

LANDERS & PARSONS, P.A. ORIGINAL

DAVID S. DEE  
RONALD A. LABASKY  
JOSEPH W. LANDERS, JR.  
JOHN T. LAVIA, III  
FRED A. McCORMACK  
PHILIP S. PARSONS  
ROBERT SCHEFFEL WRIGHT

ATTORNEYS AT LAW  
310 WEST COLLEGE AVENUE  
TALLAHASSEE, FL 32301

MAILING ADDRESS:  
POST OFFICE BOX 271  
TALLAHASSEE, FL 32302-0271

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BY HAND DELIVERY

TELEPHONE (850) 681-0311  
TELECOPY (850) 224-5595  
www.landersonparsons.com

Blanca Bayo, Director  
Division of the Commission Clerk  
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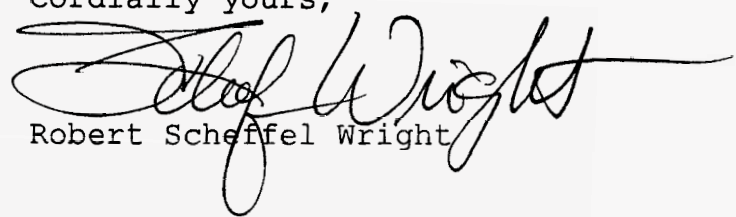
Re: Calpine Construction Finance Company's Ten-Year Site  
Plan, 2003-2012

Dear Ms. Bayo:

Enclosed are 25 copies of Calpine's 2004-2013 Ten-Year Site  
Plan. Please confirm receipt of these Plans by date-stamping the  
accompanying copy provided for that purpose and returning same with  
our runner.

As always, my thanks to you and to your professional Staff for  
their kind and courteous assistance. If you have any questions,  
please give me a call at (850)681-0311.

Cordially yours,

  
Robert Scheffel Wright

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CALPINE

*Ten-Year Site Plan  
2004 - 2013*



CALPINE  
CONSTRUCTION FINANCE  
COMPANY, L.P.

*August 2004*

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**CALPINE CONSTRUCTION FINANCE COMPANY, L.P.**

**TEN-YEAR SITE PLAN  
FOR ELECTRICAL GENERATING FACILITIES  
AND ASSOCIATED TRANSMISSION LINES,  
2004-2013**

**Submitted to:**

**STATE OF FLORIDA  
PUBLIC SERVICE COMMISSION**

**AUGUST 2004**

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## EXECUTIVE SUMMARY

Pursuant to Rule 25-22.071, Florida Administrative Code ("F.A.C."), and Section 186.801, Florida Statutes (2003), Calpine Corporation ("Calpine") hereby submits its Ten-Year Site Plan for Electrical Generating Facilities and Associated Transmission Lines, 2004-2013.

Calpine is the owner of the Osprey Energy Center, a 529 megawatt ("MW") (nominal net) natural gas-fired combined cycle generating unit located in the City of Auburndale in Polk County, Florida, and the Santa Rosa Energy Center ("Santa Rosa Project"), a 241 MW (nominal net) natural gas-fired cogeneration facility located in Santa Rosa County, Florida. Through subsidiaries, Calpine holds ownership interests in, and manages and operates, the Auburndale Power Plant, a 150 MW natural gas and oil-fired qualifying cogeneration facility located in Polk County, Florida, and 100 percent of the ownership interests in the Auburndale Peaker Energy Center ("Auburndale Peaker Project"), a 120 MW (nominal net) natural gas and oil-fired combustion turbine plant located on the site of the Auburndale Power Plant in Polk County. Calpine is presently developing the Blue Heron Energy Center ("Blue Heron Project") in Indian River County, Florida. (All five projects are collectively referred to as the "Calpine Projects".)

Based on Calpine's current power sales agreements and projected resource needs, Calpine is operating the Osprey Energy

Center, the Santa Rosa Project, the Auburndale Power Plant, and the Auburndale Peaker Project. Calpine is presently developing the Blue Heron Energy Center, a 1,080 MW natural gas-fired combined cycle generating unit to be located in Indian River County, Florida. Blue Heron Unit 1, a 540 MW (nominal net) combined cycle unit, is under active development, and Calpine expects to file its need determination petition for Blue Heron Unit 1 by mid-September 2004.

Natural gas is provided to the Osprey Energy Center by Gulfstream Natural Gas System, L.L.C. ("Gulfstream"), which owns and operates a new trans-Florida natural gas pipeline that became operational in May 2002. The Osprey Energy Center is a significant customer of this second, major, trans-Florida natural gas pipeline. Natural gas is provided to Gulfstream receipt points in the Mobile Bay area by natural gas producers or marketing companies (or both) for delivery on a firm transportation basis through the Gulfstream pipeline to the Osprey Energy Center. Natural gas is provided to the Santa Rosa Project by Gulf South Pipeline. Natural gas will be provided to the Blue Heron Energy Center by Florida Gas Transmission Company. Calpine procures and will continue to procure the needed gas supplies (commodity) for the Calpine Projects through an optimized combination of short-term contract purchases, long-term contract purchases, and spot market purchases.

Calpine's operating and planned combined cycle generating units utilize high-efficiency generation technology with high reliability and high availability rates. In addition, the Calpine Projects have environmentally responsible emissions profiles with the use of clean-burning natural gas, good combustion practices, and additional emissions control technologies that minimize sulfur dioxide, nitrogen oxides, carbon monoxide, and volatile organic compound emissions. The Calpine Projects' exceptionally clean technology protects against risks associated with future changes in environmental regulations while improving the overall environmental profile of electricity generation in Florida.

Presently, 114 MW of the Auburndale Power Project is committed to Progress Energy Florida, Inc. ("Progress") pursuant to a long-term cogeneration contract previously entered into with Florida Power Corporation ("FPC"). Most of the output of the Osprey Energy Center is committed to Seminole Electric Cooperative, Inc. ("Seminole") pursuant to a long-term power purchase agreement (the "Seminole-Calpine PPA" or the "PPA"). Calpine also has a power purchase agreement with the Florida Municipal Power Agency ("FMPA"), pursuant to which Calpine will sell firm capacity and energy to FMPA. The Calpine-FMPA agreement provides that the power will be supplied from Calpine's planned Blue Heron Energy Center, but pursuant to certain provisions of the agreement, Calpine expects to serve that contract from the Osprey Energy Center until

the Blue Heron Project becomes operational, whereupon Calpine is contractually obligated to deliver FMPA's committed capacity and associated energy from the Blue Heron Project. Power produced from the other Calpine Projects is being sold, or will be sold, at wholesale to other utilities and power marketers for use in Florida. Calpine projects that virtually all of the sales from the Calpine Projects will be made to other utilities and power marketers for use in Peninsular Florida, i.e., within the Florida Reliability Coordinating Council region, and for use in the Panhandle of Florida, which is within the Southeastern Electric Reliability Council ("SERC") region.<sup>1</sup> As such, subject to their being committed to Florida load-serving utilities, the other Calpine Projects will significantly and substantially enhance the State of Florida's generation reserve margins.

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<sup>1</sup> The Santa Rosa Energy Center is interconnected to Gulf Power Company, which is in the Southeastern Electric Reliability Council ("SERC") region. Accordingly, Calpine had made and expects to continue to make wholesale sales of electricity from the Santa Rosa Project to Gulf Power or its sister companies in the Southern Company system.

## CHAPTER 1

### CALPINE CORPORATION

Calpine Corporation, a Delaware corporation, has obtained, is currently arranging for, or will be arranging for the permitting, engineering, procurement and construction of the Calpine Projects and for any other services necessary to bring the Calpine Projects into commercial operation.

On February 23, 2000, the Federal Energy Regulatory Commission ("FERC") approved Calpine Construction Finance Company's ("CCFC") Rate Schedule No. 1, which permits CCFC to enter into negotiated wholesale power sales agreements with willing purchasers. Calpine Construction Finance Company, L.P., 90 FERC ¶61,164. Calpine is filing this Ten-Year Site Plan pursuant to Section 186.801, Florida Statutes (2003) and, pursuant to a stipulation accepted by the Commission in its order determining need for the Osprey Energy Center, Calpine will continue to file ten-year site plans and other information requested by the Commission. In Re: Petition for Determination of Need for the Osprey Energy Center in Polk County by Seminole Electric Cooperative and Calpine Construction Finance Company, L.P., Order No. 01-0421-FOF-EC (Fla. P.S.C., February 21, 2002).

## CHAPTER 2

### DESCRIPTION OF EXISTING FACILITIES

Calpine owns, manages, and operates the Calpine Projects. Calpine owns the Osprey Energy Center, the Santa Rosa Energy Center, and the Auburndale Peaker Energy Center. Additionally, through its subsidiaries, Calpine holds ownership interests in the Auburndale Power Plant, a 150 MW natural gas and oil-fired qualifying cogeneration facility located in Polk County, Florida, immediately adjacent to the Osprey Energy Center Site. (See Schedule 1.) As discussed in Chapter 5 of this Ten-Year Site Plan, Calpine is also developing and will own the 1,080 MW Blue Heron Energy Center.

#### I. Osprey Energy Center

The Osprey Energy Center is a 529 MW natural gas-fired, combined cycle electrical power plant located in the City of Auburndale, Polk County, Florida. The Osprey Energy Center achieved commercial operating status in May 2004 and currently supplies electrical generating capacity and associated energy under wholesale power sales contracts to Seminole and Florida Power & Light Company ("FPL"). Seminole has rights under the Calpine-Seminole PPA, to purchase all of the uncommitted output from the Osprey Energy Center; in the event that Seminole does not elect to exercise these rights at certain times, Calpine expects to sell such capacity and energy to other Peninsular Florida utilities

pursuant to appropriate power purchase agreements.

**A. Description of the Osprey Energy Center**

The Osprey Energy Center is a natural gas-fired, combined cycle electrical power plant, consisting of two advanced technology Siemens-Westinghouse Model 501F combustion turbine generators ("CTGs") with the capability to use power augmentation to increase the CTGs' power output, two matched heat recovery steam generators ("HRSGs") that include duct-firing capability, and one steam turbine generator rated for the full steam production capacity of the HRSGs. The Osprey Energy Center is expected to achieve a heat rate of approximately 6,800 Btu per kWh at average ambient conditions based on the Higher Heating Value ("HHV") of natural gas. The Osprey Energy Center's process and make-up water to the cooling towers is to be supplied by reclaimed water from the City of Auburndale and from on-site groundwater wells.

Calpine's current projections indicate that the Osprey Energy Center will operate approximately 5,300 hours per year, with projected generation of approximately 2,780,000 megawatt-hours ("MWH") per year, all of which will be sold at wholesale to Seminole, FPL, and other Florida utilities, and, until the Blue Heron Energy Center is commercially operational, to FMPA.

**B. Osprey Energy Center Site and Location**

The Osprey Energy Center site ("Osprey Site") is located in the City of Auburndale, Polk County, Florida. (See Figure 2.) The

Osprey Site consists of approximately 19.5 acres situated approximately 1.5 miles south of downtown Auburndale. The Osprey Site was formerly a citrus grove and was unused until construction of the Osprey Energy Center began. Land uses adjacent to the Osprey Site include the Tampa Electric Company ("TECO") Recker Substation and existing TECO 230 kV transmission line; the Auburndale Power Plant, a 150 MW cogeneration plant; the Auburndale Peaker Energy Center, a 120 MW combustion turbine power plant; the Auburndale Memorial Park cemetery; commercial and industrial businesses; and two small residential enclaves. (See Figure 3.) The Osprey Energy Center is consistent with the City of Auburndale's zoning category and comprehensive plan future land use designation applicable to utility uses.

