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SEC 1

OTH KimP. (2)

November 29, 2006

BY HAND DELIVERY

Blanca Bayo, Director  
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and Administrative Services  
Florida Public Service Commission  
2540 Shumard Oak Boulevard  
Tallahassee, Florida 32399-0850

060000-PU

Re: Calpine Corporation's Ten-Year Site Plan, 2006-2015

Dear Ms. Bayo:

Enclosed are <sup>25 Oh</sup> 15 copies of Calpine's 2006-2015 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)222-7206.

Cordially yours,

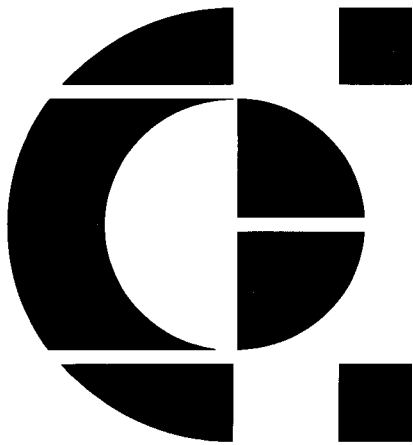
  
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Enclosures

DOCUMENT NUMBER-DATE

10879 NOV 29 06

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CALPINE

*Ten-Year Site Plan  
2006-2015*



CALPINE

*April 2006*

DOCUMENT NUMBER - DATE

10879 NOV 29 06

FPSC-COMMISSION CLERK

# **CALPINE CORPORATION**

## **TEN-YEAR SITE PLAN FOR ELECTRICAL GENERATING FACILITIES AND ASSOCIATED TRANSMISSION LINES, 2006-2015**

**Submitted to:**

**STATE OF FLORIDA  
PUBLIC SERVICE COMMISSION**

**APRIL 2006**

**TABLE OF CONTENTS**

EXECUTIVE SUMMARY . . . . . 1

Chapter 1. Calpine Corporation. . . . . 5

Chapter 2. Description of Existing Facilities . . . . . 6

    I. Osprey Energy Center . . . . . 6

        A. Description of the Osprey Energy Center . . . . . 7

        B. Osprey Energy Center Site and Location . . . . . 7

        C. Transmission Facilities Associated with the Osprey Energy Center . . . . . 8

        D. Osprey Energy Center Gas Supply Arrangements and Facilities . . . . . 8

        E. Osprey Energy Center Water Supply Arrangements and Associated Facilities . . . . . 9

        F. Status of Power Purchase Agreement Between Calpine and Seminole Electric Cooperative, Inc. . . . . 9

    II. Santa Rosa Energy Center . . . . . 10

        A. Description of Santa Rosa Energy Center . . . . . 11

        B. Santa Rosa Energy Center Site and Location . . . . . 11

        C. Transmission Facilities Associated with the Santa Rosa Energy Center . . . . . 11

        D. Santa Rosa Energy Center Gas Supply Arrangements and Facilities . . . . . 12

        E. Santa Rosa Energy Center Water Supply Arrangements and Associated Facilities . . . . . 12

	III. Auburndale Power Plant . . . . .	12
	IV. Auburndale Peaking Energy Center . .	13
Chapter 3.	Forecast of Electric Power Demand and Energy Consumption . . . . .	14
Chapter 4.	Forecasting Methods and Procedures . . . . .	17
Chapter 5.	Forecast of Facilities Requirements . . . . .	18
Chapter 6.	Other Planning Assumptions and Information	19
	Modeling Transmission Constraints . . . . .	19
	Analysis of Overall Project Economics . . . . .	19
	Derivation of Base Case Fuel Price Forecast .	20
	Sensitivity Analyses of Fuel Price Differentials . . . . .	20
	Generating Unit Performance Modeling . . . . .	21
	Financial Assumptions . . . . .	21
	Integrated Resource Planning Process . . . . .	21
	Generation and Transmission Reliability Criteria . . . . .	22
	Durability of Demand Side Management Program Energy Savings . . . . .	22
	Strategic Concerns . . . . .	22
	Procurement Process for Supply-Side Resources	23
	Transmission Construction and Upgrade Plans .	23
Chapter 7.	Environmental and Land Use Information . . . . .	24
	I. Osprey Energy Center . . . . .	24
	A. Site Description . . . . .	24
	B. Land and Environmental Features . .	24

C.	Water Supply . . . . .	25
D.	Air and Noise Emissions . . . . .	25
II.	Auburndale Power Plant and Auburndale Peaking Energy Center . . . . .	25
III.	Santa Rosa Energy Center . . . . .	26
A.	Site Description . . . . .	26
B.	Land and Environmental Features . . . . .	26
C.	Water Supply . . . . .	27
D.	Air and Noise Emissions . . . . .	27

