

LANDERS & PARSONS, P.A.
ATTORNEYS AT LAW

ORIGINAL

DAVID S. DEE
DIANE K. KIESLING
JOSEPH W. LANDERS, JR.
JOHN T. LAVIA, III
FRED A. McCORMACK
PHILIP S. PARSONS
LESLIE J. PAUGH
ROBERT SCHEFFEL WRIGHT

VICTORIA J. TSCHINKEL
SENIOR CONSULTANT
NOT A MEMBER OF THE FLORIDA BAR

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

310 WEST COLLEGE AVENUE
TALLAHASSEE, FL 32301

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

August 21, 2000

BY HAND DELIVERY

RECEIVED-FPSC
AUG 21 PM 3:55
RECORDS AND REPORTING

Blanca S. Bayo, Director
Division of Records and Reporting
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: Petition for Determination of Need for the Osprey Energy
Center, FPSC Docket No. 000442-EI

Dear Ms. Bayo:

Enclosed for filing on behalf of Calpine Construction Finance
Company, L.P., are an original and fifteen copies of each of the
following witnesses' testimony and exhibits:

Timothy R. Eves - 10248-00

Kenneth J. Slater - 10249-00

I will appreciate your confirming receipt of these materials
by stamping the attached filing copy thereof and returning same to
my attention. As always, thanks to you and your Staff for your
considerate and professional assistance. If you have any
questions, please give me a call.

Cordially yours,

Robert Scheffel Wright
Robert Scheffel Wright

- APP _____
- CAF _____
- CMP _____
- COM 3 _____
- CTR _____
- ECR _____
- LEG 2 _____
- OFC _____
- PAI _____
- RSC _____
- SEC _____
- OTK _____

RECEIVED & FILED

FPSC-BUREAU OF RECORDS

10248-00

ORIGINAL

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In Re: Petition for Determination of)
Need for an Electrical Power Plant in) **DOCKET NO. 000442-EI**
Polk County by Calpine Construction)
Finance Company, L.P.)

DIRECT TESTIMONY AND EXHIBITS

OF

TIMOTHY R. EVES

ON BEHALF OF

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

DOCUMENT NUMBER-DATE

10248 AUG 21 88

FPSC-RECORDS/REPORTING

IN RE: PETITION FOR DETERMINATION OF NEED
FOR AN ELECTRICAL POWER PLANT IN POLK COUNTY
BY CALPINE CONSTRUCTION FINANCE COMPANY, L.P.
FPSC DOCKET NO. 000442-EI

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 Q: Please state your name and business address.

2 A: My name is Timothy R. Eves, and my business address is Two
3 Urban Centre, 4890 West Kennedy Boulevard, Suite 600, Tampa,
4 Florida 33609.

5

6 Q: By whom are you employed and in what position?

7 A: I am employed by Calpine Eastern Corporation ("Calpine
8 Eastern"), as Director of Business Development for Florida.

9

10 Q: Please describe your duties with Calpine Eastern.

11 A: In my capacity as Director of Business Development for Florida,
12 I am responsible for managing all of Calpine Eastern's
13 development activities in Florida, including, among other
14 things, coordinating regulatory matters and permitting
15 activities for Calpine Eastern's Florida projects; coordinating
16 and overseeing Calpine Eastern's marketing activities for the
17 Osprey Energy Center (the "Osprey Project" or the "Project")
18 and the Blue Heron Energy Center; and managing all aspects of
19 the development of the Osprey Project.

DIRECT TESTIMONY OF TIMOTHY R. EVES

QUALIFICATIONS AND EXPERIENCE

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

Q: Please summarize your educational background.

A: I received a Bachelor of Mechanical Engineering degree from the University of Detroit in 1979, a Master of Business Administration degree from Widener University in 1983, and a Juris Doctor degree from the University of Miami in 1988.

Q: Please summarize your employment history and work experience.