**C. Osprey Energy Center Directly Associated  
Transmission Facilities**

The Osprey Energy Center is electrically interconnected to the Peninsular Florida transmission grid at the TECO Recker Substation and associated 230 kV transmission line located adjacent to the southeast boundary of the Osprey Site. (See Figure 1.) Transmission system upgrades required to accommodate the delivery of the Osprey Energy Center's output on a firm basis at all times were paid for by Calpine pursuant to TECO's open access transmission tariff.



**D. Osprey Energy Center Gas Supply Arrangements and Facilities**

Natural gas is provided to the Osprey Energy Center via firm transportation service through the Gulfstream pipeline, which became operational in May 2002. Gas is supplied via a 16-inch lateral diameter pipeline that will connect the Osprey Energy Center to the main Gulfstream pipeline. Pursuant to an agreement between Calpine and Gulfstream, Gulfstream has committed to provide firm gas transportation service to operate the Osprey Energy Center for a term of 20 years with renewal provisions beyond the initial term.

**E. Osprey Energy Center Water Supply Arrangements and Associated Facilities**

Reclaimed water is provided to the Osprey Energy Center from the City of Auburndale's Allred Municipal Wastewater Treatment Plant. Additional water is supplied from on-site groundwater wells.

**F. Status of Power Purchase Agreement Between Calpine and Seminole Electric Cooperative, Inc.**

Pursuant to the Commission's Order No. PSC-01-0421-FOF-EC, by which the Commission determined need for the Osprey Energy Center, Calpine makes the following report with respect to the Osprey Energy Center and the Calpine-Seminole PPA. The Osprey Energy Center achieved commercial operating status in May 2004. Effective June 1, 2004, Seminole began buying 350 MW of committed firm capacity and associated energy from the Osprey Energy Center. Also

pursuant to the PPA, Seminole has the opportunity to buy up to the full uncommitted capacity of the Osprey Energy Center from its commercial in-service date through May 31, 2009. The PPA also contains renewal and reopener provisions by which Seminole may purchase up to the full output of the Osprey Energy Center from June 1, 2009 through May 22, 2020. (This ultimate expiration date was agreed upon by Seminole and Calpine because May 22, 2020, is the date on which Seminole's master agreement with its ten member electric distribution cooperatives expires.) Calpine and Seminole have been performing, and continue to perform, their obligations under the PPA.

## **II. Santa Rosa Energy Center**

The Santa Rosa Energy Center is a natural gas-fired cogeneration facility located within the boundary of the Sterling Fiber Chemical Plant in Santa Rosa County, Florida. The Santa Rosa Project achieved commercial in-service status in June 2003. The Santa Rosa Project supplies the process steam requirements of the adjacent Sterling Fiber Chemical Plant, which is the Santa Rosa Project's thermal host, and currently sells electrical energy on an as-available basis at wholesale to Florida load-serving utilities.

### **A. Description of Santa Rosa Energy Center**

The Santa Rosa Energy Center is a natural gas-fired, combined cycle cogeneration power plant. The Santa Rosa Project's generating equipment consists of one advanced technology GE Model 7FA combustion turbine generator having a nominal capacity of 167

MW with a supplementary-fired heat recovery steam generator capable of raising sufficient steam to generate another 74 MW from a GE steam turbine generator and to meet the process steam requirements of the adjacent thermal host.

The Santa Rosa Project is projected to operate approximately 1,000 hours per year, and to generate approximately 240,000 MWH per year, all of which will be sold at wholesale to other Florida utilities (or possibly to other operating utilities within the Southern Company system).

**B. Santa Rosa Energy Center Site and Location**

The Santa Rosa Energy Center site ("Santa Rosa Site") consists of approximately 11 acres located within the boundary of the Sterling Fiber Chemical Plant in Santa Rosa County, Florida. (See Figure 7.) The Santa Rosa Project is consistent with Santa Rosa County's zoning category and comprehensive plan future land use designation applicable to utility and industrial uses.

**C. Santa Rosa Energy Center Directly Associated Transmission Facilities**

The Santa Rosa Energy Center is electrically interconnected to the State of Florida transmission grid at Gulf Power Company's Alligator Swamp Substation through an existing eight mile radial loop 230 kV transmission line connecting the Sterling Fiber Chemical Plant transmission substation. (See Figure 8.) An Interconnect Agreement between Calpine and the Southern Company is in place.

**D. Santa Rosa Energy Center Gas Supply Arrangements and Facilities**

Natural gas is provided to the Santa Rosa Project through the Gulf South Company ("Gulf South") pipeline pursuant to a Transport Agreement between Calpine and Gulf South. Pursuant to the Transport Agreement, Gulf South has committed to provide firm gas transportation service to operate the Santa Rosa Project for a term of 20 years with renewal provisions beyond the initial term.

**E. Santa Rosa Energy Center Water Supply Arrangements and Associated Facilities**

Plant make-up water for the cooling tower and process water requirements is provided to the Santa Rosa Project from on-site wells pursuant to an agreement between the Sterling Fiber Chemical Plant, which is the Santa Rosa Project's thermal host, and the Santa Rosa Energy Center.

**III. Auburndale Power Plant**

The Auburndale Power Plant has a nominal net generating capacity of 150 MW, with 150 MW of capacity at summer peak conditions and 150 MW of capacity at winter peak conditions. The Auburndale Plant achieved commercial operating status in 1994 and consists of one Westinghouse 501D5 combustion turbine generator, one matched HRSG, and one Mitsubishi steam turbine generator. The Auburndale Plant is owned directly by Auburndale Power Partners, L.P.; through subsidiaries, Calpine operates, manages, and holds ownership interests in the Auburndale Plant. Pursuant to a long-term power purchase agreement, the Auburndale Plant supplies 114 MW

of firm capacity and energy to Progress. The Auburndale Plant's additional output is sold at wholesale to other Florida utilities. As a cogeneration facility, the Auburndale Plant provides process steam to Florida Distillers and also to Cutrale Citrus Juices, both of which are located adjacent to the Auburndale Plant.

The Auburndale Plant site is located in unincorporated Polk County immediately east of and adjacent to the Osprey Energy Center site. The Auburndale Plant is electrically interconnected to the Florida bulk power supply grid at TECO's Recker Substation. Natural gas transportation is purchased from out-of-state gas suppliers and delivered to the Auburndale Plant pursuant to a transportation service agreement between Auburndale Power Partners and Peoples Gas System.

#### **IV. Auburndale Peaking Energy Center**

The Auburndale Peaker Project is a 120 MW (net nominal) generating plant with 115 MW of summer peak capacity and 134 MW of winter peak capacity. The Auburndale Peaker Project consists of a single Westinghouse 501D5A combustion turbine generator and achieved commercial in-service status in August 2002. The Auburndale Peaker Project is located within the site of the Auburndale Power Plant in Polk County. The Auburndale Peaker Project's output has been sold and will continue to be sold in the wholesale market to Peninsular Florida retail-serving utilities.

## CHAPTER 3

### FORECAST OF ELECTRIC POWER DEMAND AND ENERGY CONSUMPTION

Preliminary electric power demand and energy analyses have been completed for the Osprey and Blue Heron Energy Centers based on economic dispatch within the Peninsular Florida bulk power grid.

Over the planning horizon covered in this Ten-Year Site Plan, the Osprey Energy Center is projected to operate approximately 5,300 hours per year, with projected generation of approximately 2,780,000 MWH per year, reflecting a total capacity factor of approximately 60.0 percent; the Osprey Energy Center is projected to have an availability factor of approximately 94.5 percent. In addition to Calpine's firm capacity commitment of 350 MW to Seminole, all of the Osprey Energy Center's uncommitted output over the 2004-2013 planning horizon is available to Seminole pursuant to the Seminole-Calpine PPA.

Over the planning horizon covered in this Ten-Year Site Plan, the Blue Heron Energy Center is projected to operate approximately 5,300 hours per year, with projected generation of approximately 5,700,000 MWH per year when both of the Blue Heron units are in operation, reflecting a total capacity factor of approximately 60.0 percent. The Blue Heron Project is expected to have an availability factor of approximately 94.5 percent.

As noted elsewhere in this Ten-Year Site Plan, all of the electricity sales from the Calpine Projects will be made at wholesale to Seminole, FPL, Progress (FPC), FMPA, and other utilities. (In addition to these utilities, Calpine has also made

wholesale power sales from the Calpine Projects to Gulf Power, Tampa Electric Company, the Orlando Utilities Commission, JEA, Reedy Creek, the Florida Municipal Power Pool, and the Utilities Commission of New Smyrna Beach.) Thus, Schedules 2.1 and 2.2, which require data for retail power sales, are not applicable. Schedule 2.3 presents the total forecasted number of wholesale customers and sales for resale. Schedules 3.1, 3.2, and 3.3 present total forecasted summer peak demand, winter peak demand, and net energy for load for the Auburndale Power Project, Osprey Energy Center, Auburndale Peaker Project, Blue Heron Project, and the Santa Rosa Project. Because of the Calpine Projects' high efficiency and relative low-cost position in the overall supply stack for Florida, Calpine anticipates that the electricity sales from the Osprey Energy Center, Auburndale Peaker Project, Blue Heron Project, and Santa Rosa Project at the times of the summer and winter peaks (both the system peak experienced by Calpine and the State of Florida coincident system peak), will be at the respective Projects' full rated output, i.e., 496 MW at the time of the summer peak and 578 MW at the time of the winter peak for the Osprey Energy Center, 150 MW at both the summer and winter peaks for the Auburndale Power Plant, 115 MW at time of the summer peak and 134 MW at the time of the winter peak for the Auburndale Peaker Project, 992 MW at the time of the summer peak and 1,156 MW at the time of the winter peak for the Blue Heron Project, and 223 MW at time of the summer peak and 249 MW at the time of the winter peak for the Santa Rosa Project. (These projections do not include the

additional output that may be available from duct-firing and power augmentation.)

Schedule 4 is not applicable to Calpine because it calls for retail sales and peak demand data. Schedules 5, 6.1, and 6.2 present information regarding fuel requirements and energy sources for Calpine. Schedules 7.1 and 7.2 present information regarding forecasts of capacity, demand, and scheduled maintenance at the time of summer and winter peaks. Due to their high efficiency and relative low-cost position within the available generation resources in Florida, Calpine expects that in both summer and winter peak conditions, all of the capacity of the Calpine Projects will be committed on a firm basis to other Florida utilities, even if only on a week-ahead, day-ahead, or hourly basis. Accordingly, Calpine forecasts that its firm summer and winter coincident peak demands will be the sum of the full rated outputs of the Calpine Projects, for each respective season.



## CHAPTER 4

### FORECASTING METHODS AND PROCEDURES

Analyses of the projected operations of the Calpine Projects have been prepared internally by Calpine based on Calpine's power sales agreements, historical sales from the Calpine Projects, inputs from present and future wholesale power customers for the Calpine Projects' output, and Calpine's best judgments regarding future markets for the Projects' output.

## CHAPTER 5

### FORECAST OF FACILITIES REQUIREMENTS

Schedules 7.1 and 7.2 present information regarding forecasts of capacity, demand, and scheduled maintenance at the time of summer and winter peaks. Because of their high efficiency and relatively low-cost position within the available generation resources in Florida, Calpine expects that in both summer and winter peak conditions, all of the capacity of the Calpine Projects will be committed on a firm basis to Seminole, FPL, Progress (FPC), FMPA, and other Florida utilities, including, with regard to power produced by the Santa Rosa Project, to Gulf Power or its sister companies in the Southern Company system. Accordingly, Calpine projects that its firm summer and winter peak demands will in fact be the full rated output of the Calpine Projects for each respective season. Calpine believes that this will be representative of the coincident peak seasonal demands imposed on the Calpine Projects at the time of the State of Florida summer and winter coincident peaks. Schedule 8 presents information regarding planned and prospective generating facility additions and changes.

