

# Meeting Agenda

## Treasure Coast Energy Center Combustion Turbine Unit 1

**Purpose:** Air Permitting Requirements

**Location:** FDEP/DARM/BAR - Tallahassee Offices

**Date:** December 15, 2004

### I. Introductions

### II. Project Overview (Attachment 1)

#### A. Project Location

1. Southwest of the city of Fort Pierce, St. Lucie County, FL

#### B. Project Description

1. Project is subject to certification under the Power Plant Siting Act
2. GE PG7241 FA 1x1 combined cycle combustion turbine with duct firing
3. Fuels are natural gas and ultra low sulfur (ULS) fuel oil (0.0015% sulfur)
4. Ancillary equipment
  - a. Mechanical draft cooling tower
  - b. 1,000,000 gallon fuel oil storage tank
  - c. Emergency diesel fire pump
  - d. Natural gas fired auxiliary boiler

#### 5. Site arrangement

#### C. Schedule

1. SOC – Summer 2006

### III. PSD and other Air Requirements

#### A. Attainment Status

1. Entire state is unclassifiable/attainment

#### B. NSR PSD Applicability

1. New major PSD source
2.  $NO_x$ , CO, VOC,  $SO_2$ ,  $PM/PM_{10}$  and sulfuric acid mist likely above SELs

#### C. BACT

1. Expected Emission Levels
2. Recent BACT Determinations
  - a. Turkey Point – SCR, use of natural gas and ULS fuel oil along with good combustion controls
3. Is a BACT analysis required for emergency diesel fire pump?

#### D. Air Quality Impact Analysis

##### 1. Air Dispersion Modeling Workplan

##### a. Unit Emissions and Operating Scenarios

- (1) 3 loads, 3 temperatures, with and without duct burners, and evaporative coolers. *enveloping like*

- (2) PM – front and back half *(both required)* *Stock*

- (3) Is it necessary to include cooling tower in modeling *Island*

##### b. Air Dispersion Model (ISCST3 latest version)

- (1) Model Options

*include cooling tower temperature?*

- (a) EPA Default
    - (b) Flat Terrain
  - c. GEP and Building Downwash
    - (1) Use BPIP for direction specific downwash
    - (2) Stack likely less than GEP
  - d. Receptor Grids and Terrain
    - (1) 10 km nested rectangular grid
      - (a) 100 m spacing to 1 km
      - (b) 250 m spacing to 1 – 2.5 km
      - (c) 500 m spacing to 2.5 - 5 km
      - (d) 1 km spacing from 5 - 10 km
      - (e) 100 m fence line spacing
    - (2) Assume flat terrain
  - e. Dispersion Coefficients
    - (1) Auer land use calculation - rural by visual inspection
  - f. Meteorological Data
    - (1) Surface data: West Palm Beach
    - (2) U/A data: West Palm Beach
    - (3) SCRAM has
      - (a) West Palm Beach 87-91
      - (b) West Palm Beach 87-91
- 2. Model Predicted Impacts
  - a. Significant Impact Area
    - (1) If less than SIL, then done
  - b. Determination of Preconstruction Monitoring Requirements
    - (1) Model predicted impacts less than de minimus levels
  - c. Ambient Air Quality Standards
    - (1) Only if above SILs
  - d. Increment Analysis
    - (1) Only if above SILs
- 3. Additional Impact Analyses
  - a. Commercial, Residential, and Industrial Growth
  - b. Vegetation and Soils
  - c. Visibility — *any Class II areas?*
  - d. Class I analysis
    - (1) Approximately 180 km away from the Everglades National Park
    - (2) CALPUFF modeling system will be used
    - (3) Regional haze
    - (4) Deposition
    - (5) Class I SILs