**LIST OF SCHEDULES**

1	Existing Generating Facilities as of December 31, 2005 . . . . .	28
2.1	History and Forecast of Energy Consumption and Number of Customers by Customer Class . . . . .	29
2.2	History and Forecast of Energy Consumption and Number of Customers by Customer Class . . . . .	30
2.3	History and Forecast of Energy Consumption and Number of Customers by Customer Class, Florida, 2006-2015 . . . . .	31
3.1	History and Forecast of Summer Peak Demand in MW, Florida, 2003-2015 . . . . .	32
3.2	History and Forecast of Winter Peak Demand in MW, Florida, 2003-2015 . . . . .	33
3.3	History and Forecast of Annual Net Energy for Load-GWH, Florida, 2003-2015 . . . . .	34
4	Previous Year and 2-Year Forecast of Retail Peak Demand and Net Energy for Load by Month . . . . .	35
5	Fuel Requirements (Units of Fuel)-Florida Projects, 2003-2015 . . . . .	36
6.1	Energy Sources (GWH)-Florida Projects, 2003-2015 . . . . .	37
6.2	Energy Sources (Percent)-Florida Projects, 2003-2015 . . . . .	38
7.1	Forecast of Capacity, Demand, and Scheduled Maintenance at Time of Summer Peak (Florida) . . . . .	39
7.2	Forecast of Capacity, Demand, and Scheduled Maintenance at Time of Winter Peak (Florida) . . . . .	40
8	Planned and Prospective Generating Facility Additions and Changes (Florida) . . . . .	41
9	Status Report and Specifications of Proposed Generating Facilities . . . . .	42
10	Osprey Energy Center - Status Report and Specifications of Transmission Lines . . . . .	43

**LIST OF FIGURES**

Figure 1: Osprey Energy Center, Auburndale Power Plant, and  
Auburndale Peaker Energy Center Transmission  
Facilities Map . . . . . 44

Figure 2: Osprey Energy Center and Calpine Auburndale  
Facilities Site Location Map . . . . . 45

Figure 3: Osprey Energy Center and Calpine Auburndale  
Facilities Site Location and Surroundings . . . . . 46

Figure 4: Santa Rosa Energy Center Site Location  
and Surroundings . . . . . 47

Figure 5: Santa Rosa Energy Center Regional  
Transmission Map . . . . . 48



## EXECUTIVE SUMMARY

Pursuant to Rule 25-22.071, Florida Administrative Code ("F.A.C."), and Section 186.801, Florida Statutes (2006), Calpine Corporation ("Calpine") hereby submits its Ten-Year Site Plan for Electrical Generating Facilities and Associated Transmission Lines, 2006-2015.

Calpine is the owner of the Santa Rosa Energy Center ("Santa Rosa Project"), a 241 megawatt ("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 Osprey Energy Center, a 529 MW (nominal net) natural gas-fired combined cycle generating unit located in the City of Auburndale in Polk County, Florida, and 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. (All four 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 Auburndale Power Plant, and the Auburndale Peaker Project. The Santa Rosa Energy Center is presently in long term

reserve status.

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 is provided to the Auburndale Power Plant via Florida Gas Transmission Company ("FGT") through a capacity release from Peoples Gas. Natural gas is provided to the Auburndale Peaker Project through Gulfstream. 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 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 sells firm capacity and energy to FMPA. 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 anticipates 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. (The Santa Rosa Energy Center is interconnected to Gulf Power Company, which is in the Southeastern Electric Reliability Council ("SERC") region.

Accordingly, Calpine has made and expects to make wholesale sales of electricity from the Santa Rosa Project to Gulf Power or its sister companies in the Southern Company system.) 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.

## CHAPTER 1

### CALPINE CORPORATION

Calpine Corporation, a Delaware corporation, has through its subsidiaries obtained the permitting, engineering, procurement and construction of the operational Calpine Projects. 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 (2006) 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, directly or through its subsidiaries, owns, manages, and operates the Calpine Projects. Calpine owns the Santa Rosa Energy Center and through its subsidiaries owns the Osprey Energy Center and the Auburndale Peaker Project. Additionally, through its subsidiary, 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.)

#### 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 a long-term wholesale power sales contract to Seminole; Calpine also sells the Osprey Energy Center's output to other Florida utilities under shorter-term arrangements. Under the Calpine-Seminole PPA, Seminole has rights 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 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 and other Florida utilities.

**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. Transmission Facilities Associated with the Osprey Energy Center**

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 connects 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.

The Santa Rosa Project is currently in long term reserve status. The Project is scheduled to return to normal service on January 1, 2010, although Calpine is prepared to return the Project to normal service as early as 2007 if needed by Florida utilities. When it returns to normal service, the Santa Rosa Energy Center 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 Gulf Power Company or to other Florida utilities or other operating utilities within the Southern Company system.

**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.

**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 4.) 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. Transmission Facilities Associated with the Santa Rosa Energy Center**

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 5.) An Interconnect Agreement between Calpine and the Southern Company is in place.

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

Natural gas is provided to the Santa Rosa Project through the Gulf South Company pipeline.

**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. If the power contract is not a tolling arrangement, natural gas transportation is purchased from Gulfstream on an as-needed basis.

### CHAPTER 3

#### FORECAST OF ELECTRIC POWER DEMAND AND ENERGY CONSUMPTION

Estimated electric power demand and energy analyses have been completed for the Calpine Projects based on Calpine's long-term contractual obligations and on projected economic dispatch of the Calpine Projects 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, subject to prior sale, pursuant to the Seminole-Calpine PPA.

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, Progress (FPC), FMPPA, and other utilities. (In addition to these utilities, Calpine has also made wholesale power sales from the Calpine Projects to Florida Power & Light Company, 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, 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, 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, and 115 MW at time of the summer peak and 134 MW at the time of the winter peak for the Auburndale Peaker Project. Once the Santa Rosa Energy Center returns to normal service, it is expected to provide 223 MW at the time of the summer peak and 249 MW at the time of the winter peak. (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, input 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, Progress (FPC), FMPA, and other Florida utilities. When the Santa Rosa Project returns to normal service, Calpine expects that, during both summer and winter peak conditions, all of the Santa Rosa Project's capacity will be committed on a firm basis to Gulf Power or its sister companies in the Southern Company system, and possibly to other Peninsular Florida utilities. 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.