A: I have 21 years of experience in the electric power industry, 19 years of which I worked for Westinghouse Electric Corporation, and the remaining 2 years with BBI Power Corporation and Calpine Eastern. I began my career in 1979 as an Assistant Sales Engineer with Westinghouse Electric Corporation where I sold electrical equipment to architect/engineering firms for application on utility projects. From there I held marketing positions of increasing responsibility before being appointed Westinghouse's Manager of Customer Program Integration in July 1989. In this position, I managed a marketing group responsible for the coordination and sale of integrated generating plant services and modernization services to electric utilities. In December 1991, I was appointed the Regional Marketing Manager responsible for the sale of new unit power generation equipment and engineering, procurement, and construction services to

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 developers, utilities and architect/engineers in diverse
2 markets across the United States and Latin America. I was
3 appointed Director of International Marketing in January 1996,
4 in which position I was responsible for managing the department
5 responsible for selling new power generation equipment and
6 engineering, procurement, and construction services to power
7 plant developers, utilities, industrial users, and
8 architect/engineers for projects located in Eastern Europe, the
9 Middle East, and the Indian subcontinent. For most of my
10 career with Westinghouse, from 1982 to 1996, I worked in
11 Florida, where I had regular contact with various Florida
12 utilities.

13 In June 1998, I began my employment with BBI Power
14 Corporation as Senior Vice President with responsibilities for
15 worldwide project development activities. My responsibilities
16 included: joint partner identification and negotiation of joint
17 development agreements, determination of plant configuration,
18 and financial analyses. I also negotiated purchased power and
19 steam supply contracts, engineering-procurement-construction
20 contracts, and conducted permitting and financing activities
21 for various projects. My project development activities
22 covered the Indian subcontinent, Eastern Europe, the Middle
23 East, the Caribbean, and the United States with respect to
24 developing natural gas and oil-fired combustion turbine units,
25 coal-fired steam units, and biomass plants.

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 In October 1999, I accepted my current position with
2 Calpine Eastern Corporation as Director of Business
3 Development. In this position, I am responsible for all of
4 Calpine Eastern's development activities in Florida, including
5 participating directly in our marketing activities for the
6 output of the Osprey Energy Center and Blue Heron Energy
7 Center, and coordinating regulatory matters and permitting
8 activities for Calpine Eastern's Florida projects.

9
10 **Q: What are your responsibilities with respect to the Osprey**
11 **Energy Center?**

12 **A: As Director of Business Development for Florida, my**
13 **responsibilities with respect to the Osprey Project include**
14 **coordinating the regulatory and business activities relating to**
15 **the permitting and construction of the Project, as well as**
16 **coordinating the marketing efforts for capacity and energy**
17 **sales from the Project.**

18
19 **Q: Do you hold any professional certifications or memberships in**
20 **any professional organizations?**

21 **A: I am a member of the Florida Bar.**

DIRECT TESTIMONY OF TIMOTHY R. EVES

SUMMARY AND PURPOSE OF TESTIMONY

1

2 Q: What is the purpose of your testimony?

3 A: I am testifying on behalf of Calpine Construction Finance
4 Company, L.P. ("Calpine"), the developer of the Osprey Project
5 and the primary applicant for the Florida Public Service
6 Commission's (the "Commission") determination of need for the
7 Osprey Energy Center. My testimony describes Calpine and the
8 relationship between Calpine, Calpine Eastern, and their
9 parent, Calpine Corporation, Inc., a Delaware corporation
10 headquartered in San Jose, California. My testimony also
11 addresses the Osprey Project, Calpine's basic business purposes
12 in developing the Project, the need for the Project, Calpine's
13 anticipated contracts for and sales of the Osprey Project's
14 output, the cost-effectiveness of the Project to Calpine and to
15 our anticipated purchasers, the economic viability of the
16 Project, generating and non-generating alternatives to the
17 Project, and the action that Calpine is asking the Commission
18 to take in this proceeding.

19

20 Q: Please summarize your testimony.

21 A: Calpine Construction Finance Company, L.P., is petitioning the
22 Commission for an affirmative determination of need for the
23 Osprey Energy Center, a 529 MW natural gas-fired, combined
24 cycle power plant to be located in the City of Auburndale, in

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 Polk County, Florida.