E. Toxics

1. CT MACT

- a. Plant is not a major source of HAPs

IV. PSD Application

A. Application Forms

1. Long Form No. 62.210.900(1)

B. Submittal Format (Appendix to SCA)

1. Technical Support Document Format (Proposed TOC-Attachment 2)

C. Application Fees – Per 62-4.050(4)(w), F.A.C. application fees separate from the SCA fees are not required

V Ultimate Certification

**Attachment 1**  
**Project Overview**  
**Briefing Booklet**

## **Attachment 2**

### **Proposed PSD Permit Application Table of Contents**

- 1.0 Introduction and Executive Summary
- 2.0 Project Characterization
  - 2.1 Project Location
  - 2.2 Project Description
  - 2.3 Project Emissions
  - 2.4 Maximum Project Potential to Emit
  - 2.5 New Source Review Applicability
  - 2.6 CT MACT Applicability
- 3.0 Best Available Control Technology
- 4.0 Air Quality Impact Analysis
  - 4.1 Model Selection
  - 4.2 Model Input and Options
    - 4.2.1 Model Input Source Parameters
    - 4.2.2 Land Use Dispersion Coefficient Determination
    - 4.2.3 GEP Stack Height Determination
    - 4.2.4 Model Defaults
    - 4.2.5 Receptor Grid and Terrain Considerations
    - 4.2.6 Meteorological Data
  - 4.3 Maximum Predicted Impacts
  - 4.4 Comparison to Preconstruction Monitoring Requirements
  - 4.5 National Ambient Air Quality Standards
  - 4.6 PSD Increment Analysis
- 5.0 Additional Impact Analysis
  - 5.1 Commercial, Residential, and Industrial Growth
  - 5.2 Vegetation and Soils
  - 5.3 Class I Area Impact Analysis

Application Forms and Attachments



## **BLACK & VEATCH**

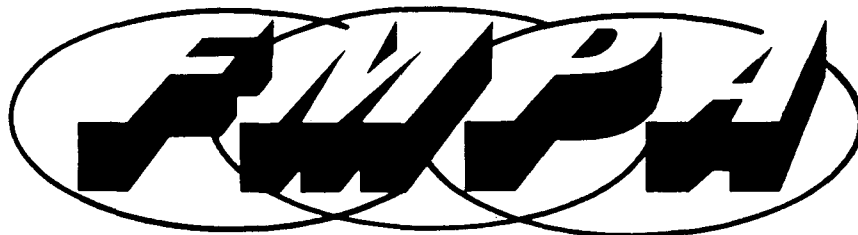
**Timothy M. Hillman**  
Senior Air Quality Scientist  
Environmental Health & Safety Services

**Black & Veatch Corporation**  
11401 Lamar Avenue, Overland Park, KS 66211 USA  
Tel: (913) 458-7928 . hillmantm@bv.com

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### **Power Plant Site Certification Pre-Application Meeting Briefing Booklet**