Calpine has no additional sites under active development at this time, but is continuously identifying and evaluating potential sites and opportunities. See Schedule 8.

## 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.

#### **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, and the Auburndale Peaker Energy Center throughout the period covered by Calpine's Plan. At present, Calpine expects that the Santa Rosa Energy Center will return to normal service on January 1, 2010; Calpine is prepared to return the Santa Rosa Project to service as early as 2007 if needed to supply power to Florida load-serving utilities. The overall economics of the Osprey Energy Center have been evaluated by estimating how much energy this unit 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 is significantly cost-effective, both operationally and in terms of its 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 Power Plant, Auburndale Peaker 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 Energy Center's operations using a high natural gas price forecast. The results of this sensitivity analysis indicated a slightly lower capacity factor for the Osprey Energy Center 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 the Osprey Energy Center was modeled at an estimated equivalent availability factor of approximately 94.5 percent, 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 the Osprey Energy Center.

#### **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 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 domestically produced natural gas, which is not subject to interruption due to political events;
2. the Osprey 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 and Santa Rosa Projects' high efficiencies are expected to 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 Energy Center, 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.

#### **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 is 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, the existing 120 MW Auburndale Peaker Project, 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. 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 4.) The Santa Rosa Site consists of approximately 11 acres situated south of Pace, Florida. Access to the site is 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. There are no sensitive human receptors, such as hospitals, near 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 4.) 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 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 Corporation  
Schedule 1  
Existing Florida Generating Facilities  
As of December 31, 2005

(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 Pri</u>	<u>Fuel Alt</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>Pri</u>	<u>Alt</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 Corporation  
 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)
<u>Year</u>	<u>GWH</u>	Industrial <u>Average Number of Customers</u>	<u>Average KWH Consumption Per Customer</u>	<u>Railroads and Railways GWH</u>	<u>Street &amp; Highway Lighting GWH</u>	<u>Other Sales to Public Authorities GWH</u>	<u>Total Sales to Ultimate Consumers GWH</u>

Not Applicable

Calpine Corporation  
Schedule 2.3  
History and Forecast of Energy Consumption and  
Number of Customers by Customer Class, Florida, 2003 - 2015

(1)	(2)	(3)	(4)	(5)	(6)
<u>Year</u>	<u>Sales For Resale GWH</u>	<u>Utility Use &amp; Losses GWH</u>	<u>Net Energy For Load GWH</u>	<u>Estimated Wholesale Customers (Average No.)</u>	<u>Total Estimated Number Of Customers</u>
2003	1,129	0	1,129	7	7
2004	2,967	0	2,967	11	11
2005	4,125	0	4,125	12	12
2006	4,095	0	4,095	12	12
2007	4,095	0	4,095	12	12
2008	4,095	0	4,095	12	12
2009	4,095	0	4,095	12	12
2010	4,335	0	4,335	12	12
2011	4,335	0	4,335	12	12
2012	4,335	0	4,335	12	12
2013	4,335	0	4,335	12	12
2014	4,335	0	4,335	12	12
2015	4,335	0	4,335	12	12

Calpine Corporation  
Schedule 3.1  
History and Forecast of Summer Peak Demand in MW,  
Florida, 2003-2015

(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>
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	761	761	0	N/A	N/A	N/A	N/A	N/A	761
2007	761	761	0	N/A	N/A	N/A	N/A	N/A	761
2008	761	761	0	N/A	N/A	N/A	N/A	N/A	761
2009	761	761	0	N/A	N/A	N/A	N/A	N/A	761
2010	984	984	0	N/A	N/A	N/A	N/A	N/A	984
2011	984	984	0	N/A	N/A	N/A	N/A	N/A	984
2012	984	984	0	N/A	N/A	N/A	N/A	N/A	984
2013	984	984	0	N/A	N/A	N/A	N/A	N/A	984
2014	984	984	0	N/A	N/A	N/A	N/A	N/A	984
2015	984	984	0	N/A	N/A	N/A	N/A	N/A	984



Calpine Corporation  
Schedule 3.2  
History and Forecast of Winter Peak Demand in MW  
Florida, 2003-2015

(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>
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	862	862	0	N/A	N/A	N/A	N/A	N/A	862
2007/08	862	862	0	N/A	N/A	N/A	N/A	N/A	862
2008/09	862	862	0	N/A	N/A	N/A	N/A	N/A	862
2009/10	1,111	1,111	0	N/A	N/A	N/A	N/A	N/A	1,111
2010/11	1,111	1,111	0	N/A	N/A	N/A	N/A	N/A	1,111
2011/12	1,111	1,111	0	N/A	N/A	N/A	N/A	N/A	1,111
2012/13	1,111	1,111	0	N/A	N/A	N/A	N/A	N/A	1,111
2013/14	1,111	1,111	0	N/A	N/A	N/A	N/A	N/A	1,111
2014/15	1,111	1,111	0	N/A	N/A	N/A	N/A	N/A	1,111
2015/16	1,111	1,111	0	N/A	N/A	N/A	N/A	N/A	1,111

Calpine Corporation  
Schedule 3.3  
History and Forecast of Annual Net Energy for Load - GWH  
Florida, 2003-2015