2 The Osprey Project utilizes state-of-the-art technology,
3 with proven reliability, high efficiency, and a very benign
4 environmental profile. The Project will provide a clean and
5 cost-effective power supply option to Florida retail-serving
6 electric utilities to meet the growing demands of their retail
7 customers in Florida. In contrast to rate-based facilities,
8 Calpine will bear all of the capital investment and operating
9 risks associated with the Project, while the purchasing
10 utilities and their ratepayers bear none. At most, purchasing
11 utilities will bear only the risks that those purchasing
12 utilities voluntarily choose to accept in entering into
13 economically beneficial power sales agreements for the purchase
14 of the Osprey Project's output.

15 Calpine is developing the Osprey Project as a wholesale
16 "contract" plant within the scope of the Florida Supreme
17 Court's ruling on the Commission's need determination order for
18 the proposed Duke Energy-New Smyrna Beach power plant. Thus,
19 the Osprey Project's output will be sold pursuant to contracts
20 with Florida utilities that have responsibility for serving
21 retail customers in Florida.

22 The Project is the most cost-effective alternative for
23 Florida's wholesale power market and, because of its very high
24 efficiency, the Project is expected to be economically viable
25 for its entire useful life. Purchases of the Project's output

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 will be cost-effective to the utilities that elect to enter
2 into purchase arrangements with Calpine. Calpine is actively
3 pursuing contracts with a number of Florida utilities and will
4 furnish appropriate evidence that the Osprey Project's output
5 is committed to utilities that serve Florida retail customers
6 as soon as practicable. In the event that Calpine does not
7 furnish such evidence by the time of the currently scheduled
8 hearings in this case, Calpine is asking the Commission to
9 grant the requested determination of need subject to a
10 specified condition subsequent. That condition, which would be
11 imposed both on the need determination and on the site
12 certification for the Project, is that before construction can
13 commence, Calpine must demonstrate to the Commission that it
14 has appropriate contractual arrangements confirming that the
15 Project's output will be provided to Florida retail-serving
16 utilities for the benefit of their retail customers.

17

18 **Q: Are you sponsoring any exhibits to your testimony?**

19 **A: Yes. I am sponsoring the following exhibits.**

20 TRE-1. Calpine Construction Finance Company, L.P.,
21 Ownership Structure.

22 TRE-2. Calpine Corporation Generation Portfolio.

23 TRE-3. Order of the Federal Energy Regulatory Commission
24 ("FERC") approving Calpine's market-based rate

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 tariff.

2 TRE-4. Peninsular Florida Utilities' Identified But
3 Uncommitted Capacity Needs, 2003-2009.

4 TRE-5. Osprey Energy Center, Generating Alternatives
5 Evaluated.

6 TRE-6. Osprey Energy Center, Cost-Effectiveness Analyses of
7 Alternative Generation Technologies.

8 I am also sponsoring Figures 1 and 2, Tables 1, 13, 20,
9 21, and parts of Table 2 (relating to the cost, economic life,
10 and status of the Project) in the Exhibits filed on June 19,
11 2000 in support of Calpine's petition for determination of need
12 for the Project. I am also sponsoring the text relating to the
13 subject matter of these figures and tables contained within the
14 Executive Summary, Introduction, and Sections II.A, II.C, II.D,
15 II.E, II.F, and III.F of those Exhibits. I am also sponsoring
16 Appendix A to the Exhibits.

17

18 CALPINE CONSTRUCTION FINANCE COMPANY, L.P.
19 CALPINE EASTERN CORPORATION, AND CALPINE CORPORATION, INC.
20

21 Q: Please describe Calpine Construction Finance Company, L.P., and
22 its business.

23 A: Calpine is a limited partnership organized and existing under
24 the laws of the State of Delaware. Calpine is a wholly-owned
25 subsidiary of Calpine Corporation, Inc. ("Calpine
26 Corporation"), a Delaware corporation headquartered in San

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 Jose, California. Exhibit _____ (TRE-1) illustrates the
2 ownership structure relationships of Calpine, Calpine Eastern,
3 and Calpine Corporation.