### **TREASURE COAST ENERGY CENTER PROJECT**



**Florida Municipal Power Agency**  
Community Power. Statewide Strength.



## **BLACK & VEATCH**

**Corporation**

**Brian D. O'Neal**  
Air Quality Scientist, Environmental Advisory Services

11401 Lamar Avenue  
Overland Park  
Kansas 66211 USA

Tel. (913) 458-8199  
Fax. (913) 458-2934  
onealbd@bv.com

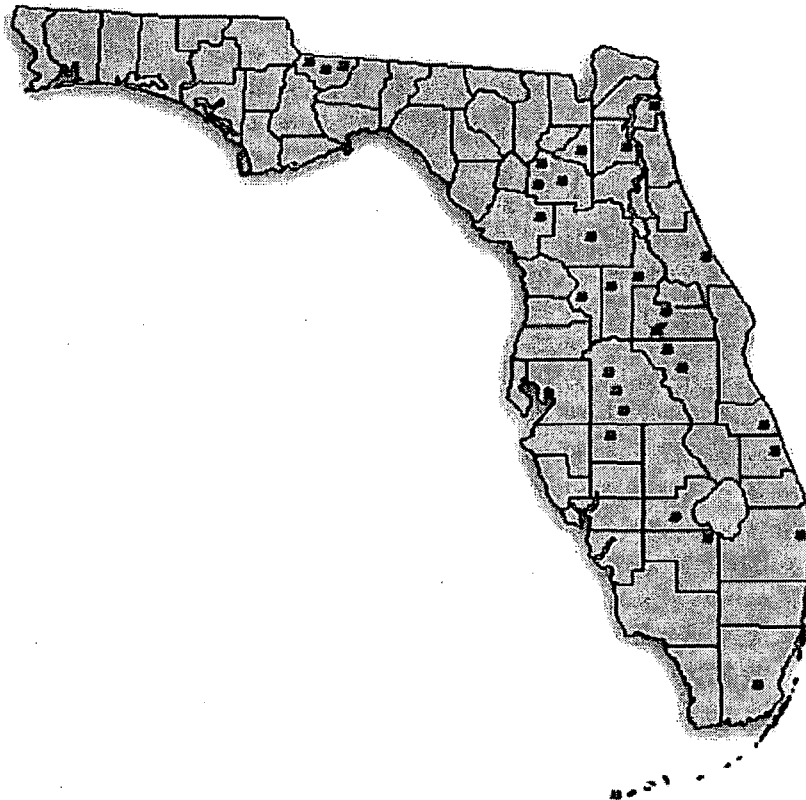
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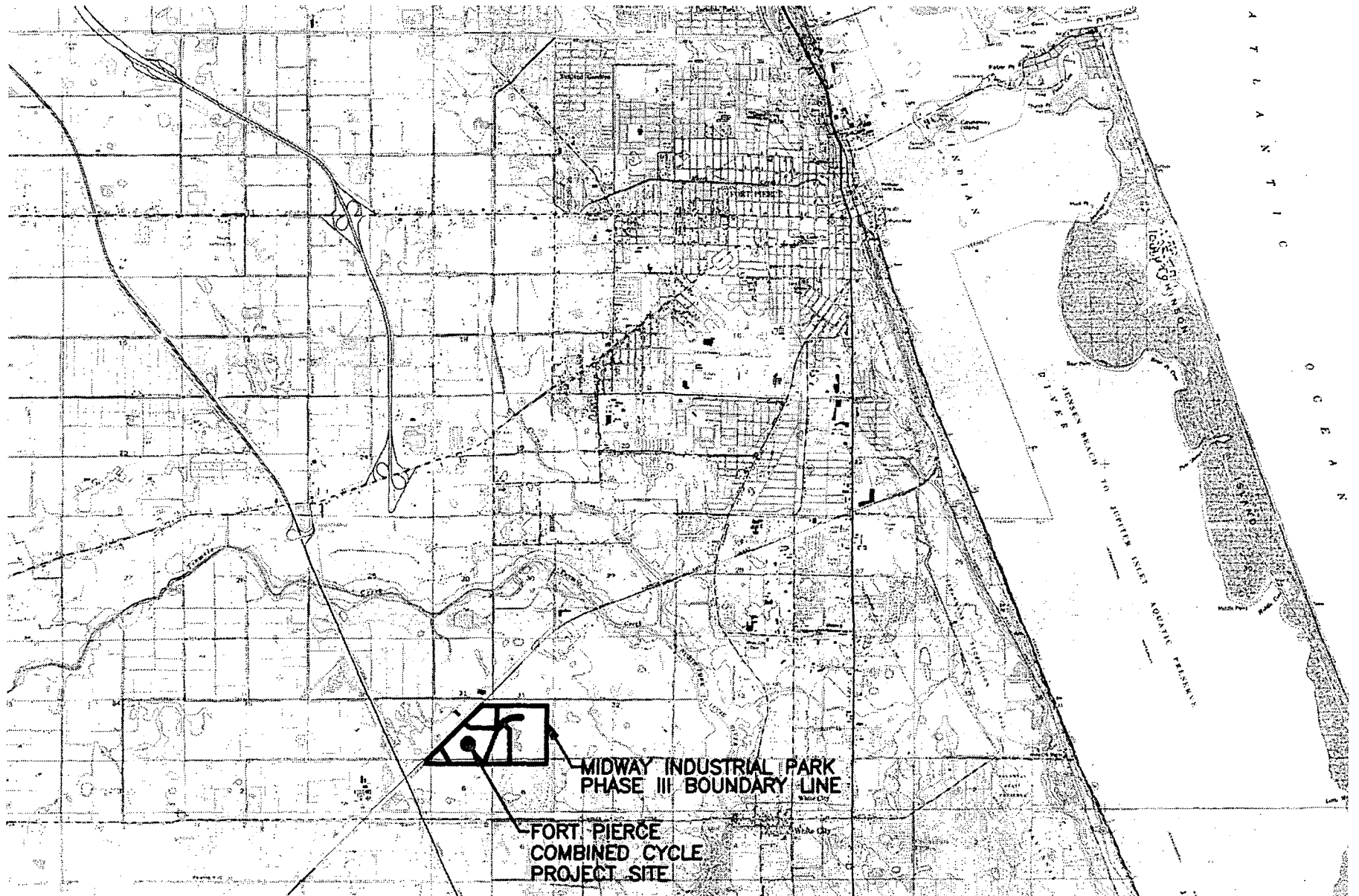
FMPA is a public, nonprofit, joint action agency formed by 29 municipal electric utilities whose primary purpose is to develop competitive power supply and related services. Of the 29 members, 15 are members of FMPA's All-Requirements Project which supplies all power supply needs for those members.

