment, such as a sludge disposal problem created by the use of a wet scrubber.<sup>38</sup>

One of the criticisms levelled by industry is that PSD requirements are unrelated to public health and welfare, and that they represent philosophical or aesthetic judgments.<sup>39</sup> Industry argues against both the policies that the government may restrain degradation of air quality in the absence of positive evidence of adverse effects, and that aesthetic concerns are a legitimate component of public welfare.<sup>40</sup>

It is true that the increment system and NSPS, while both mandated by the same statute,<sup>41</sup> represent contrasting

approaches to regulating air quality. The Clean Air Act requires that national air quality standards be set at levels that will eliminate detriment to the public health and welfare from air pollution, which implies that there are threshold levels of pollution below which no harm will occur.

In contrast, the stated purposes of the PSD program are to prevent damage to the public health and welfare that "may reasonably be anticipated to occur, . . . notwithstanding attainment of all national . . . standards."<sup>42</sup>

The explanation for this inconsistency in the approaches of the national standards and PSD program represent tension between the legal need for purposes of a comprehensive statutory program to divide the country into "clean" and "dirty" areas, and the realization of congress, supported by prevailing scientific opinion, that there are no definite thresholds for damage from pollutants, and that not all impacts of pollutants are understood.<sup>43</sup>

Congress recognized the inability to often predict with accuracy, harm to the public health and welfare which would result from the emissions of pollutants at various levels. This gave further momentum to the application of BACT for new, major sources of air pollution. BACT, as envisioned by Congress, would reduce all pollutants being emitted, not just pollutants for which standards had been promulgated.<sup>44</sup> This policy received wide-spread support by numerous organizations following

Congressional consideration of the 1977 Amendments to the Clean Air Act.<sup>45</sup>

The Department's concern over the potential adverse impacts of the emissions of not only the pollutants for which standards have been promulgated, but additionally pollutants such as HCl and dioxins, is further justified by the Department's determination of BACT. It is not presently possible to quantify the adverse effects of pollutants such as HCl and dioxins. But prevailing scientific opinion indicates that these pollutants, especially dioxins, are extremely toxic, and should therefore be controlled. The technology the Department has determined to be BACT controls not only the pollutants for which standards presently exist, but also has the incidental benefit of controlling several pollutants for which no standards have been promulgated.

This policy to control these pollutants not presently regulated is justified by a literal reading of both the Act<sup>46</sup>, and the Department's statutes<sup>47</sup> and regulations.<sup>48</sup>

For the Department to have to prove what degree of benefit will occur at specified levels of emissions, and conversely, for an applicant to attempt to prove that no harm will occur at the levels it proposes to emit, is based neither on a fair or accurate interpretation of the Clean Air Act,<sup>49</sup> or the policies and regulations implementing the Act at both the federal and state level.

The reduction of air pollutants, achieved through BACT, is in and of itself a benefit which the Clean Air Act recognizes.<sup>50</sup>

III. WHETHER THE DEPARTMENT CORRECTLY APPLIED  
BACT TO THE PROPOSED RESOURCE RECOVERY FACILITY

Section 17-2.100(24), Florida Administrative Code,<sup>51</sup>

provides the definition of BACT:

"Best Available Control Technology" or "BACT"  
- An emission limitation, including a visible emission standard, based on the maximum degree of reduction of each pollutant emitted which the Department, on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques (including fuel cleaning or treatment or innovative fuel combustion techniques) for control of each such pollutant.

If the Department determines that technological or economic limitations on the application of measurement methodology to a particular part of a source or facility would make the imposition of an emission standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirement for the application of BACT. Such standard shall, to the degree possible, set forth the emissions reductions achievable by implementation of such design, equipment, work practice or operation.

Each BACT determination shall include applicable test methods or shall provide for determining compliance with the standard(s) by means which achieve equivalent results.

Section 17-2.630, FAC,<sup>52</sup> describes procedurally how BACT determinations are made and generally what considerations are taken into account in determining what BACT is in each particular case.