4 Calpine is in the business of developing competitive
5 wholesale power plants and acquiring electrical generating
6 facilities for operation as competitive wholesale power plants.
7 Competitive wholesale power plants are operated to sell power
8 to other utilities at wholesale at voluntarily negotiated
9 rates, with Calpine taking all financial and operating risk
10 associated with the plants. Based on my experience, these
11 wholesale plants, whether they are "contract" plants like the
12 Osprey Project or "merchant" plants, are not subject to
13 traditional regulatory treatment whereby a regulated utility is
14 assured the opportunity to recover prudently incurred costs, as
15 well as the opportunity to earn a specified rate of return
16 (currently ranging from 10.0 percent to 13.0 percent in
17 Florida) on its equity investment. Neither retail electric
18 customers nor utilities are obligated to purchase the output of
19 a competitive wholesale plant, nor to pay for the capital costs
20 of such a plant if it should become uneconomic in the market.

21 Calpine's basic business strategy is to provide clean,
22 efficient, cost-effective wholesale power to other utilities.

23

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 Q: Please describe Calpine Corporation and its business.

2 A: Calpine Corporation is a leading independent power company
3 engaged in the development, acquisition, ownership, and
4 operation of power generation facilities and the sale of
5 electricity predominantly in the United States. Calpine
6 Corporation has experienced significant growth in all aspects
7 of our business over the last five years.

8 Calpine Corporation is financially strong and sound, with
9 market capitalization exceeding \$10 billion and an investment
10 grade bond rating.

11 Calpine Corporation's development of power generation
12 projects involves numerous elements, including evaluating and
13 selecting development opportunities, designing and engineering
14 the projects, negotiating power sales agreements, acquiring
15 necessary land rights, permits and fuel resources, obtaining
16 financing, and managing construction.

17 In May 1999, Calpine Corporation completed the
18 acquisitions from Pacific Gas & Electric Company of 14
19 geothermal power plans at The Geysers in Northern California,
20 with a combined capacity of approximately 700 megawatts ("MW").
21 With these acquisitions Calpine Corporation now owns and
22 operates 879 MW of geothermal generating capacity and is the
23 nation's largest geothermal and green power producer.

24

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 Q: Please describe Calpine Eastern Corporation and the
2 relationship between Calpine, Calpine Eastern, and Calpine
3 Corporation.

4 A: Calpine Eastern Corporation is one of three regional Calpine
5 Corporation subsidiaries that have responsibility for
6 developing, acquiring, and operating the power plants owned by
7 Calpine Corporation and its subsidiaries and for marketing the
8 output of those plants. Calpine Eastern generally has the
9 responsibility for developing power plants all the way through
10 the various permitting processes and construction phase and
11 into commercial operation, and also has the responsibility for
12 overseeing the marketing of the projects' output and for
13 overseeing the operation and management of the projects.
14 Calpine (i.e., Calpine Construction Finance Company, L.P.)
15 Provides the financing for the projects and owns them upon
16 completion, and, as such, the development of the projects is
17 completed in the name of Calpine. Calpine Corporation is the
18 parent of both Calpine and Calpine Eastern.

19
20 Q: What existing power plants do Calpine Corporation and its
21 subsidiaries have ownership interests in?

22 A: Calpine Corporation and its subsidiaries have ownership
23 interests in 44 existing power generation facilities with a
24 current aggregate capacity of approximately 5,832.5 MW,

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 consisting of 25 gas-fired generation plants with a total
2 capacity of 4,944.5 MW and 19 geothermal power generating
3 facilities with a total capacity of 888 MW. Calpine
4 Corporation's ownership interests, through various wholly-owned
5 subsidiaries, in these plants total 4,676.8 MW, including
6 3,797.8 MW of gas-fired capacity and 879 MW of geothermal
7 capacity. These existing power plants are located in
8 California, New York, Texas, Florida, Massachusetts, New
9 Jersey, Pennsylvania, Virginia, Illinois, Oklahoma and
10 Washington. Exhibit _____ (TRE-2) presents Calpine
11 Corporation's generation portfolio.

12

13 **Q: Do any subsidiaries or affiliates of Calpine Corporation**
14 **presently own and operate any electrical power plants in**
15 **Florida?**

16 **A: Yes.** Calpine Corporation, through wholly owned subsidiaries,
17 owns the entire ownership interest in the Auburndale Power
18 Plant, a 150 MW cogeneration power plant located in Auburndale,
19 Florida adjacent to the Osprey Project site. Most of the
20 output from the Auburndale Power Plant is sold to Florida Power
21 Corporation pursuant to a long-term negotiated contract, and
22 the remainder is presently sold to Tampa Electric Company
23 pursuant to a short-term negotiated contract.