Alachua	Lakeland
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Bushnell*	Moore Haven
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Fort Pierce*	Ocala*
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Havana*	St. Cloud
Homestead	Starke*
Jacksonville Beach*	Vero Beach*
Key West*	Wauchula
Kissimmee*	Williston
Lake Worth*	

\* All-Requirements Member



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SECTION 31, TOWNSHIP 35 S, RANGE 40 E

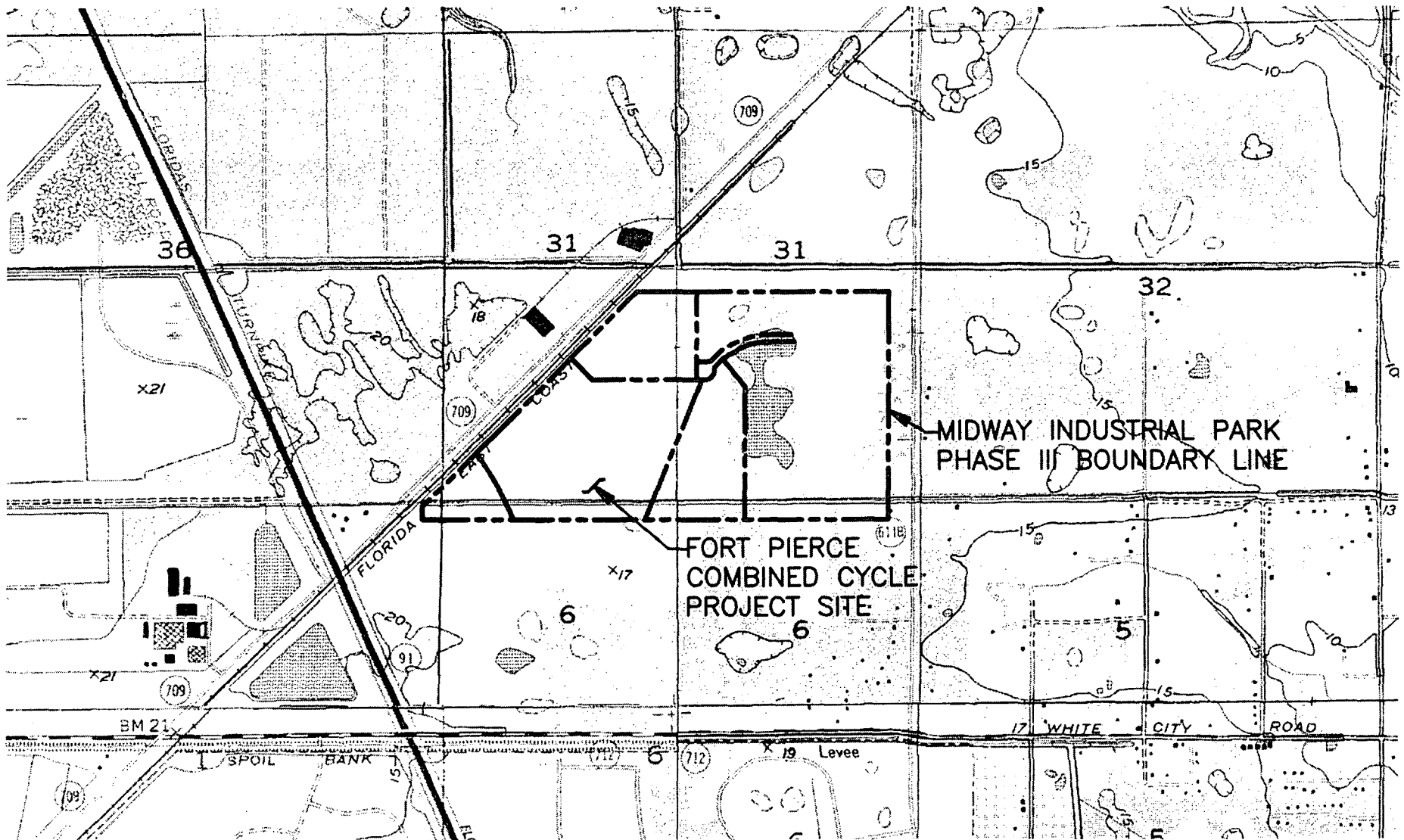
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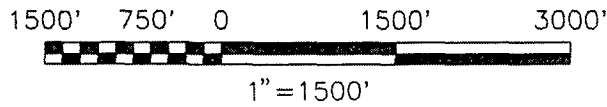
1" = 5000'