The considerations are as follows:

(1) Determination.

Following receipt of a complete application for a permit to construct a source or facility

which requires a determination of Best Available Control Technology, the Department shall make a determination of Best Available Control Technology. In making the BACT determination, the Department shall give consideration to:

(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). The above references are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., and may be inspected at the Department's Tallahassee office. In no event shall application of BACT result in emissions of any pollutant which would exceed the emissions allowed under 40 CFR Parts 60 or 61.

(b) All scientific, engineering, and technical material and other information available to the Department.

(c) The emission limiting standards or BACT determinations of any other state.

(d) The social and economic impact of the application of such technology.

It is important to understand that BACT is essentially a technology determination. It is a generalization of the process EPA has used for years to establish federal new source performance standards. It, like NSPS, is based on the policy that all new and modified sources should be controlled to the greatest degree reasonable regardless of the associated ambient air quality impact.

If a new source is complying with NSPS or would comply with BACT and still not be able to comply with the ambient standards or

PSD increments, then it could not be constructed unless the applicant was able and willing to accept a more stringent emission limitation than either BACT or NSPS.

The procedure for making a BACT determination basically involves identifying which process changes or add-on air pollution control equipment can be used with the source to reduce the emissions of each air pollutant of concern.

It is important to note that in the Department's definition of BACT, a reference is made to "controlling each pollutant emitted."<sup>54</sup>

The definition of "air pollutant" is:

"Air Pollutant" - Any substance (particulate, liquid, gaseous, organic or inorganic) which if released, allowed to escape, or emitted, whether intentionally or unintentionally, into the outdoor atmosphere may result in or contribute to air pollution.<sup>54</sup>

Section 17-2.100(8), FAC,<sup>55</sup> defines air pollution as:

"Air Pollution" - The presence in the outdoor atmosphere of the state of any one or more substances or pollutants in quantities which are or may be harmful or injurious to human health or welfare, animal or plant life, or property, or unreasonably interfere with the enjoyment of life or property, including outdoor recreation.

A BACT determination, therefore, must include consideration of emissions of any air pollutant from the facility, if the emission may result in air pollution. Therefore, the determination of BACT is not limited to the pollutants for which the Department has established ambient air quality standards, or



PSD increments, or other emission-limiting standards. This is consistent with the congressional intent in adopting the BACT requirement, discussed supra.

In most cases, there is more than one type of technology or combination of technologies that can be applied to a particular source to reduce the emissions of the various pollutants of concern. Determining what is the maximum degree of reduction possible for each pollutant requires a balancing, because any given technology may be effective in removing one pollutant, and not effective in removing another. Therefore, it is necessary to consider which pollutant emissions are of the most concern in a particular case, and which technology or combination of technologies are most effective on an overall basis.

The various technologies that are feasible from an engineering point of view will often produce differing secondary effects. An example of this secondary consideration which may impact the decision of what technology constitutes BACT is, for example, the use of wet scrubber, which may produce a wet sludge. As a result of the difficulties associated with the disposal of a wet sludge, a dry scrubber which produces a more manageable waste production, may be the better candidate for BACT. Further, wet scrubbers may require a high degree of water consumption. If clean water is needed, and no source is available, water treatment facilities may be required.

A further understanding of how secondary considerations figure into the BACT determination is facilitated by examining

LAER (lowest achievable emission rate) and RACT (reasonably available control technology).

LAER is defined at Section 17-2.100(107), FAC,<sup>56</sup> as:

"Lowest Achievable Emission Rate" or "LAER" - An allowable emission rate determined in accordance with the provisions of 17-2.640. This term applied to a modification means the lowest achievable emission rate for that portion of the facility which is modified.

It is the most stringent emission level that can be achieved, supposedly not considering the cost of control. For a given category of source, BACT equals or is less stringent than LAER.

RACT is defined at Section 17-2.100(153), FAC,<sup>57</sup> as:

"Reasonably Available Control Technology" or "RACT" - The lowest emission limit that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. It may require technology that has been applied to similar, but not necessarily identical, source categories.