(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>
2003	1,129	N/A	N/A	0	1,129		1,129	24.2
2004	2,967	N/A	N/A	0	2,967		2,967	30.4
2005	4,125	N/A	N/A	0	4,125		4,125	42.4
2006	4,095	N/A	N/A	0	4,095		4,095	54.2
2007	4,095	N/A	N/A	0	4,095		4,095	54.2
2008	4,095	N/A	N/A	0	4,095		4,095	54.2
2009	4,095	N/A	N/A	0	4,095		4,095	54.2
2010	4,335	N/A	N/A	0	4,335		4,335	44.5
2011	4,335	N/A	N/A	0	4,335		4,335	44.5
2012	4,335	N/A	N/A	0	4,335		4,335	44.5
2013	4,335	N/A	N/A	0	4,335		4,335	44.5
2014	4,335	N/A	N/A	0	4,335		4,335	44.5
2015	4,335	N/A	N/A	0	4,335		4,335	44.5

34

**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.

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

Calpine Corporation  
 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)
Month	<u>Actual</u>		<u>Forecast</u>		<u>Forecast</u>	
<u>Month</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 Corporation  
Schedule 5  
Fuel Requirements (Units of Fuel)-Florida Projects, 2003-2015

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
	Fuel Requirements	Units		<u>Actual</u> 2003	<u>Est.</u> 2004	<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>	<u>2014</u>	<u>2015</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	11.76	14.10	14.46	14.46	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	11.53	13.01	13.01	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	1.46	1.46
(12)		Diesel	1000 BBL													
(13)	Natural Gas	Total	1000 MCF	8,512	22,812	30,943	29,095	29,095	29,095	29,095	30,943	30,943	30,943	30,943	30,943	0
(14)		Steam	1000 MCF													
(15)		CC	1000 MCF	8,350	22,042	29,916	28,068	28,068	28,068	28,068	29,916	29,916	29,916	29,916	29,916	0
(16)		CT	1000 MCF	162	770	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	0
(17)	Other (Specify)		Trillion BTU													

Calpine Corporation

Schedule 6.1

Energy Sources (by GWH)-Florida Projects, 2003-2015

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
	<u>Energy Sources</u>	<u>Units</u>	<u>Actual</u> <u>2003</u>	<u>Est.</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>	<u>2014</u>	<u>2015</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	10	10	10	10	10	10	10	10	10	10	10	10	10
(9)		Steam	GWH													
(10)		CC	GWH	9	9	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	1	1
(12)		Diesel	GWH													
(13)	Natural Gas	Total	GWH	1,119	2,957	4,115	4,085	4,085	4,085	4,085	4,325	4,325	4,325	4,325	4,325	4,325
(14)		Steam	GWH													
(15)		CC	GWH	1,033	2,843	4,001	3,971	3,971	3,971	3,971	4,211	4,211	4,211	4,211	4,211	4,211
(16)		CT	GWH	86	114	114	114	114	114	114	114	114	114	114	114	114
(17)	Other (Specify)	GWH														
(18)	Net Energy for Load	GWH		1,129	2,967	4,125	4,095	4,095	4,095	4,095	4,335	4,335	4,335	4,335	4,335	4,335

Calpine Corporation  
Schedule 6.2  
Energy Sources (Percent)-Florida Projects, 2003-2015

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
	<u>Energy Sources</u>	<u>Units</u>	<u>Actual</u>	<u>Actual</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>	<u>2014</u>	<u>2015</u>	
(1)	Annual Firm Interchange	%														
(2)	Nuclear	%														
(3)	Residual	Total	%													
(4)		Steam	%													
(5)		CC	%													
(6)		CT	%													
(7)		Diesel	%													
(8)	Distillate	Total	%	0.9	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
(9)		Steam	%													
(10)		CC	%	0.9	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
(11)		CT	%		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(12)		Diesel	%													
(13)	Natural Gas	Total	%	99.1	99.7	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8
(14)		Steam	%													
(15)		CC	%	91.5	95.8	97.0	97.0	97.0	97.0	97.0	97.1	97.1	97.1	97.1	97.1	97.1
(16)		CT	%	7.6	3.8	2.8	2.8	2.8	2.8	2.8	2.6	2.6	2.6	2.6	2.6	2.6
(17)	Other (Specify)		%													
(18)	Net Energy for Load		%	100	100	100	100	100	100	100	100	100	100	100	100	100

Calpine Corporation  
 Schedule 7.1  
 Forecast of Capacity, Demand, and Scheduled Maintenance at Time of Summer Peak,  
 2006-2015

(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 before Maintenance MW	Reserve Margin before Maintenance % of Peak	Scheduled Maintenance MW	Reserve Margin after Maintenance MW	Reserve Margin % of Peak
2006	761	0	0	0	761	761	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2007	761	0	0	0	761	761	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2008	761	0	0	0	761	761	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2009	761	0	0	0	761	761	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2010	984	0	0	0	984	984	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2011	984	0	0	0	984	984	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2012	984	0	0	0	984	984	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2013	984	0	0	0	984	984	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2014	984	0	0	0	984	984	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2015	984	0	0	0	984	984	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 Corporation  
Schedule 7.2  
Forecast of Capacity, Demand, and Scheduled Maintenance at Time of Winter Peak  
2006-2015

(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 % of Peak		Scheduled Maintenance MW	Reserve Margin after Maintenance MW % of Peak	
2006/07	862	0	0	0	862	862	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2007/08	862	0	0	0	862	862	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2008/09	862	0	0	0	862	862	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2009/10	1,111	0	0	0	1,111	1,111	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2010/11	1,111	0	0	0	1,111	1,111	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2011/12	1,111	0	0	0	1,111	1,111	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2012/13	1,111	0	0	0	1,111	1,111	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2013/14	1,111	0	0	0	1,111	1,111	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2014/15	1,111	0	0	0	1,111	1,111	N/A (1)	N/A (1)	0	N/A (1)	N/A (1)
2015/16	1,111	0	0	0	1,111	1,111	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 Corporation  
 Schedule 8  
 Planned and Prospective Generating Facility Additions and Changes  
 (Florida)