#### I. Blue Heron Energy Center

The Blue Heron Energy Center will be a natural gas-fired, combined cycle electrical power plant located west of Vero Beach in Indian River County. Blue Heron Unit 1, a 540 MW combined cycle unit, is expected to achieve commercial in-service status by July 1, 2007. The Blue Heron Project will supply capacity and energy at wholesale to Peninsular Florida load-serving utilities, including

FMPPA and others.

**A. Description of Blue Heron Energy Center**

The Blue Heron Energy Center will be a natural gas-fired, combined cycle electrical power plant. The Blue Heron Project will consist of four advanced technology Siemens-Westinghouse Model 501F combustion turbine generators with the capability to use power augmentation to increase the CTGs' power output, four matched HRSGs that include duct-firing capability, and two steam turbine generators rated for the full steam production capacity of the HRSGs. The Blue Heron Project is anticipated to have a heat rate of approximately 6,800 Btu per kWh at average ambient conditions based on the HHV of natural gas. The Blue Heron Project's process and make-up water to the cooling towers will be supplied primarily under a contract with Indian River County and the Indian River Farms Water Control District source canal system.

Calpine's current projections indicate that the Blue Heron Energy Center will operate approximately 5,300 hours per year, with projected generation of approximately 5,700,000 MWH per year, all of which will be sold at wholesale to other Peninsular Florida utilities.

**B. Blue Heron Energy Center Site and Location**

The Blue Heron Energy Center site ("Blue Heron Site") is located west of the City of Vero Beach in Indian River County, Florida. (See Figure 4.) The Blue Heron Site consists of approximately 47 acres situated approximately 4.5 miles southwest of Vero Beach, east of Interstate 95. The Blue Heron Site is

primarily undeveloped and is currently unused. Land uses adjacent to the Blue Heron Site include the OceanSpray spray field, Interstate 95, agricultural uses, a correctional institution, a landfill and residential areas. (See Figure 5.) The Blue Heron Project is consistent with the Indian River County zoning category and comprehensive plan future land use designation applicable to utility uses.

**C. Blue Heron Energy Center Directly Associated  
Transmission Facilities**

The Blue Heron Project is planned to be electrically tied to the Peninsular Florida transmission grid by interconnecting to two of Florida Power & Light Company's ("FPL") 230 kV transmission lines, specifically those running from Malabar to Midway and from Malabar to Emerson. Interconnection and system impact studies have been completed, and an Interconnection and Operations Agreement ("IOA") between FPL and Calpine has been executed and is in place. The IOA addresses those upgrades of transmission facilities that will be required to accommodate power deliveries from the Blue Heron Project to other utilities in Peninsular Florida. The identified upgrades will be paid for by Calpine pursuant to FPL's open access transmission tariff as identified in the IOA.

**D. Blue Heron Energy Center Gas Supply Arrangements  
and Facilities**

Calpine expects natural gas transportation service to be provided to the Blue Heron Project by Florida Gas Transmission Company.

**E. Blue Heron Energy Center Water Supply Arrangements  
and Associated Facilities**

Plant make-up water for the cooling tower and process water requirements, as well as wastewater generation have been estimated. The Blue Heron Project's primary sources of process and makeup water to the cooling towers will be excess surface water from the canal system of the Indian River Farms Water Control District and stormwater from Indian River County. The Blue Heron Project will utilize wet cooling towers and will feature a zero liquid discharge system that will ensure that no liquids from the plant's operations will be discharged into the watercourses of Florida. Water pipelines will be required by the Blue Heron Project to interconnect with the Indian River Farms Water Control District and with Indian River County stormwater water sources. The final design of the interconnection locations and facilities is currently under way. There will not be any on-site wells.

**F. Blue Heron Energy Center Regulatory and  
Permitting Schedules**

Calpine filed the site certification application ("SCA") for the Blue Heron Project in October 2000. The land use hearing was held on February 6, 2002, and the Administrative Law Judge issued a Land Use Recommended Order on March 5, 2002. A site certification hearing is anticipated in 2005. Calpine expects to file its petition for determination of need for the Blue Heron Project by mid-September 2004.

#### IV. Potential Sites

Calpine has no potential sites under active development at this time, but is continuously identifying and evaluating potential sites and opportunities.

## CHAPTER 6

### OTHER PLANNING ASSUMPTIONS AND INFORMATION

This chapter addresses the twelve discussion items identified as other planning assumptions and information in Form FPSC/EAG 43.

#### **Modeling Transmission Constraints**

Transmission constraints and contingencies for the Osprey Energy Center were modeled using the General Electric MAPPs transmission system modeling software. The transmission system impact study for the Osprey Energy Center included load flow analyses, transient stability analyses, and short circuit analyses. The studies indicated that, under normal operating conditions, that is, with all facilities in service, the Osprey Energy Center will not materially burden the transmission system or violate any transmission constraints or contingencies in Peninsular Florida. The actual transmission upgrades required to accommodate firm delivery of the Osprey Energy Center's output at all times were determined in accordance with TECO's open access transmission tariff.

The contingency lists for both the power flow and stability analyses were developed in compliance with the FRCC Planning Principles and Guides, dated September 25, 1996. The primary data for the transmission system impact study were obtained from the FRCC 1999 series summer and winter power flow cases for the year 2003, which were downloaded from the FERC Form 715 data site.

With respect to the Blue Heron Project, Calpine has entered into an Interconnection and Operations Agreement with FPL. The

actual upgrades required to interconnect the Blue Heron Energy Center have been determined pursuant to FPL's open access transmission tariff.

### **Analysis of Overall Project Economics**

Calpine's Ten-Year Site Plan provides for the continued operation of the Osprey Energy Center, the Auburndale Power Plant, the Auburndale Peaker Energy Center, and the Santa Rosa Energy Center, for the construction and operation of the Blue Heron Energy Center. At this time, the overall economics of the Osprey Energy Center and Blue Heron Energy Center have been evaluated by estimating how much energy these units will generate within the Peninsular Florida power supply system based on economic dispatch modeling using the PROMOD IV® computer model. Because the Osprey Energy Center and Blue Heron Project are significantly cost-effective, both operationally and in terms of these units' installed cost, no sensitivity cases with respect to variations in the load forecast were analyzed for this Ten-Year Site Plan.

### **Derivation of Base Case Fuel Price Forecast**

The projected operations of the Osprey Energy Center, Auburndale Peaker Project, Blue Heron Project, and Santa Rosa Project reported in this Ten-Year Site Plan were based on representative fuel prices paid historically for electric fuels in Florida and on Calpine's best judgments regarding future fuel prices in Florida.



### **Sensitivity Analyses of Fuel Price Differentials**

Calpine previously prepared a fuel price sensitivity analysis of the Osprey and Blue Heron Energy Centers' operations using a high natural gas price forecast. The results of this sensitivity analysis indicated slightly lower capacity factors for Osprey and Blue Heron but slightly greater reductions in Peninsular Florida wholesale power supply costs resulting from those units' more efficient operations within the Peninsular Florida power supply system.

### **Generating Unit Performance Modeling**

Performance of both the Osprey and Blue Heron Energy Centers was modeled at an estimated equivalent availability factor of approximately 94.5 percent. Both units were modeled with a forced outage rate of approximately 2.0 percent and a maintenance outage rate of approximately 3.5 percent on an annual average basis.

### **Financial Assumptions**

The financial analyses prepared using the PROMOD IV® model assumed a total installed project cost of \$333 per kilowatt for both the Osprey Energy Center and the Blue Heron Project.

### **Integrated Resource Planning Process**

Calpine generally considered all reasonably feasible and available supply-side alternatives in selecting the generation technology for the Osprey Energy Center. Several technologies, such as waste-to-energy, were eliminated from consideration because they are not cost-effective. Screening analyses were prepared for the following technologies: gas-fired and oil-fired combustion

turbines, gas-fired and oil-fired combined cycle units, gas-fired steam generation units, integrated coal gasification combined cycle units, and conventional pulverized coal-fired steam units, nuclear units, and renewable energy. These screening analyses are applicable to all of the Calpine Projects.

#### **Generation and Transmission Reliability Criteria**

Calpine selected natural gas-fired combined cycle generating technology for the Osprey, Blue Heron, and Santa Rosa Projects on the basis of their overall efficiency and reliability. (The original developers of the Auburndale Power Plant selected combined cycle technology, in a cogeneration application, for the same reasons.) Calpine selected simple cycle combustion turbine technology for the Auburndale Peaker Project because of the relative economics of that technology for providing peaking service. Calpine plans to operate its plants to maximize their availability for supplying power into the Florida wholesale power market. Calpine did not apply a specific minimum availability criterion to its selection of the generation technologies for the Calpine Projects.

#### **Durability of Demand Side Management Program Energy Savings**

This item is not applicable to Calpine because as a wholesale-only utility, Calpine does not engage directly in end-use demand side management programs.

#### **Strategic Concerns**

Calpine considered relevant strategic factors in evaluating alternatives for the Calpine Projects. Among other factors,

Calpine considered that:

1. the Osprey and Santa Rosa Energy Centers are fueled by, and the Blue Heron Energy Center will be fueled by, domestically produced natural gas, which is not subject to interruption due to political or other events;
2. the Osprey, Blue Heron, and Santa Rosa Projects' use of natural gas and advanced emissions control technology will protect Florida's environment while reducing Calpine's exposure to possible future changes in environmental regulations; and
3. the Osprey, Blue Heron, and Santa Rosa Projects' high efficiencies will ensure their long-term viability.

#### **Procurement Process for Supply-Side Resources**

Calpine evaluated various gas-fired combined cycle generators based on generally available industry information. Calpine chose Siemens-Westinghouse Model 501F combustion turbines for the Calpine Osprey and Blue Heron Energy Centers, and a GE Model 7FA combustion turbine and GE steam turbine for the Santa Rosa Project. The Osprey Energy Center and Santa Rosa Energy Center have achieved commercial operation. The combustion turbines have been secured for the Blue Heron Project by deposit. Full release of these combustion turbines has already occurred and these components are in a delivery queue. Full release of the heat recovery steam generators and the steam turbine generators for the Blue Heron Project will be issued before construction begins.

## **Transmission Construction and Upgrade Plans**

Calpine's power plant construction plans do not require the construction or upgrade of any electric utility system transmission lines that would require certification under the Transmission Line Siting Act.

## CHAPTER 7

### ENVIRONMENTAL AND LAND USE INFORMATION

This chapter provides brief descriptions of the Calpine Projects as well as discussions of respective land and environmental features, water supply, and projected air and noise emissions information.

#### I. Osprey Energy Center

##### **A. Site Description**

The site of the Osprey Energy Center ("Osprey Site") is located in the City of Auburndale, Polk County, Florida. (See Figure 2.) The Osprey Site consists of approximately 19.5 acres situated approximately 1.5 miles southwest of downtown Auburndale. Access to the Osprey Site will be from Derby Avenue, a two-lane county collector road that runs along the north boundary of the Osprey Site.