It is the lowest emission limit that a particular source is capable of meeting through the application of control technology that is reasonably available, considering technological and economic feasibility. It may involve technology that has been applied to similar, but not necessarily identical source categories. RACT is equal to or less stringent than BACT.

As stated previously, the definition of BACT states that in determining the maximum degree of reduction that is achievable for each pollutant that is emitted, the department will take into account energy, environmental, economic impacts, and other costs.

By requiring consideration of environmental impacts of a

selected technology, Congress was clearly concerned with the non-air environmental impacts associated with the technology considered for BACT.<sup>59</sup> For the South Broward Resource Recovery Facility, the Department recommended that a dry scrubber/bag house system was BACT. The ash which would be captured by the system could be landfilled, along with the ash the facility would produce, and was therefore not going to create any non-air environmental impacts which could not be easily handled.

The economic consideration involves a comparison of costs involved in the different control strategies. If a technology is so expensive as to be prohibitive, and a different technology costs less but achieves a comparable level of control, then the less expensive technology would be a likelier candidate for BACT, all other factors considered. But where, as in the South Broward Resource Recovery Facility's situation, an ESP as proposed by the applicant may cost less than the recommended dry scrubber/bag house system, it cannot be considered BACT as it will provide no control for the acid gases which will be emitted. Although an ESP may cost less than the scrubber/bag house, it is not BACT, as it will not control adequately the facility's emissions, even though it is less expensive.

Another cost consideration which favors the use of a scrubber/bag house is consideration of what it would cost to retrofit a facility that utilizes just an ESP.<sup>60</sup> Although the initial cost of a scrubber/bag house may exceed that of an ESP,

it is definitely less expensive than the cost of retrofitting at a later date.

It is also appropriate to consider lost revenues that may result from operation failures or shut-downs of the air pollution control equipment. However, for this facility, lost revenues would not be a factor due to the finding by the Hearing Officer that a dry scrubber/baghouse is 98-100 per cent reliable.

As for consideration of energy impacts associated with the use of BACT for a facility, this becomes important when a technology consumes energy at a level out of proportion to another technology. However, as the facility remains a net producer of energy, either with a dry scrubber/bag house system or with an ESP, a comparison of energy consumption associated with the different strategies is really not relevant.

An ESP provides no removal of acid gases, including HCl. Further, an ESP is not as effective as a fabric filter system for removing fine particulates, where technical experts believe dioxins and heavy metals concentrate. Therefore, the Department's recommendation that a dry scrubber/bag house system constitutes BACT must be adopted.

Because an ESP does not remove many of the "pollutants of concern" associated with municipal solid waste incinerators, the Department's determination of BACT is appropriate even considering energy, environmental, and economic impacts associated with that level of control.

## CONCLUSION

A Determination of BACT does not require an assessment of compliance with National Ambient Air Quality Standards, or an analysis of PSD increment consumption. BACT is a technology determination that a source must undergo as a part of its review prior to obtaining a permit, or in this case, a certification, from the state. Compliance with NAAQS, and a PSD increment consumption analysis, are other components of the permit review, but they are not components of the technology determination that results in BACT.

BACT is a technology-forcing provision in the Clean Air Act. It functions to require that sources of air pollution control their emissions to the maximum degree possible. The health or environmental impacts that may or may not occur as a result of the source's emissions, do not have to be proven before a source agrees to utilize BACT.

Finally, the Department's interpretation of its own rules governing BACT determinations is a reasonable interpretation, and is consistent with the congressional intent behind the PSD program, and with EPA's regulations implementing the Clean Air Act.

The Department correctly determined BACT for the South Broward County Resource Recovery Project to be a dry scrubber/baghouse. The misinterpretation and misapplication of the Department's rules by the Hearing Officer in his Recommended Order must be corrected by the Siting Board, and the Department's determination of BACT must be substituted for the Hearing Officer's recommendation that the facility utilize an ESP.