(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

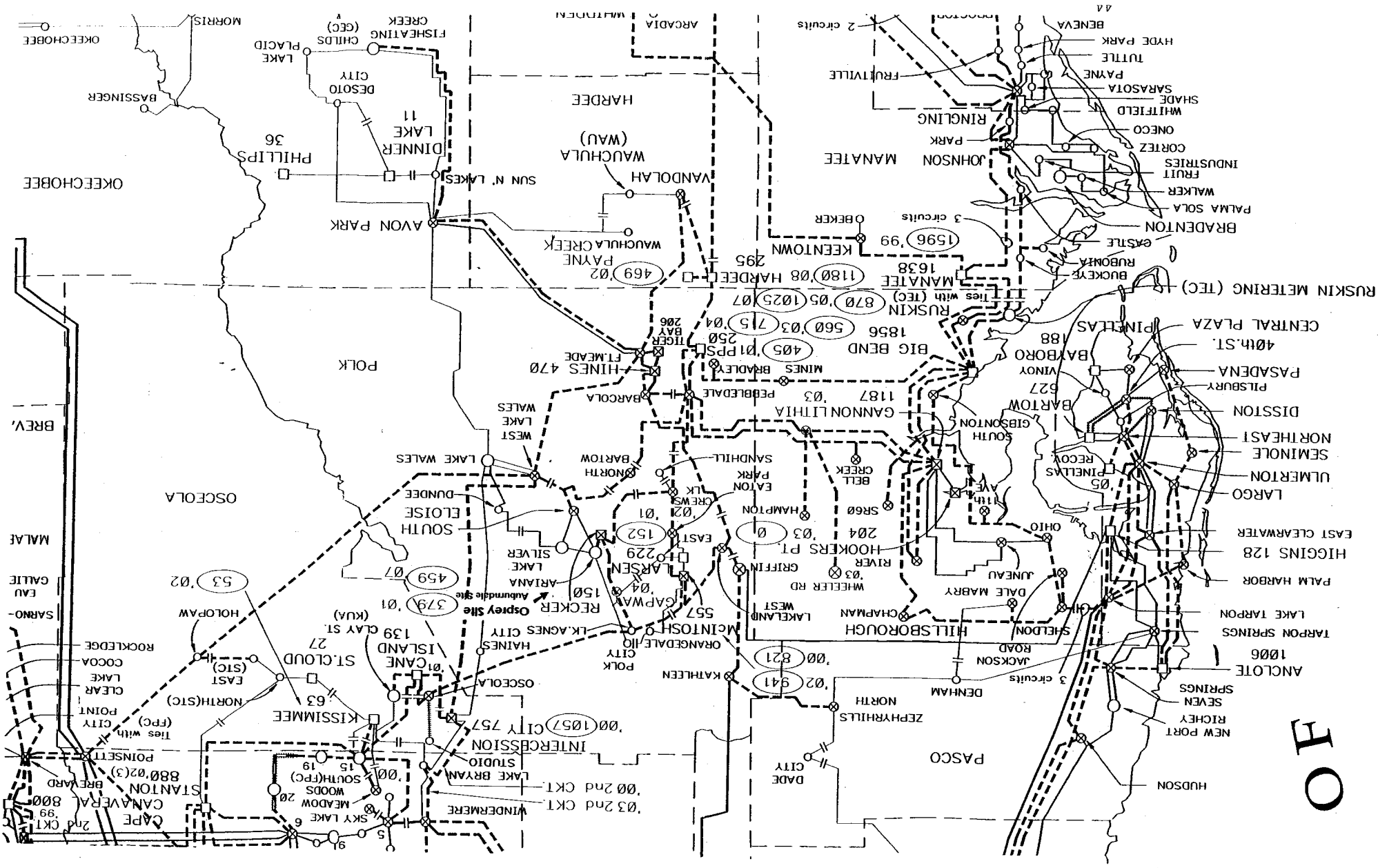
None as of December 2005



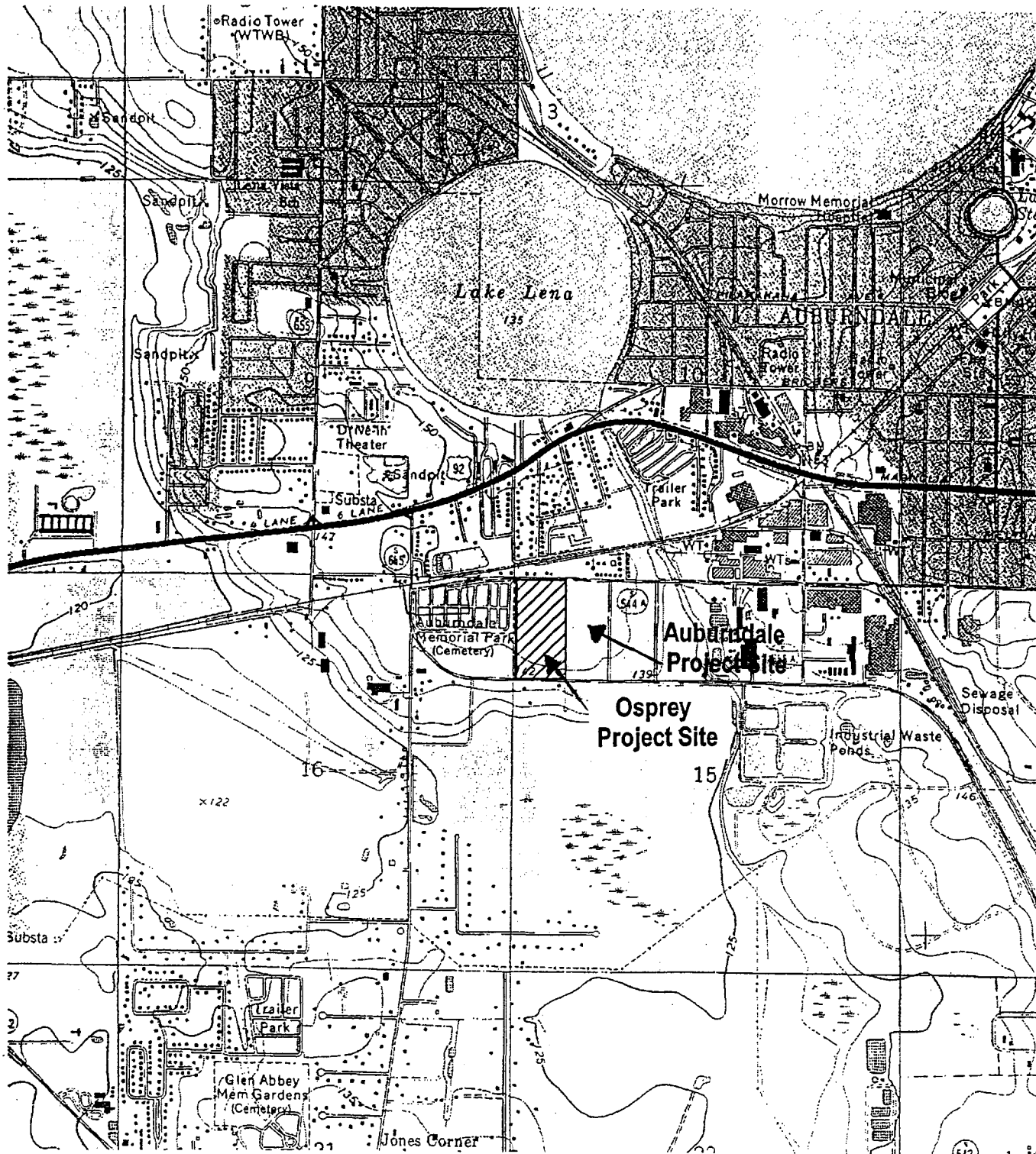
Calpine Corporation  
Schedule 10 - Osprey Energy Center  
Status Report and Specifications of  
Transmission Lines

- (1) Point of Origin and Termination: N/A
- (2) Number of Lines: (Loop existing 230 kV line)
- (3) Right-of-Way: None required, all interconnection facilities are located at the Project site.
- (4) Line Length: Approximately 1000 feet.
- (5) Voltage: 230 kV.
- (6) Anticipated Construction Time: Not Applicable-Line Is Complete.
- (7) Anticipated Capital Investment: Line Is Complete.
- (8) Substations: Line Is Complete.  
Recker to Ariana, and increased transformer capacity at the Ariana 230/69 kV station  
may be necessary, and advancing by one year the upgrade to the Recker to Lake Agnes in 2003.
- (9) Participation with Other Utilities: Participation with Tampa Electric to advance the upgrade of Lake Agnes.

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



OF

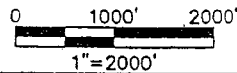


**LEGEND**

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**

45

CAD BY: CDT

SCALE: 1"=2000'

Job No.