##### **B. Land and Environmental Features**

The Osprey Site was a non-producing citrus grove which was unused. There are no sensitive natural resources, scenic or cultural lands, or archaeological or historic resources on the site. There are no sensitive human receptors, such as hospitals, near the Osprey Site. Land uses adjacent to the Osprey Site include the TECO Recker Substation and 230 kV transmission line, the existing 150 MW Auburndale Power Plant, two small residential enclaves, a cemetery, and commercial and industrial operations, as shown in Figure 3. The Osprey Site was selected because it has no environmentally sensitive features (e.g., wetlands or surface water

bodies), because it is adjacent to existing, required infrastructure (e.g., access road, natural gas and water pipelines, substation and transmission lines), and because it is predominantly surrounded by commercial and industrial development and non-residential uses. On a MW per acre basis, the Osprey Energy Center maximizes the land use while simultaneously minimizing environmental impacts.

#### **C. Water Supply**

The Osprey Energy Center utilizes a combination of reclaimed water and well water for its supply. Over time, Calpine will utilize additional reclaimed water as it becomes available from the City of Auburndale, and will correspondingly reduce the use of groundwater for the Osprey Energy Center's make-up and process water requirements. Reclaimed water is supplied from the City of Auburndale's Allred Wastewater Treatment Plant.

#### **D. Air and Noise Emissions**

With its state-of-the-art combined cycle technology and natural gas fuel, the Osprey Energy Center has relatively low air emissions.

Calpine has obtained, and will operate the Osprey Energy Center in compliance with, a valid and effective variance from the City of Auburndale's applicable noise ordinances.

### **II. Auburndale Power Plant and Auburndale Peaker Energy Center**

The Auburndale Power Plant and the Auburndale Peaker Energy Center are located on the same site in unincorporated Polk County.

This site is immediately adjacent to and east of the Osprey Site. The site is in a heavily developed area; adjacent land uses include the Osprey Energy Center, TECO's Recker Substation, a distillery, a citrus juice processing facility, other commercial and industrial operations, a cemetery, and two small residential enclaves. There are no sensitive natural resources, scenic or cultural lands, or archaeological or historic resources on the site. There are no sensitive human receptors, such as hospitals, near the site.

The Auburndale Power Plant and the Auburndale Peaker Project obtain their water requirements from on-site wells. These projects utilize highly efficient generating technologies, emissions control technologies, and good combustion practices to minimize air emissions. Both projects comply with applicable noise ordinances and regulations.

### III. Blue Heron Energy Center

#### **A. Site Description**

The Blue Heron Site is located southwest of the City of Vero Beach in Indian River County, Florida. (See Figure 4.) The Blue Heron Site consists of approximately 47 acres situated approximately 4.5 miles southwest of Vero Beach and immediately east of Interstate 95. Access to the site will be from Range Line Road or 74th Avenue.

#### **B. Land and Environmental Features**

The Blue Heron Site is vacant, undeveloped property. There are no scenic or cultural lands, nor any archaeological or historic resources on the site. Vegetation on the Blue Heron Site consists

of dry flatwoods dominated by slash pine. Gallberry and saw palmetto dominate the understory. Two small wetlands are located on the Blue Heron Site. A small herbaceous marsh is located on the central portion of the site and a larger shrub swamp is located on the northern portion. The Blue Heron Site is bordered on the north and east by drainage and irrigation canals. In addition to past logging activities on the Blue Heron Site, existing disturbances adjacent to the site include Interstate 95, which borders the west side of the site, and sprayfield operations to the east. The Blue Heron Project's construction and operation are not expected to impact any of the wetlands on the Blue Heron Site.

Wildlife on the Blue Heron Site consists of species typical for the south Florida flatwoods ecosystem. Only two listed species were observed on-site, the gopher tortoise and little blue heron, both common to the region. The Blue Heron Site does not represent unique habitat for any listed species.

Land uses adjacent to or near the Blue Heron Site include the OceanSpray wastewater spray field, Interstate 95, agricultural uses, a correctional institution, a landfill and low density residential areas. (See Figure 4.) The Blue Heron Site is adjacent to or near existing, required infrastructure (e.g., access roads and transmission lines), and is predominantly surrounded by industrial development and agricultural uses. Further, the terrain is favorable for power plant siting and is of sufficient size to accommodate the Blue Heron Project. On a MW per acre basis, the Blue Heron Project has been designed to minimize the amount of land



used and simultaneously minimize the environmental impacts.

**C. Water Supply**

Plant make-up water for the cooling tower and process water requirements, as well as wastewater generation, have been estimated. The Blue Heron Project's sources of process and makeup water to the cooling towers will be excess surface water from the canal system of the Indian River Farms Water Control District and stormwater from Indian River County; the Blue Heron Project's water supply will be provided pursuant to an agreement between Calpine, Indian River County, and the Indian River Farms Water Control District. The Project will utilize wet cooling towers and will feature a zero liquid discharge system that will ensure that no liquids from the plant's operations will be discharged. Water pipelines will be required by the Blue Heron Project to interconnect with the Indian River Farms Water Control District, and may be required to connect with Indian River County water sources. The design of the interconnection locations and facilities is currently under way. There will not be any on-site wells.

**D. Air and Noise Emissions**

With its state-of-the-art combined cycle technology and natural gas fuel, the Blue Heron Project is projected to have relatively low air emissions.

Based on the adjacent land uses, the Blue Heron Project is not expected to have a significant impact on the existing noise levels at the Blue Heron Site. The Blue Heron Project will be in

compliance with all local noise ordinances.

#### IV. Santa Rosa Energy Center

##### **A. Site Description**

The Santa Rosa Energy Center is located within the boundary of the Sterling Fiber Chemical Plant in Santa Rosa County, Florida. (See Figure 7.) The Santa Rosa Site consists of approximately 11 acres situated south of Pace, Florida. Access to the site will be from State Highway 281.

##### **B. Land and Environmental Features**

The Santa Rosa Site is developed property. There are no scenic or cultural lands, nor any archaeological or historic resources on the site. The Santa Rosa Project is located within the site of its thermal host, an existing chemical plant, for which the Santa Rosa Project supplies process steam.

Land uses adjacent to or near the Santa Rosa Site include State Highway 90, agricultural uses, and the east shore of Escambia Bay. (See Figure 7.) The Santa Rosa Site is adjacent to or near existing, required infrastructure (e.g., access roads, transmission substation and lines), and is predominantly surrounded by industrial development and agricultural uses. On a MW per acre basis, the Santa Rosa Project has been designed to minimize the amount of land used and simultaneously minimize the Project's environmental impacts.

##### **C. Water Supply**

Plant make-up water for the cooling tower and process water requirements, as well as wastewater generation have been estimated.

Water requirements will be provided to the Santa Rosa Project from on-site wells pursuant to an agreement between the Sterling Fiber Chemical Plant, which is the Santa Rosa Project's thermal host, and the Santa Rosa Energy Center.

**D. Air and Noise Emissions**

With its state-of-the-art combined cycle technology and natural gas fuel, the Santa Rosa Project has relatively low air emissions.

Based on the adjacent land uses, the Santa Rosa Project is not expected to have a significant impact on the existing noise levels at the Sterling Fiber Chemical Plant site. The Santa Rosa Project is and will be in compliance with all local noise ordinances.

Calpine Construction Finance Company, L.P.  
 Schedule 1  
 Existing Generating Facilities  
 As of August 31, 2004

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
<u>Plant Name</u>	<u>Unit No.</u>	<u>Location</u>	<u>Unit Type</u>	<u>Fuel</u>		<u>Fuel Transport</u>		<u>Alt. Fuel Days Use</u>	<u>Commercial In-Service Month/Year</u>	<u>Expected Retirement Month/Year</u>	<u>Gen. Max. Nameplate KW</u>	<u>Net Capability</u> <u>Summer MW</u> <u>Winter MW</u>	
Auburndale	1	Polk Co.	CC	NG	FO2	PL	TRK	8	8/1994	unknown	160	150	150
Auburndale Peaker	1	Polk Co.	CT	NG	N/A	PL	N/A	8	8/2002	unknown	135	115	134
Santa Rosa	1	Santa Rosa Co.	CC	NG	N/A	PL	N/A	N/A	6/2003	unknown	241	223	249
Osprey	1	Polk Co.,	CC	NG	N/A	PL	N/A	N/A	5/2004	unknown	527	496	578

Calpine Construction Finance Company, L.P.  
**Schedule 2.1**  
 History and Forecast of Energy Consumption and  
 Number of Customers by Customer Class

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Rural and Residential						Commercial		
<u>Year</u>	<u>Population</u>	<u>Members Per Household</u>	<u>GWH</u>	<u>Average No. of Customers</u>	<u>Average KWH Consumption Per Customer</u>	<u>GWH</u>	<u>Average Number of Customers</u>	<u>Average KWH Consumption Per Customer</u>

Not Applicable

Calpine Construction Finance Company, L.P.  
 Schedule 2.2  
 History and Forecast of Energy Consumption and  
 Number of Customers by Customer Class

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Industrial					
		Average	Average KWH	Railroads	Street &	Other Sales	Total Sales
		Number of	Consumption	and Railways	Highway	to Public	to Ultimate
<u>Year</u>	<u>GWH</u>	<u>Customers</u>	<u>Per Customer</u>	<u>GWH</u>	<u>GWH</u>	<u>Authorities</u>	<u>Consumers</u>
						<u>GWH</u>	<u>GWH</u>
Not Applicable							

Calpine Construction Finance Company, L.P.  
 Schedule 2.3  
 History and Forecast of Energy Consumption and  
 Number of Customers by Customer Class, 2002 - 2013

(1)	(2)	(3)	(4)	(5)	(6)
<u>Year</u>	Sales For Resale <u>GWH</u>	Utility Use & Losses <u>GWH</u>	Net Energy For Load <u>GWH</u>	Estimated Wholesale Customers (Average No.)	Total Estimated Number Of Customers
2002	1,051		1,051	5	5
2003	1,129		1,129	7	7
2004	3,177		3,177	11	11
2005	4,335		4,335	12	12
2006	4,335		4,335	12	12
2007	5,754		5,754	12	12
2008	7,173		7,173	12	12
2009	8,592		8,592	12	12
2010	10,011		10,011	12	12
2011	10,011		10,011	12	12
2012	10,011		10,011	12	12
2013	10,011		10,011	12	12

Calpine Construction Finance Company, L.P.  
Schedule 3.1  
History and Forecast of Summer Peak Demand in MW

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<u>Year</u>	<u>Total</u>	<u>Wholesale</u>	<u>Retail</u>	<u>Interruptible</u>	<u>Residential Load Management</u>	<u>Residential Conservation</u>	<u>Comm./Ind. Load Management</u>	<u>Comm./Ind. Conservation</u>	<u>Net Firm Demand</u>
2002	265	265	0	N/A	N/A	N/A	N/A	N/A	265
2003	488	488	0	N/A	N/A	N/A	N/A	N/A	488
2004	984	984	0	N/A	N/A	N/A	N/A	N/A	984
2005	984	984	0	N/A	N/A	N/A	N/A	N/A	984
2006	984	984	0	N/A	N/A	N/A	N/A	N/A	984
2007	1,480	1,480	0	N/A	N/A	N/A	N/A	N/A	1,480
2008	1,480	1,480	0	N/A	N/A	N/A	N/A	N/A	1,480
2009	1,976	1,976	0	N/A	N/A	N/A	N/A	N/A	1,976
2010	1,976	1,976	0	N/A	N/A	N/A	N/A	N/A	1,976
2011	1,976	1,976	0	N/A	N/A	N/A	N/A	N/A	1,976
2012	1,976	1,976	0	N/A	N/A	N/A	N/A	N/A	1,976
2013	1,976	1,976	0	N/A	N/A	N/A	N/A	N/A	1,976