FOOTNOTES

1. Section 17-2.100(24), FAC.
2. Section 17-2.630, FAC.
3. Clean Air Act Amendments of 1970, Pub. L. No. 91-604, 84 Stat. 1676 (1970), (Current version at 42 U.S.C.S. §§7401-79 (1982)).
4. See 42 U.S.C.S. §7409 (1982).
5. See 40 CFR §50.4 - .12 (1985).
6. 42 U.S.C. §7401(a)(2)(B) (1982).
7. Id.
8. See *Sierra Club v. Ruckleshaus*, 344 F. Supp. 253 (D.D.C. 1972), aff'd by an equally divided court sub nom. *Fri. v. Sierra Club*, 412 U.S. 541 (1973); see also: Note, Environmental Law - Non-Degradation - Clean Air Act and Amendments Held to Mandate a Policy of Preventing Significant Deterioration of Air Quality in Areas of Relatively Clean Air, 2 Fordham Urb. L.J. 136 (1973); see also: Forcing Technology: The Clean Air Act Experience, 88 Yale L.J. 1713 (1979).
9. Id.
10. 39 Fed. Reg. 42,510 (1974).
11. 42 U.S.C.S. §7470 et. seq.
12. 43 Fed. Reg. 26,380 (1978).
13. 606 F. 2d. 1068 (D.C. Cir. 1979); See also: Landau, Alabama Power v. Costle: An End to a Decade of Controversy Over the Prevention of Significant Deterioration of Air Quality? 10 Envtl. L. 585 (1980).
14. 1 J. Land Use & Env'tl. Reg. at 35.
15. 44 Fed. Reg. 51,924 (1979).
16. 1 J. Land Use & Env'tl. Reg., at 36.
17. 42 U.S.C.S. §7470 (1982).
18. Id. §7473 (a) - (b).
19. See 42 U.S.C.S. §7475.
20. See Chapter 403, Part II, F.S.; Chapter 17-17, FAC; Chapter 17-2, FAC

21. 42 U.S.C.S. §7475(a)(3) (1982).
22. Supra at §7475(a)(4) (1982).
23. See generally, Chapter 17-2, FAC.
24. Section 17-2.500 (5)(b), FAC.
25. Id. at §§17-2.500(5)(c).
26. Id. at §§17-2.500(5)(d).
27. Id. at §§17-2.500(5)(e).
28. Id. at §§17-2.500(5)(f).
29. Id. at §§ 17-2.500(5)(g).
30. See FAC Rule 17-2.100(24).
31. See FAC Rule 17-2.630.
32. Id.
33. Supra at §§17-2.100(24).
34. Terzieu, PSD: New Regulations and Old Problems, 5. Harv. Envtl.L. Rev. at 139-140.
35. Supra, at §7475(a)(3), and FAC 17-2.500(5)(d).
36. Supra, at §7475(a)(4), and FAC 17-2.500(5)(c).
37. Supra, at FAC 17-2.100(24).
38. See: Report by the Committee on Interstate and Foreign Commerce, Clean Air Act Amendments of 1976, at p. 163.
39. Terzieu, supra at 139-40.
40. Id.
41. Supra, §7470 et seq.
42. Id. at §7470(1).
43. Terzieu, supra at 140.
44. Committee Report, Id. at 163-8.
45. Id. at 163.
46. Id. at §7470, et seq.

47. §§403.061, 403.087, F.S.
48. Chapter 17-2, FAC, et seq.
49. Id. at §7470, et seq.
50. Id. at §7470 (1982).
51. Supra.
52. Supra.
53. Supra, at FAC 17-2.100(24).
54. Section 17-2.100(7), FAC.
55. Supra.
56. §17-2.100(107), FAC.
57. §17-2.100(153), FAC.
58. Supra.
59. Committee Report, supra, at 163; See also: Sierra Club v. Costle, 657 So.2d at 331 (D.C. Cir. 1981).
60. Committee Report, supra, at 158.