993-9570

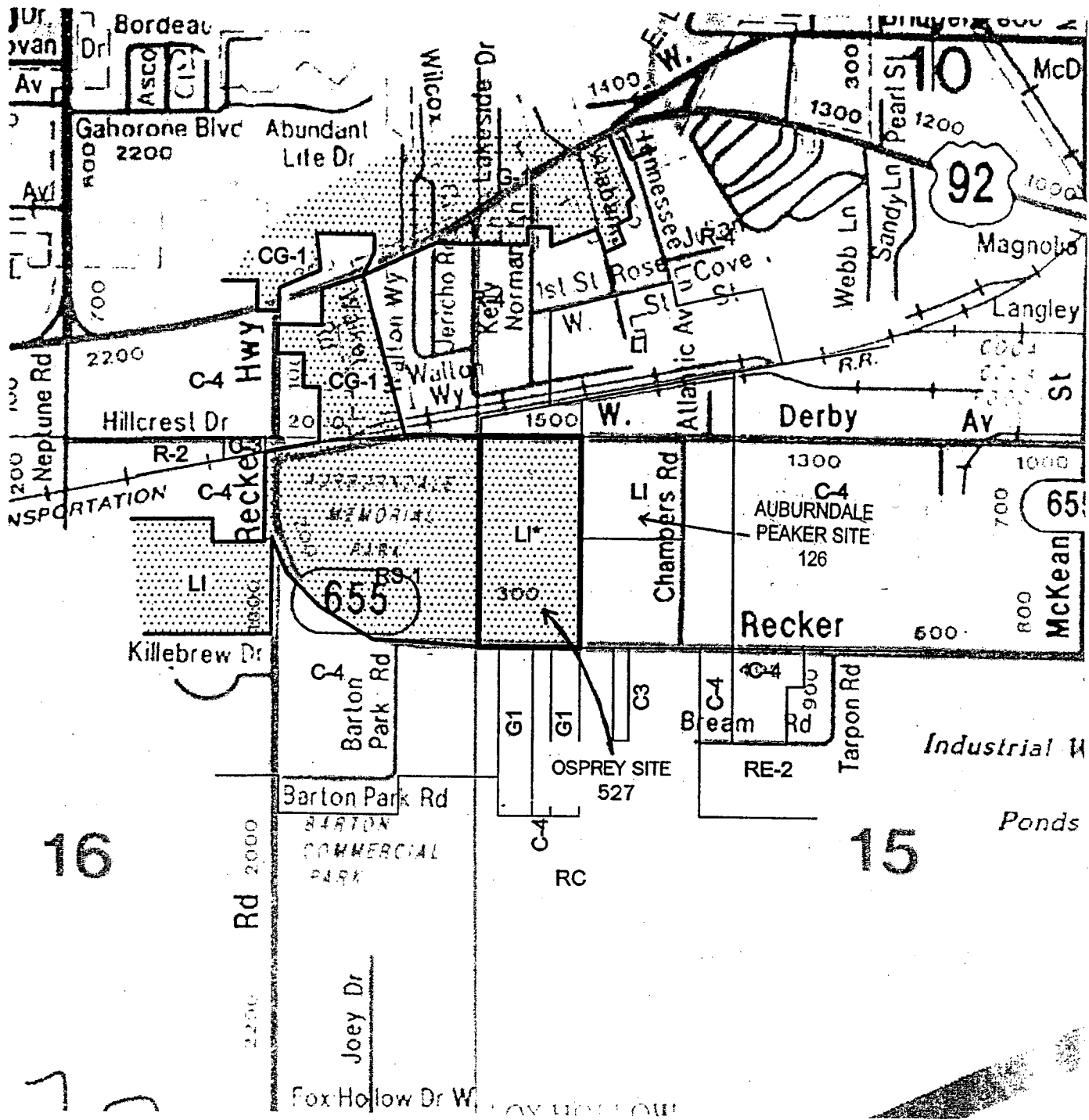
CHK BY: RAZ

DATE: 02/04/00

FIGURE

REV BY: -

FILE No.: fin1 3 2-2.dwg



- 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

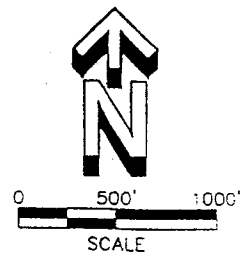


Figure 3

Tampa, Florida

**Osprey Energy Center  
 Site Location and Surroundings**

Client / Project

Osprey Energy Center & Calpine Auburndale  
 Facilities Site Location and Surroundings