SECTION 31, TOWNSHIP 35 S, RANGE 40 E



## **Power Plant Siting Act Site Certification Request**

### **Treasure Coast Energy Center Project St. Lucie County, Florida**

- Need for Power Identified in 2008
- Initial Certification Request: Ultimate Site Capacity, Unit 1, and Associated Facilities
- Ultimate Site Capacity  $\approx$ 1200 Megawatts as 4 x 300 MW (Nominal) Combustion Turbine Combined Cycle Units
- Proposed Units will have a Nominal Rating of  $\approx$ 300 MW
  - 150 MW Combustion Turbine Generator
  - Heat Recovery Steam Generator
  - 150 MW Steam Turbine and Generator
  - Mechanical Draft Cooling Tower
  - Auxiliary Boiler
- FMPA will Own, Construct, and Operate Unit 1 and Future Units
- Unit 1 Construction Scheduled to Start August 2006; Commercial Operation Scheduled for June 2008

## Engineering and Environmental Features

- F-Class Combustion Turbine
- Natural Gas as Primary Fuel; Ultralow Sulfur No. 2 Fuel Oil as Backup
- Dry Low-NOx Combustors, Water Injection and SCR for NOx Control
- Reclaimed Water from Ft. Pierce WWTP used for Cooling Tower Makeup; High Efficiency Drift Eliminators
- Deep Well to Floridan Aquifer for Service/Fire Water Supply; Unit 1 Withdrawals Qualify for *Major Standard General Water Use Permit*; Temporary Use of Groundwater Requested for Emergency Cooling
- Potable Water and Backup Emergency Cooling Water from Ft. Pierce Municipal System
- Process Wastewaters Returned to Ft. Pierce WWTP for Deep Well Injection
- Sanitary Wastewaters Returned to Ft. Pierce WWTP
- Loop-In to FPL Transmission System
- Site Located in Zoned Industrial Park
- No Anticipated Protected Species or Archeological/Historical Properties Impacts
- Compensation Proposed for Impacts to Moderate Quality Wetlands

## **Linear Facilities**

- Ft. Pierce Potable Water Adjacent to Site
- Ft. Pierce Wastewater Pipeline Adjacent to Site
- Ft. Pierce Wastewater Treatment Plant Adjacent to Site
- FGT Natural Gas Gate Station 1000 Feet from Site
- Transmission Line Interconnection to FPL System 2.6 Miles from Site

## **Cost and Economic Impacts**

- Unit 1 Capital Cost - ~\$207 Million
- 230 Construction Jobs (Peak) - ~\$20 Million over 2 Years
- ~16 Permanent Plant Staff Jobs - ~\$1 Million Annual Payroll
- Majority of Construction and Operations Workforce from Regional Area
- Significant Economic Benefits, No Significant Adverse Socioeconomic Impacts Anticipated

## **Power Plant Siting Act Project Milestones**

- Need for Power Petition and Site Certification Application to be filed April 1, 2005
- DEP Issues SCA Completeness Determination in April 2005
- DEP Issues Sufficiency Statement in June 2005
- Land Use Hearing in August 2005
- Land Use Order Issued in October 2005
- Need for Power Order Issued by PSC in September 2005
- DEP Issues Project Analysis in December 2005
- Certification Hearing in February 2006
- Recommended Certification Order Issued in April 2006
- Siting Board Hearing in June 2006
- Site Certification Order Issued in July 2006
- PSD Permit Issued in August 2006
- Start of Construction in August 2006
- Unit 1 Commercial Operation in June 2008

## Ultimate Impact Assessment

The Power Plant Siting Act requires an applicant to address the socioeconomic and environmental impacts of ultimate site development. FMPA proposes the following methodologies to assess those future impacts.

- Land Impacts – Assess acreage requirements of ultimate site development.
- Groundwater Impacts – Model increased consumptive use (aquifer drawdown) of ultimate site development.
- Cooling Water – Compare projected availability with project requirements.
- Ecological Impacts – Assess upland and wetland habitat impacts of ultimate site development.
- Air Quality Impacts – Conduct an ultimate ambient air quality impact analysis (AAQIA), using regulatory air dispersion models, based on estimated ultimate site development air emissions. Compare results of the ultimate AAQIA to state and federal ambient air quality standards (AAQS).
- Socioeconomic Impacts – Assess construction impacts of ultimate site development on local and regional resources. Address increases in operating staff and payroll. Confirm land use and zoning compliance. Discuss tax implications.
- Wastewater Discharge Impacts – Assess impact of ultimate increases in total wastewater quantities and qualities on Ft. Pierce wastewater system treatment and disposal capacities.
- Noise Impacts - Model anticipated noise levels of ultimate site development. Compare results to County standards.
- Transmission System and Natural Gas Transmission System Impacts – Not evaluated due to possible future changes in these systems.