Calpine Construction Finance Company, L.P.  
**Schedule 3.2**  
History and Forecast of Winter Peak Demand in MW

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<u>Year</u>	<u>Total</u>	<u>Wholesale</u>	<u>Retail</u>	<u>Interruptible</u>	<u>Residential Load Management</u>	<u>Residential Conservation</u>	<u>Comm./Ind. Load Management</u>	<u>Comm./Ind. Conservation</u>	<u>Net Firm Demand</u>
2002/03	284	284	0	N/A	N/A	N/A	N/A	N/A	284
2003/04	533	533	0	N/A	N/A	N/A	N/A	N/A	533
2004/05	1,111	1,111	0	N/A	N/A	N/A	N/A	N/A	1,111
2005/06	1,111	1,111	0	N/A	N/A	N/A	N/A	N/A	1,111
2006/07	1,111	1,111	0	N/A	N/A	N/A	N/A	N/A	1,111
2007/08	1,689	1,689	0	N/A	N/A	N/A	N/A	N/A	1,689
2008/09	1,689	1,689	0	N/A	N/A	N/A	N/A	N/A	1,689
2009/10	2,267	2,267	0	N/A	N/A	N/A	N/A	N/A	2,267
2010/11	2,267	2,267	0	N/A	N/A	N/A	N/A	N/A	2,267
2011/12	2,267	2,267	0	N/A	N/A	N/A	N/A	N/A	2,267
2012/13	2,267	2,267	0	N/A	N/A	N/A	N/A	N/A	2,267
2013/14	2,267	2,267	0	N/A	N/A	N/A	N/A	N/A	2,267

Calpine Construction Finance Company, L.P.  
 Schedule 3.3  
 History and Forecast of Annual Net Energy for Load - GWH

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
<u>Year</u>	<u>Total</u>	<u>Residential Conservation</u>	<u>Comm./Ind. Conservation</u>	<u>Retail</u>	<u>Wholesale</u>	<u>Utility Use &amp; Losses</u>	<u>Net Energy for Load *</u>	<u>Load ** Factor %</u>	<u>NEL</u>
2002	1,051	N/A	N/A	0	1,051		1,051	42.2	
2003	1,129	N/A	N/A	0	1,129		1,129	24.2	
2004	3,177	N/A	N/A	0	3,177		3,177	32.6	
2005	4,335	N/A	N/A	0	4,335		4,335	44.5	
2006	4,335	N/A	N/A	0	4,335		4,335	44.5	
2007	5,754	N/A	N/A	0	5,754		5,754	38.9	
2008	7,173	N/A	N/A	0	7,173		7,173	48.3	
2009	8,592	N/A	N/A	0	8,592		8,592	43.3	
2010	10,011	N/A	N/A	0	10,011		10,011	50.4	
2011	10,011	N/A	N/A	0	10,011		10,011	50.4	
2012	10,011	N/A	N/A	0	10,011		10,011	50.4	
2013	10,011	N/A	N/A	0	10,011		10,011	50.4	

Notes:

\* Net Energy for Load for is based on actual in-service dates for Auburndale Power Plant, Auburndale Peaker Energy Center, Santa Rosa Energy Center, and Osprey Energy Center, and on a projected July 2007 in-service date for Blue Heron Unit 1 and a projected July 2009 in-service date for Blue Heron Unit 2.

\*\*Load Factor calculations are based on projected annual winter peak output of units in service.

Calpine Construction Finance Company, L.P.  
 Schedule 4  
 Previous Year and 2-Year Forecast of Retail Peak Demand  
 and Net Energy For Load by Month

(1)	(2)	(3)	(4)	(5)	(6)	(7)
<u>Month</u>	<u>Actual</u>		<u>Forecast</u>		<u>Forecast</u>	
	<u>Peak Demand</u> <u>MW</u>	<u>NEL</u> <u>GWH</u>	<u>Peak Demand</u> <u>MW</u>	<u>NEL</u> <u>GWH</u>	<u>Peak Demand</u> <u>MW</u>	<u>NEL</u> <u>GWH</u>
January	Not Applicable					
February						
March						
April						
May						
June						
July						
August						
September						
October						
November						
December						

Calpine Construction Finance Company, L.P.  
Schedule 5  
Fuel Requirements

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
				<u>Actual</u>	<u>Est.</u>										
<u>Fuel Requirements</u>			<u>Units</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
(1)	Nuclear		Trillion BTU												
(2)	Coal		1000 Ton												
(3)	Residual	Total	1000 BBL												
(4)		Steam	1000 BBL												
(5)		CC	1000 BBL												
(6)		CT	1000 BBL												
(7)		Diesel	1000 BBL												
(8)	Distillate	Total	1000 BBL	33.03	11.76	14.10	14.46	14.46	14.46	14.46	14.46	14.46	14.46	14.46	14.46
(9)		Steam	1000 BBL												
(10)		CC	1000 BBL	33.03	11.53	13.01	13.01	13.01	13.01	13.01	13.01	13.01	13.01	13.01	13.01
(11)		CT	1000 BBL		0.23	1.09	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46
(12)		Diesel	1000 BBL												
(13)	Natural Gas	Total	1000 MCF	8,120	8,512	22,812	30,943	30,943	40,592	50,241	59,890	69,540	69,540	69,540	69,540
(14)		Steam	1000 MCF												
(15)		CC	1000 MCF	8,120	8,350	22,042	29,916	29,916	39,565	49,215	58,864	68,513	68,513	68,513	68,513
(16)		CT	1000 MCF		162	770	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027
(17)	Other (Specify)		Trillion BTU												

Calpine Construction Finance Company, L.P.

Schedule 6.1

Energy Sources (Units)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
<u>Energy Sources</u>			<u>Units</u>	<u>Actual</u>	<u>Est.</u>										
				<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
(1)	Annual Firm Interchange		GWH												
(2)	Nuclear		GWH												
(3)	Residual	Total	GWH												
(4)		Steam	GWH												
(5)		CC	GWH												
(6)		CT	GWH												
(7)		Diesel	GWH												
(8)	Distillate	Total	GWH	23	10	10	10	10	10	10	10	10	10	10	10
(9)		Steam	GWH												
(10)		CC	GWH	23	9	9	9	9	9	9	9	9	9	9	9
(11)		CT	GWH		1	1	1	1	1	1	1	1	1	1	1
(12)		Diesel	GWH												
(13)	Natural Gas	Total	GWH	1,028	1,119	3,167	4,325	4,325	5,744	7,163	8,582	10,001	10,001	10,001	10,001
(14)		Steam	GWH												
(15)		CC	GWH	1,028	1,033	3,053	4,211	4,211	5,630	7,049	8,468	9,887	9,887	9,887	9,887
(16)		CT	GWH		86	114	114	114	114	114	114	114	114	114	114
(17)	Other (Specify)		GWH												
(18)	Net Energy for Load		GWH	1,051	1,129	3,177	4,335	4,335	5,754	7,173	8,592	10,011	10,011	10,011	10,011

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Calpine Construction Finance Company, L.P.

Schedule 7.1

Forecast of Capacity, Demand, and Scheduled Maintenance at Time of Summer Peak

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Year	Total Installed Capacity MW	Firm Capacity Import MW	Firm Capacity Export MW	QF MW	Total Capacity Available MW	System Firm Summer Peak Demand(1) MW	Reserve Margin before Maintenance MW	% of Peak	Scheduled Maintenance MW	Reserve Margin after Maintenance MW	% of Peak
2003	488	0	0	0	488	488	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2004	984	0	0	0	984	984	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2005	984	0	0	0	984	984	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2006	984	0	0	0	984	984	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2007	1,480	0	0	0	1,480	1,480	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2008	1,480	0	0	0	1,480	1,480	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2009	1,976	0	0	0	1,976	1,976	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2010	1,976	0	0	0	1,976	1,976	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2011	1,976	0	0	0	1,976	1,976	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2012	1,976	0	0	0	1,976	1,976	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2013	1,976	0	0	0	1,976	1,976	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)

Notes:

(1) As predominantly base load plants with low planned outage rates, Calpine expects to deliver the full rated output of the Calpine Projects at the time of summer peak.

Calpine Construction Finance Company, L.P.  
Schedule 7.2

Forecast of Capacity, Demand, and Scheduled Maintenance at Time of Winter Peak

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Year	Total Installed Capacity MW	Firm Capacity Import MW	Firm Capacity Export MW	QF MW	Total Capacity Available MW	System Firm Winter Peak Demand(1) MW	Reserve Margin before Maintenance MW	Reserve Margin % of Peak	Scheduled Maintenance MW	Reserve Margin after Maintenance MW	Reserve Margin % of Peak
2003	533	0	0	0	533	533	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2004	1,111	0	0	0	1,111	1,111	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2005	1,111	0	0	0	1,111	1,111	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2006	1,111	0	0	0	1,111	1,111	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2007	1,689	0	0	0	1,689	1,689	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2008	1,689	0	0	0	1,689	1,689	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2009	2,267	0	0	0	2,267	2,267	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2010	2,267	0	0	0	2,267	2,267	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2011	2,267	0	0	0	2,267	2,267	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2012	2,267	0	0	0	2,267	2,267	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2013	2,267	0	0	0	2,267	2,267	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)

Notes:

(1) As predominantly base load plants with low planned outage rates, Calpine expects to deliver the full rated output of the Calpine Projects at the time of winter peak.



Calpine Construction Finance Company, L.P.  
**Schedule 8**  
 Planned and Prospective Generating Facility Additions and Changes

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Plant Name	Unit No.	Location	Unit Type	Fuel Pri	Fuel Alt	Fuel Transport Pri	Fuel Transport Alt	Const. Start Date	Commercial In-Service Mo/Yr	Expected Retirement Mo/Yr	Gen. Max. Nameplate KW	Net Capability Summer MW	Net Capability Winter MW	Status
Blue Heron	1	Indian River	CC	NG	N/A	PL	N/A	7/2005	7/2007	unknown	540,000	496	578	Active Devel.
Blue Heron	2	Indian River	CC	NG	N/A	PL	N/A	7/2007	7/2009	unknown	540,000	496	1,156	Under Devel.