46

CAD BY: CDT	SCALE: 1"=1000'	Job No. 993-9570
CHK BY: CA	DATE: 02/08/00	FIGURE
REV BY: -	FILE No.: fig2_2_2-2.dwg	

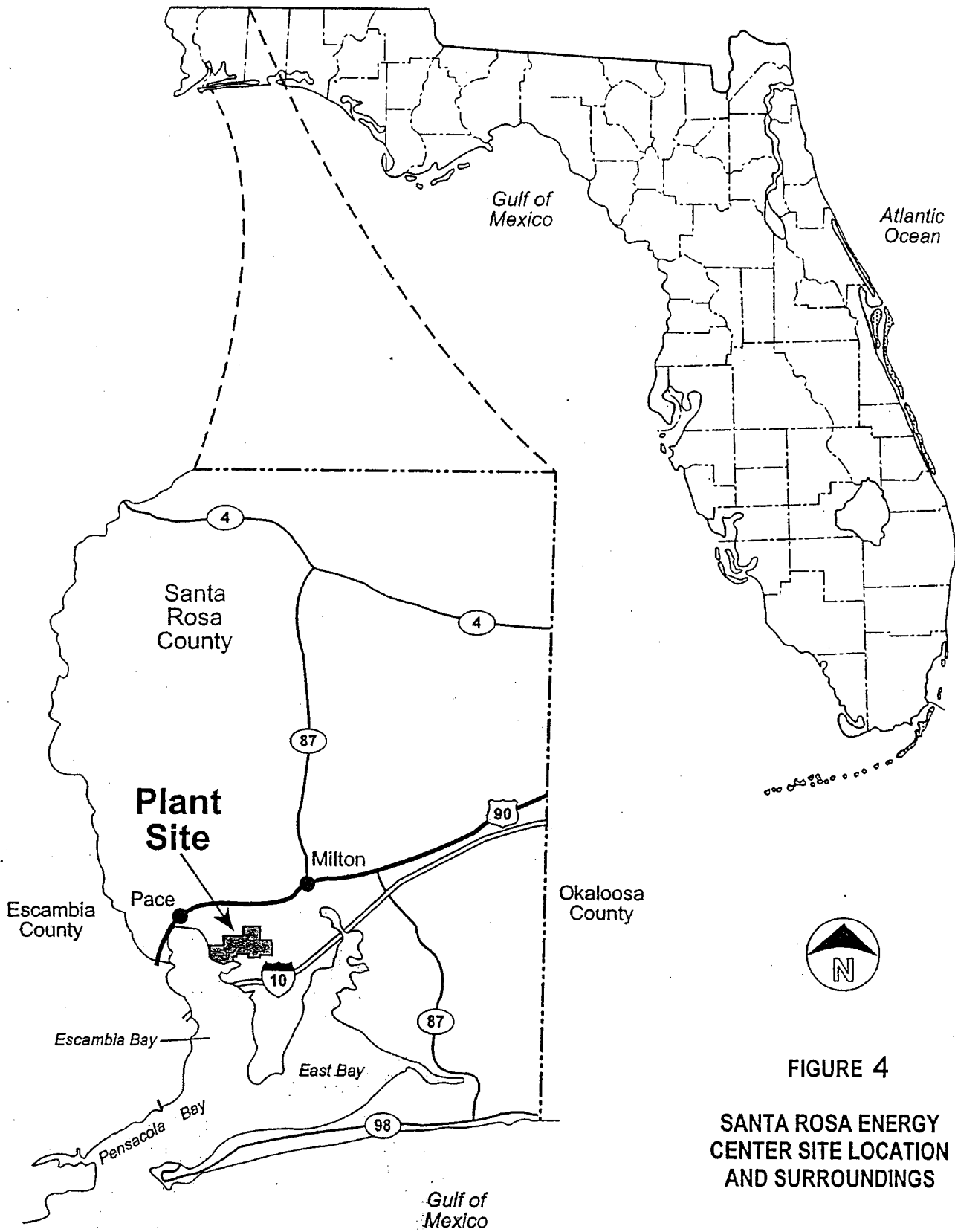
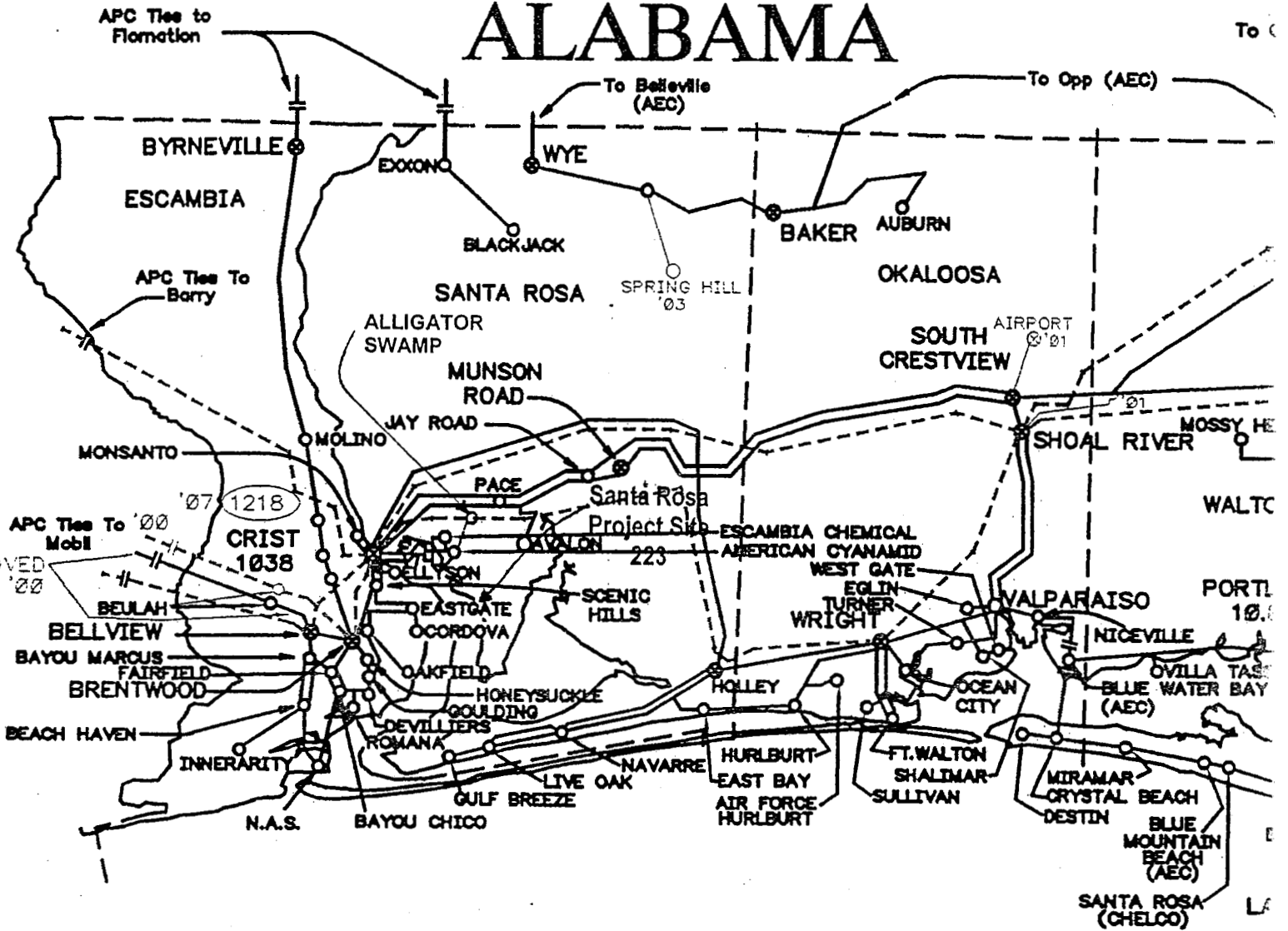


FIGURE 4

SANTA ROSA ENERGY CENTER SITE LOCATION AND SURROUNDINGS

Regional Location Map  
Santa Rosa Plant, Pace, Florida

# ALABAMA



# GULF OF MEXICO

FIGURE 5

SANTA ROSA ENERGY CENTER  
REGIONAL TRANSMISSION MAP