## **Additional Pre-Application Meetings Proposed**

- Dept. of Environmental Protection – Air Quality Section, Tallahassee
- Dept. of Environmental Protection – Water Facilities and ERP Offices, W. Palm Beach
- Dept. of Community Affairs, Tallahassee
- Fish and Wildlife Conservation Commission, Vero Beach
- South Florida Water Management District – Water Use Office, W. Palm Beach
- Treasure Coast Regional Planning Council, Stuart
- St. Lucie County – Community Development and Public Works Depts., Ft. Pierce
- U.S. Army Corps of Engineers – South Permits Branch, Palm Beach Gardens

**FLORIDA POWER PLANT SITING ACT  
SITE CERTIFICATION APPLICATION**

**VOLUME 2**

**TREASURE COAST ENERGY CENTER  
UNIT 1**

***DRAFT***

**Submitted by:**

**Florida Municipal Power Agency**

**April 2005**



**SCA  
Table of Contents**

**Volume 1  
Need for Power Application  
(Submitted to PSC under separate cover)**

**Volume 2**

Applicant Information .....	AI-1
Preface.....	i
Acronyms and Abbreviations .....	AA-1
1.0 Need for Power and the Proposed Facilities .....	
2.0 Site and Vicinity Characterization.....	
2.1 Site and Associated Facilities Delineation .....	
2.1.1 Site Location .....	
2.1.2 Site Modification .....	
2.1.3 Existing and Proposed Uses.....	
2.1.4 Flood Zones .....	
2.2.1 Governmental Jurisdictions .....	
2.2.3 Demography and Ongoing Land Use .....	
2.2.4 Easements, Title, Agency Works.....	
2.2.5 Regional Scenic, Cultural, and Natural Landmarks.....	
2.2.6 Archaeological and Historic Sites.....	
2.2.7 Socioeconomics and Public Services.....	
2.3 Biophysical Environment.....	
2.3.1 Geohydrology .....	
2.3.2 Subsurface Hydrology .....	
2.3.3 Site Water Budget and Area Users .....	
2.3.4 Surficial Hydrology .....	
2.3.5 Vegetation/Land Use .....	
2.3.6 Ecology .....	
2.3.7 Meteorology and Ambient Air Quality.....	
2.3.8 Noise .....	
2.3.9 Other Environmental Features .....	
2.4 References .....	
3.0 The Plant and Directly Associated Facilities.....	
3.1 Background .....	
3.2 Site Layout .....	
3.3 Fuel.....	
3.3.1 Fuel Types and Qualities .....	
3.3.2 Fuel Quantities.....	

	3.3.3	Fuel Transportation .....
	3.3.4	Alternate Fuel Types .....
3.4		Air Emissions and Control .....
	3.4.1	Air Emissions Types and Sources .....
	3.4.2	Air Emissions Controls .....
	3.4.3	BACT Summary .....
3.5		Plant Water Use .....
	3.5.1	Heat Dissipation System (Cooling Tower) .....
	3.5.2	Domestic/Sanitary Wastewater .....
	3.5.3	Potable Water System .....
	3.5.4	Process Water Systems .....
	3.5.5	Water Use Variations .....
3.6		Chemical and Biocide Waste .....
	3.6.1	Cooling Tower Blowdown .....
	3.6.2	Steam Cycle Water Treatment .....
	3.6.3	Makeup Water Demineralization .....
	3.6.4	Chemical Cleaning Wastes .....
	3.6.5	Miscellaneous Chemical Drains .....
3.7		Solid and Hazardous Waste .....
3.8		Onsite Drainage System .....
	3.8.1	Uncontaminated Areas .....
	3.8.2	Drainage Areas .....
	3.8.3	Design Criteria .....
	3.8.4	Runoff Analysis .....
	3.8.5	Erosion and Sediment Control Measures .....
	3.8.6	Potentially Contaminated Areas .....
	3.8.7	Unit 1 Hydrologic Analysis .....
3.9		Materials Handling .....
	3.9.1	Construction .....
	3.9.2	Operation .....
3.10		References .....
4.0		Effects of Site Preparation, and Plant and Associated Facilities Construction .....
	4.1	Land Impact .....
	4.1.1	General Construction Impacts .....
	4.1.2	Roads .....
	4.1.3	Flood Zones .....
	4.1.4	Topography and Soils .....
	4.2	Impact on Surface Water Bodies and Uses .....
	4.2.1	Impact Assessment .....
	4.2.2	Measuring and Monitoring Programs .....
	4.3	Groundwater Impacts .....
	4.4	Ecological Impacts .....
	4.4.1	Impact Assessment .....
	4.4.2	Measuring and Monitoring Programs .....
	4.5	Air Impacts .....