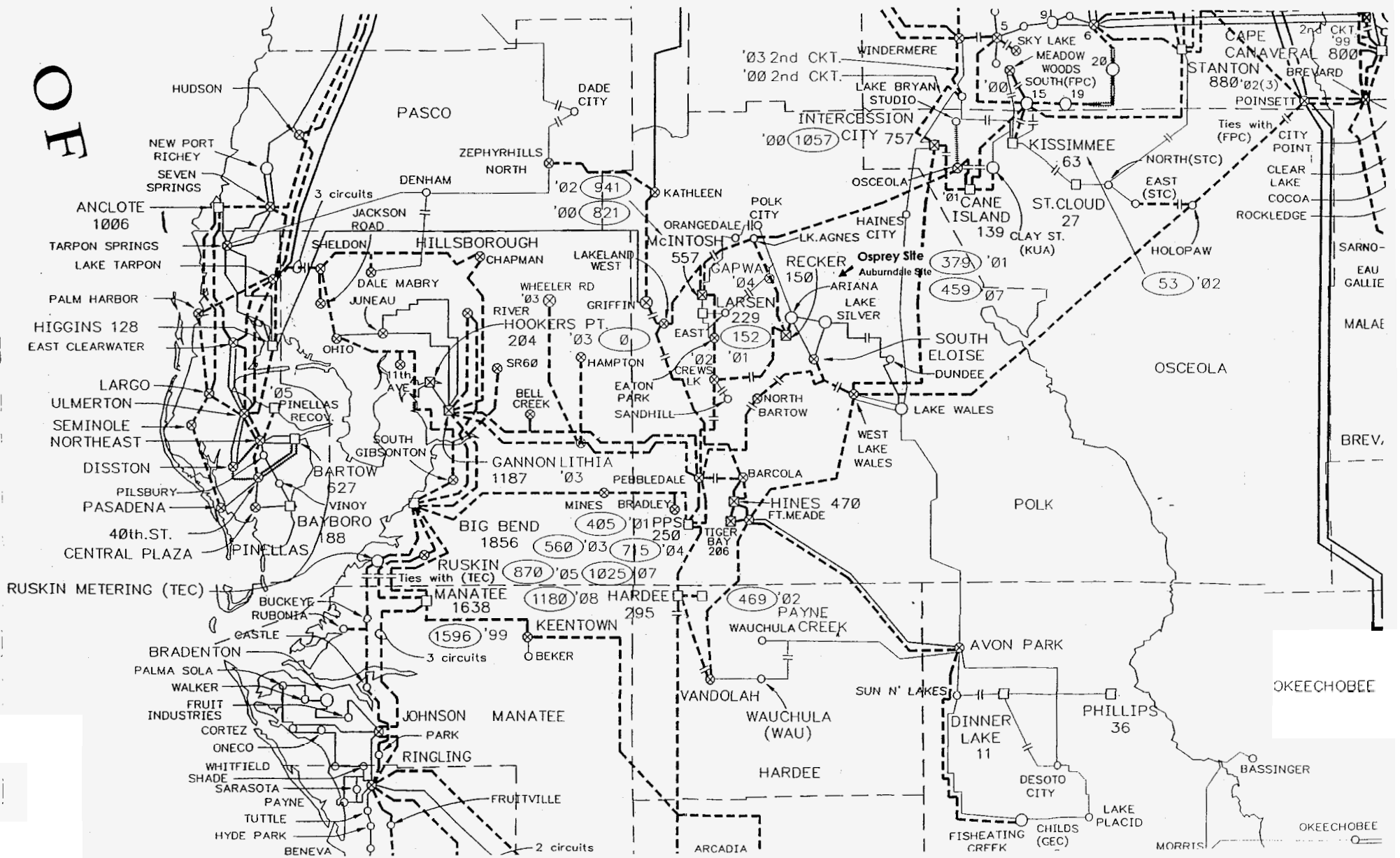
Calpine Construction Finance Company, L.P.  
 Schedule 9 - Blue Heron Energy Center  
 Status Report and Specifications of Proposed Generating Facilities

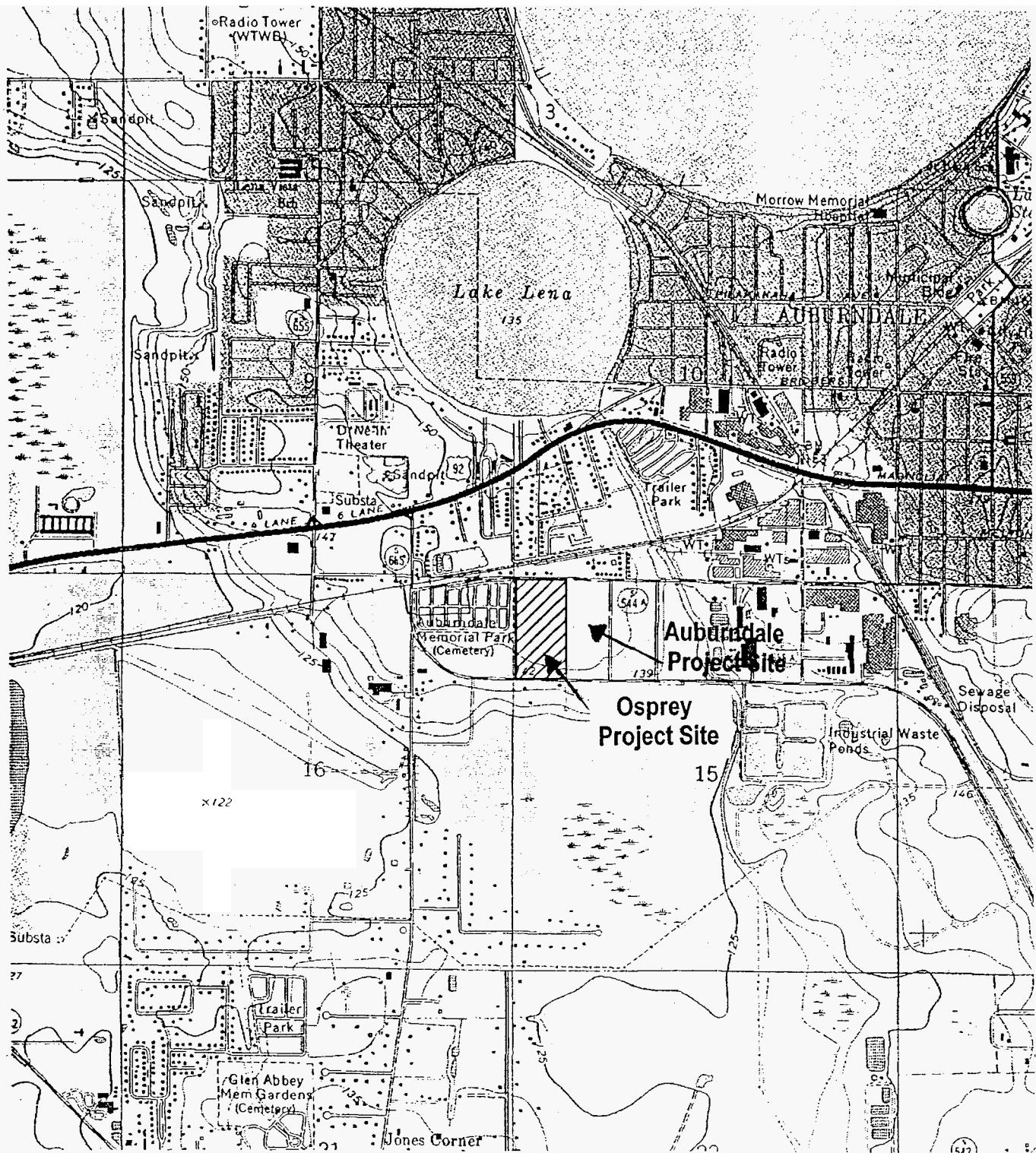
(1)	Plant Name and Unit Number	Blue Heron Energy Center
(2)	Capacity a. Summer: b. Winter:	992 MW 1,156 MW
(3)	Technology Type:	Combined Cycle
(4)	Anticipated Construction Timing a. Field construction start - date: b. Commercial in service - date:	Unit 1 - 3rd Quarter 2005; Unit 2 - 3rd Quarter 2007 Unit 1 - 3rd Quarter 2007; Unit 2 - 3rd Quarter 2009
(5)	Fuel a. Primary fuel: b. Alternate fuel:	Natural Gas N/A
(6)	Air Pollution Control Strategy:	Dry Low-NOx Burners, Selective Catalytic Reduction (SCR) and Good Combustion Practices
(7)	Cooling Method:	Wet Cooling Tower
(8)	Total Site Area:	47 acres
(9)	Construction Status:	Planned
(10)	Certification Status:	Site Certification Application filed October 2000; Need Determination Hearing expected 4th Quarter 2004; Land Use Hearing held 1/2002; Recommended Land Use Order published by ALJ 3/5/2002
(11)	Status With Federal Agencies:	Calpine has obtained Market Based Rate Authority from the FERC
(12)	Projected Unit Performance Data Planned Outage Factor (POF): Forced Outage Factor (FOF): Equivalent Availability Factor (EAF): Estimated Capacity Factor (%): Average Net Operating Heat Rate (ANOR):	2.5% 1.5% 96.0% 96.0% 6,800 BTU/kWH (HHV)
(13)	Projected Unit Financial Data Book Life (Years): Total Installed Cost (In-Service Year \$/kW): Estimated Direct Construction Cost (\$/kW) AFUDC Amount (\$/kW): Escalation (\$/kW):	30 N/A 333/kW (Based on ISO Capacity) N/A N/A

Calpine Construction Finance Company, L.P.  
Schedule 10 - Blue Heron Energy Center  
Status Report and Specifications of Proposed Directly Associated Transmission Lines


- (1) Point of Origin and Termination: N/A
- (2) Number of Lines: (Interconnection to adjacent existing 230 kV lines)
- (3) Right-of-Way: The interconnection facilities will be located on the Project site, which abuts Interstate Highway 95 in the public right-of-way associated with I-95 and in the right-of-way for FPL's existing 230 kV lines, the right-of-way for which is adjacent to I-95 on the west side of the highway.
- (4) Line Length: Less than 1000 feet.
- (5) Voltage: 230 kV.
- (6) Anticipated Construction Time: 12 months.
- (7) Anticipated Capital Investment: Approximately \$8 million to \$10 million, depending on specific upgrade options required.
- (8) Substations: New substation to be located at the Blue Heron Project Site; direct interconnect to 230 kV lines.
- (9) Participation with Other Utilities: The interconnection will be made pursuant to FPL's open access transmission tariff.

Figure 1  
**Osprey Energy Center, Auburndale Power Plant, and Auburndale Peaker Energy Center Transmission Facilities Map**





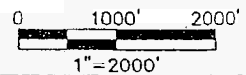
**LEGEND**

PROJECT SITE 



**REFERENCE**

USGS 7.5 Minute Topographical Quadrangle, Auburndale, Florida



**Golder Associates**

Figure 2

Tampa, Florida

**Project Site Location**

Client / Project

Osprey Energy Center & Calpine Auburndale  
Facilities Site Location Map

53

CAD BY: CDT

SCALE: 1"=2000'

Job No. 993-9570

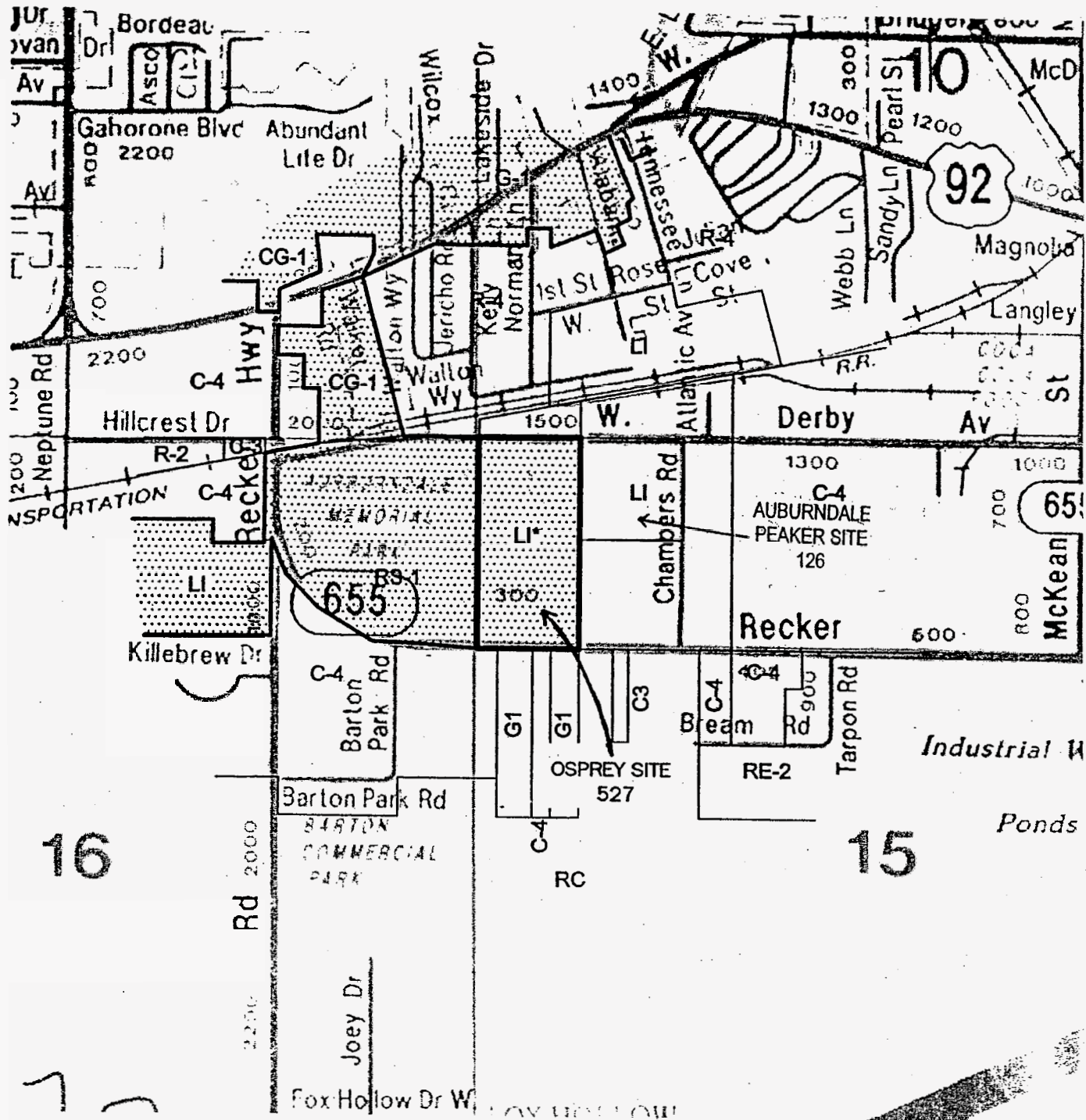
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FIGURE

REV BY: -

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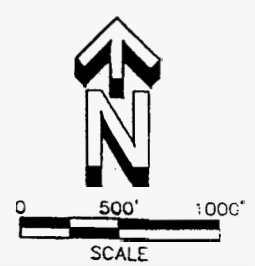
- Auburndale Zoning Districts**
- LI Light Industry
  - RS-1 Single Family Residential
  - GI General Industrial

- Polk County Zoning Districts**
- C-3 Regional Commercial
  - C-4 Heavy Commercial
  - GI General Industrial
  - R-4 Residential
  - RC Rural Conservation
  - RE-2 Rural Estates

**REFERENCE**

City of Auburndale Zoning Map  
 Polk County Zoning Map, Feb., 2000

\* Site has been annexed. Zoning designation is based on Auburndale District



**Golder Associates**

Figure 3

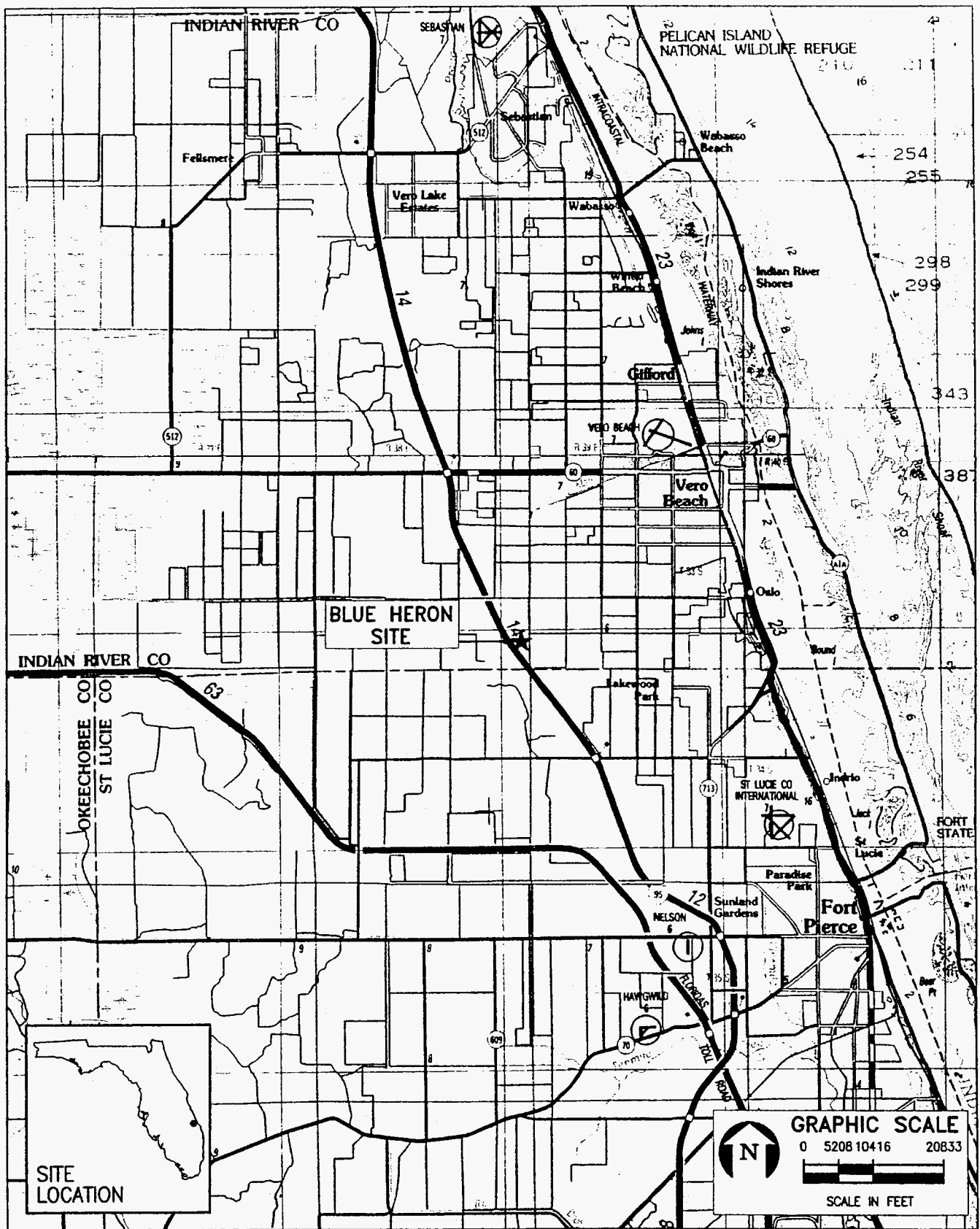
Tampa, Florida

**Osprey Energy Center  
 Site Location and Surroundings**

Client / Project  
**Osprey Energy Center & Calpine Auburndale  
 Facilities Site Location and Surroundings**

CAD BY: CDT	SCALE: 1"=1000'
CHK BY: CA	DATE: 02/08/00
REV BY: -	FILE No.: fig2_2_2-2.dwg

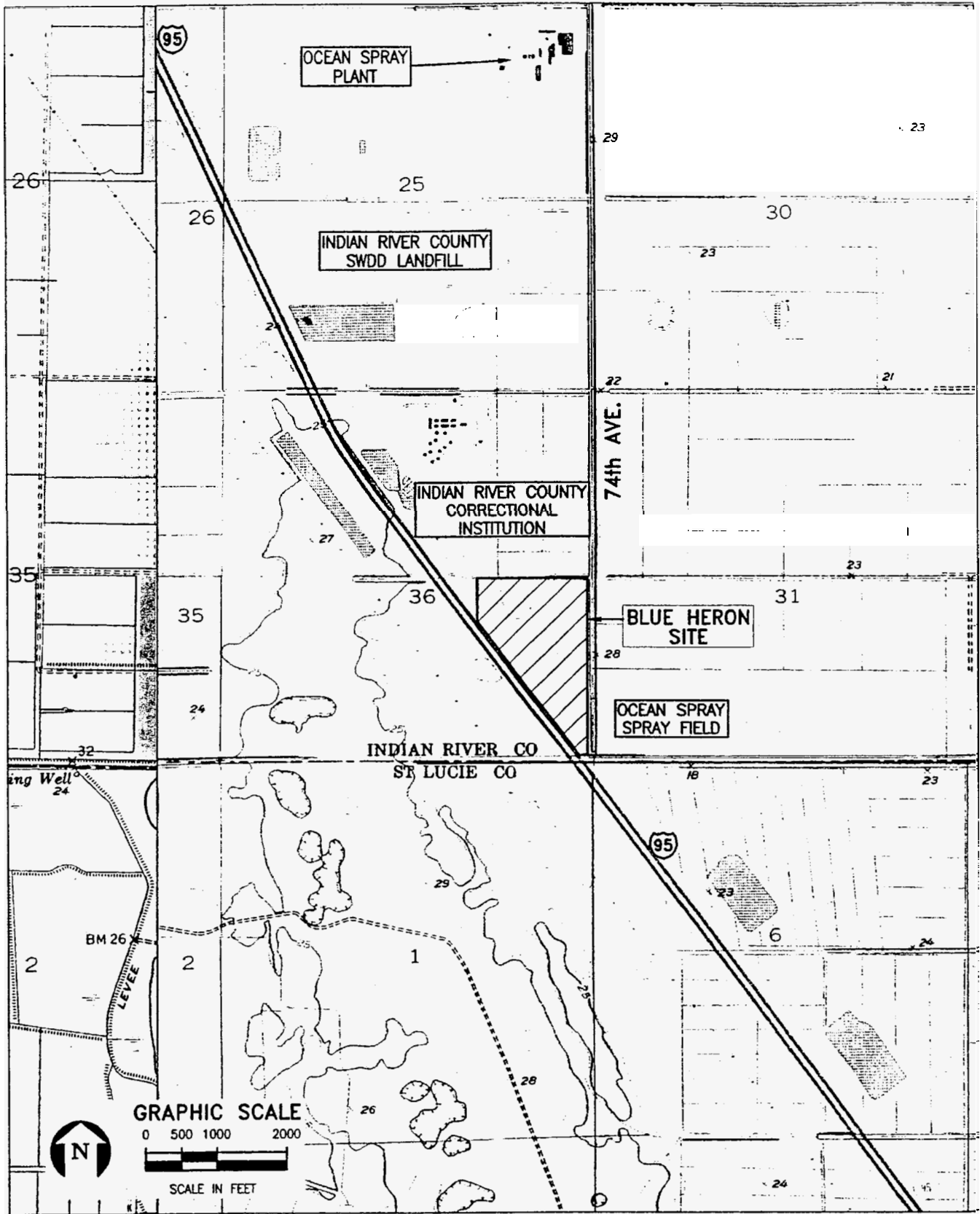
Job No. 993-9570  
 FIGURE



**FIGURE 4.**  
**BLUE HERON ENERGY CENTER SITE LOCATION**

Source: USGS QUAD: FT. PIERCE, FL. 1988; ECT, 2000.