	4.5.1	Sources of Construction Fugitive Dust .....
	4.5.2	Available Control Methods .....
4.6		Impact on Human Populations .....
	4.6.1	Project Location and Description of Nearby Housing .....
	4.6.2	Project Description .....
	4.6.3	Effects of Construction on Local Human Population .....
4.7		Impact on Landmarks and Sensitive Areas .....
4.8		Impact on Archaeological and Historic Sites .....
4.9		Special Features.....
4.10		Benefits from Construction .....
4.11		Variances.....
4.12		References .....
5.0		Effects of Plant Operation.....
	5.1	Effects of the Operation of the Heat Dissipation System.....
		5.1.1 Temperature Effect on Receiving Body of Water .....
		5.1.2 Effects on Aquatic Life .....
		5.1.3 Biological Effects of Modified Circulation .....
		5.1.4 Effects of Offstream Cooling.....
		5.1.5 Measurement Program .....
	5.2	Effects of Chemical and Biocide Discharges .....
		5.2.1 Industrial Wastewater Discharge .....
		5.2.2 Cooling Tower Blowdown.....
		5.2.3 Measurement Program .....
	5.3	Impacts on Water Supplies.....
		5.3.1 Surface Water.....
		5.3.2 Ground Water .....
		5.3.3 Drinking Water .....
		5.3.4 Leachate and Runoff.....
		5.3.5 Measurement Programs .....
	5.4	Solid/Hazardous Waste Disposal Impacts.....
	5.5	Sanitary and Other Waste Discharges .....
	5.6	Air Quality Impacts .....
	5.7	Noise Impacts .....
		5.7.1 Applicable Noise Regulations.....
		5.7.2 Facility Noise Emissions.....
		5.7.3 Noise Mitigation .....
		5.7.4 Compliance with Noise Regulations .....
	5.8	Changes in Non-Aquatic Species Populations.....
		5.8.1 Impacts.....
		5.8.2 Monitoring .....
	5.9	Other Plant Operation Effects .....
	5.10	Landmarks, Sensitive Areas, and Archaeological Sites .....
	5.11	Resources Committed.....
	5.12	Variances .....
	5.13	References .....

6.0	Transmission Lines and Other Linear Facilities .....
6.1	Transmission Line .....
6.1.1	Project Introduction .....
6.1.2	Corridor Location and Layout .....
6.1.3	Transmission Line and Road Design Characteristics .....
6.1.4	Cost Projections .....
6.1.5	Corridor Selection.....
6.1.6	Socio-Political Environment of the Corridor Area .....
6.1.7	Bio-Physical Environment of the Corridor Area .....
6.1.8	Effects of Right-of-Way Preparation and Transmission Line Construction.....
6.1.9	Post-Construction Impacts and Effects of Maintenance .....
6.1.10	Other Post-Construction Effects .....
6.2	Natural Gas Pipeline.....
6.3	Wastewater Return Pipeline .....
6.4	Treated Sewage Effluent Supply Pipeline.....
6.5	Potable Water Supply Pipeline.....
6.6	References .....
7.0	Economic and Social Effects of Plant Construction and Operation .....
7.1	Socioeconomic Benefits .....
7.1.1	Creation of Temporary and Permanent Jobs.....
7.1.2	Additional Job Creation/Stimulation of Local Economies .....
7.1.3	Revenue Generation for State and Local Governments.....
7.1.4	Creation or Improvement of Local Roads, Waterways or Other Local Transportation Facilities .....
7.1.5	Increased Knowledge of the Environment.....
7.1.6	Increased Land Use Efficiency .....
7.2	Socioeconomic Costs .....
7.2.1	Temporary External Costs .....
7.2.2	Long-term External Costs.....
7.3	References .....
8.0	Site and Design Alternatives.....
8.1	Alternate Sites .....
8.2	Proposed Site Design Alternatives .....
8.2.1	Alternative Heat Rejection Systems .....
8.2.2	Biological Fouling Control Alternatives.....
8.2.3	Cooling Water Makeup/Process Water Source Alternatives.....
8.2.4	Sanitary Waste System Alternatives.....
8.2.5	Plant Drainage System Alternatives .....
8.2.6	Process Wastewater Treatment Alternatives .....
8.2.7	Solid Waste Disposal System .....
8.2.8	Multiple Uses.....
8.3	References .....

9.0 Coordination .....

**Volume 3**

10.0 Appendices.....

- 10.1 Federal Permit Applications.....
  - 10.1.1 USFWS Consultations .....
  - 10.1.2 USCOE Environmental Resource/Section 404 Permit Application.....
  - 10.1.3 USFAA Obstruction in Airspace Permit Application.....
  - 10.1.4 USDOE Certification of Compliance Statement .....
- 10.2 State Permit Applications .....

  - 10.2.1 Prevention of Significant Deterioration Application .....
  - 10.2.2 Title IV Acid Rain Permit Application.....
  - 10.2.3 Environmental Resource Permit Application .....
  - 10.2.4 Water Use Permit Application.....
  - 10.2.5 Industrial Wastewater Treatment System Permit Application.....
  - 10.2.6 Public Drinking Water System Extension Permit Application.....
  - 10.2.7 Well Construction Permit Application.....
  - 10.2.8 Short-Term Dewatering Permit Application.....
  - 10.2.9 Storm Water Discharges from Construction Activities Permit Application.....

- 10.3 Local Permit Applications.....
  - 10.3.1 SLC-Rezoning Permit Application .....
  - 10.3.2 SLC-Site Plan Permit Application.....
  - 10.3.3 SLC-Building Permit .....
  - 10.3.4 FPUA-Effluent Delivery/Return Agreement .....
  - 10.3.5 FPUA-Construction and Operating Agreement.....
- 10.4 Site Subsurface Data .....
- 10.5 Ground Water Quality Data .....
- 10.6 Treasure Coast Energy Center Site Vascular Plant List.....
- 10.7 Treasure Coast Energy Center Site Wildlife List.....

**Volume 4**

- 10.2.1 PSD Application .....

  - 10.2.1 Project Characterization .....
  - 10.2.2 Best Available Control Technology .....
  - 10.2.3 Air Quality Impact Analysis.....
  - 10.2.4 Additional and Class I Area Impact Analyses.....

## Applicant Information

### *Applicants' Official Name*

Florida Municipal Power Agency (FMPA)

### *Address*

Florida Municipal Power Agency  
8553 Commodity Circle  
Orlando, FL 32819-9002

### *Address of Official Headquarters*

Same as address

### *Business Entity*

Joint Action Agency

### *Names, Owners, etc.*

Not applicable

### *Name and Title of Chief Executive Officers*

Roger Fontes, General Manager and CEO, FMPA

### *Name, Address, and Telephone Number of Official Representative Responsible for Obtaining Certification*

Kevin Fleming, Treasure Coast Energy Center - Unit 1 Project Manager, FMPA  
8553 Commodity Circle  
Orlando, FL 32819-9002  
407-355-7767

### *Site Location*

St. Lucie County

### *Nearest Incorporated City*

Ft. Pierce

### *Latitude and Longitude (center of site)*

Lat: 27 deg, 22 min, 59 sec N  
Long: 80 deg, 22 min, 42 sec W

*UTM Coordinates (NAD 83, Meters; center of site)*

North 3029058.5

East 561498.9

*Section, Township, and Range*

Section 31, Township 35 South, Range 40 East

*Location of Any Directly Associated Transmission Facilities*

St. Lucie County

*Nameplate Generating Capacity*

Unit 1: Nominal 300 MW Combined Cycle Combustion Turbine Unit (150 MW CTG, 150 MW STG)

*Capacity of Proposed Additions and Ultimate Site Capacity*

300 MW Unit 1

1200 MW Ultimate Site Capacity

*Remarks:*

FMPA is a nonprofit, joint action agency formed by 29 municipal electric utilities serving approximately 1.8 million Floridians. FMPA is a public agency whose primary purpose is to develop competitive power supply and related services for its members.

*Associated Facilities Requested for Certification:*

Treasure Coast Energy Center Project Transmission Line

Treasure Coast Energy Center Project Wastewater Return Pipeline

Treasure Coast Energy Center Project Natural Gas Pipeline

Treasure Coast Energy Center Treated Sewage Effluent Supply Pipeline

Treasure Coast Energy Center Project Potable Water Supply Pipeline