**ECT**  
 Environmental Consulting & Technology, Inc.



**FIGURE 5.**  
**BLUE HERON ENERGY CENTER SITE LOCATION**  
**AND SURROUNDINGS**

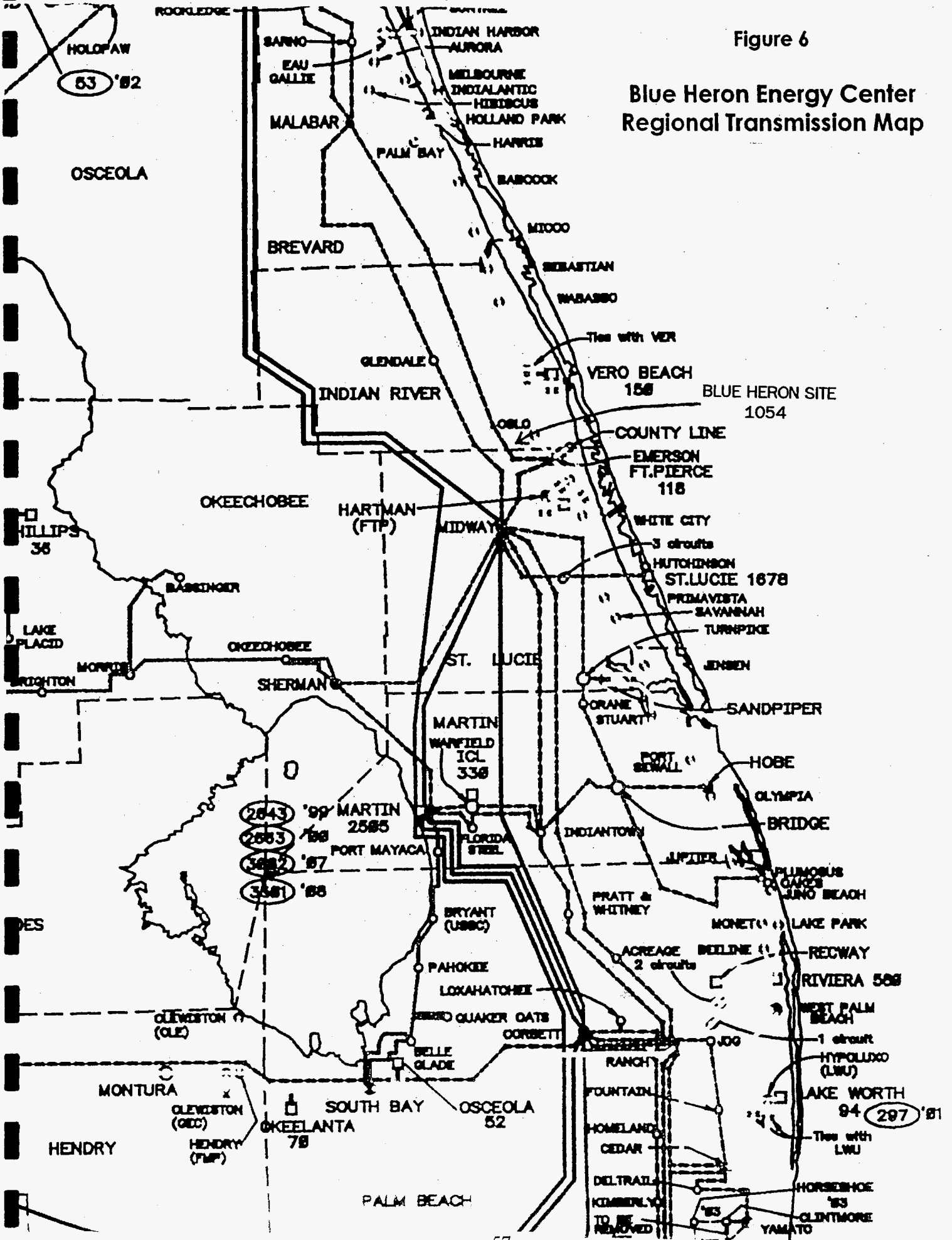
Source: USGS Quad: Oso, FL, & East of Gum Slough, FL, 1983; ECT, 2000.

**ECT**  
 Environmental Consulting & Technology, Inc.



Figure 6

# Blue Heron Energy Center Regional Transmission Map



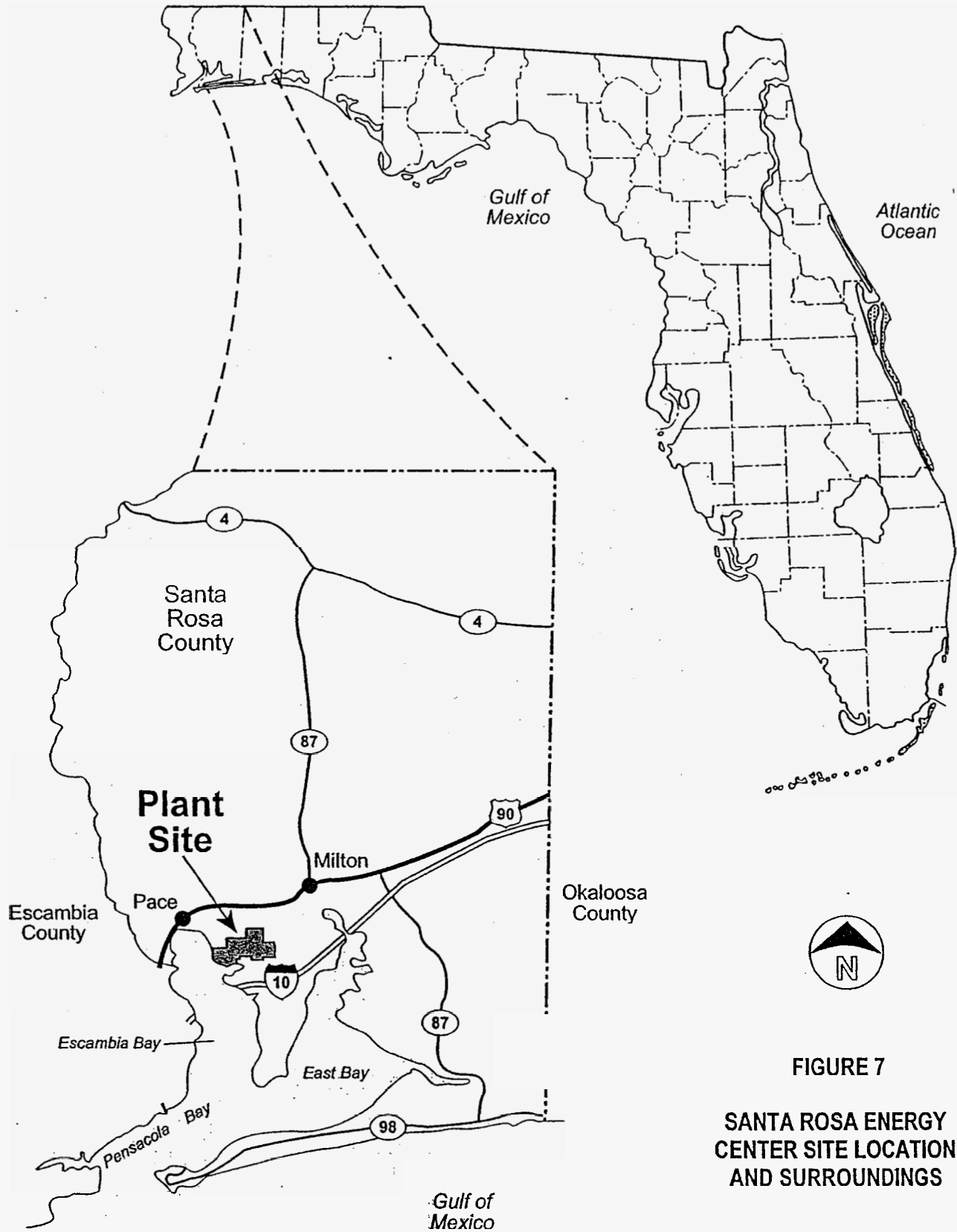
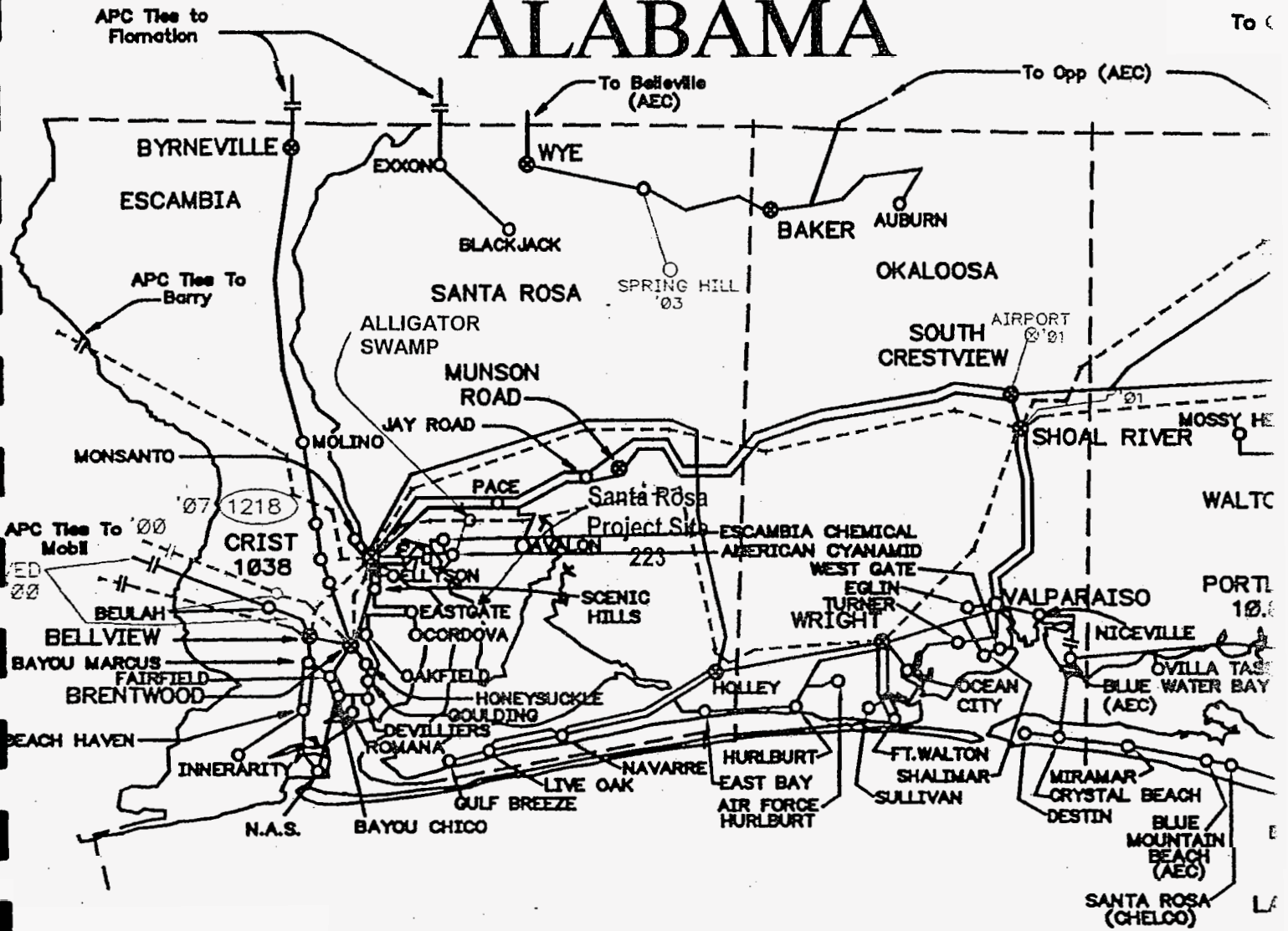


FIGURE 7

**SANTA ROSA ENERGY CENTER SITE LOCATION AND SURROUNDINGS**

# ALABAMA

To C



# GULF OF MEXICO

FIGURE 8

SANTA ROSA ENERGY CENTER  
REGIONAL TRANSMISSION MAP