24

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 Q: What other projects do Calpine and its subsidiaries currently
2 have under construction and development?

3 A: Calpine Corporation's subsidiaries, including Calpine
4 Construction Finance Company, currently have fourteen gas-fired
5 projects under construction with total capacity of 7,800 MW;
6 Calpine Corporation's ultimate ownership share in these plants
7 will be 6,493.2 MW. Upon completion of the projects under
8 construction, Calpine Corporation will have interests in 58
9 power plants located in 15 states having an aggregate capacity
10 of 13,632.5 MW, of which we will have a net interest in 11,170
11 MW. Of this total generating capacity, approximately 90
12 percent will be gas-fired and 10 percent will utilize
13 geothermal technology. The power plants under construction are
14 located in Missouri, Texas, California, Maine, Arizona, and
15 Rhode Island.

16 Calpine Corporation's subsidiaries, including Calpine
17 Construction Finance Company, have also announced plans to
18 develop fifteen gas-fired power plants with a total capacity of
19 9,880 megawatts; Calpine Corporation's ultimate ownership share
20 of these projects will be 8,807.5 megawatts. The power plants
21 under development are located in California, Texas, Florida,
22 Mississippi, Alabama, Pennsylvania, Arizona, Oregon, and
23 Connecticut.

24

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 Q: Please describe the regulatory status of Calpine Construction
2 Finance Company, L.P.

3 A: Calpine is owned by its investors and will own facilities,
4 i.e., the Osprey Energy Center and the Blue Heron Energy Center
5 identified in Calpine's 2000 Ten-Year Site Plan, comprising a
6 generation system in Florida. It is my understanding that
7 Calpine is an electric utility under Florida law, regulated by
8 the Commission to the extent that the Commission regulates
9 wholesale utilities. This is based on my experience in Florida
10 and is not intended to be a legal conclusion. For example,
11 Calpine filed a ten-year site plan this spring and understands
12 that it is subject to the Commission's emergency and
13 coordination powers.

14 As a wholesale utility that sells electricity in
15 interstate commerce, it is my understanding that Calpine is
16 subject to the FERC's regulation under the Federal Power Act.
17 Accordingly, Calpine has filed and obtained approval from the
18 Federal Energy Regulatory Commission ("FERC") of its tariff
19 authorizing Calpine to sell electricity, at wholesale, at
20 negotiated or market-based rates.

21 Calpine will own the Project and will market the Project's
22 capacity and associated energy to other utilities and power
23 marketers under negotiated arrangements entered into pursuant
24 to Calpine's Rate Schedule No. 1 approved by the FERC. The

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 FERC's order approving this market-based rate tariff is
2 included as Exhibit _____ (TRE-3) to my testimony. That rate
3 schedule, which applies to all sales by Calpine, provides that
4 Calpine may enter into agreements with willing purchasers of
5 energy and capacity provided by the Project.

6
7 **Q: What experience do Calpine Corporation and its subsidiaries**
8 **have in operating electrical power plants?**

9 **A:** Calpine Corporation and its subsidiaries presently operate the
10 vast majority of the 44 existing power plants in which Calpine
11 Corporation holds ownership interests, including the 150 MW
12 Auburndale Power Plant. By the end of 2002, Calpine
13 Corporation's subsidiaries are projected to be operating more
14 than 13,000 MW of generating capacity in which Calpine
15 Corporation will have an ownership interest. Such services
16 include the operation of power plants, geothermal steam fields,
17 wells and well pumps, gas fields, gathering systems, and gas
18 pipelines. Calpine Corporation's subsidiaries also supervise
19 maintenance, materials purchasing, and inventory control;
20 manage cash flow; train staff; and prepare operating and
21 maintenance manuals for each power generation facility that
22 they operate. As a facility develops an operating history,
23 Calpine Corporation's operation and management subsidiaries
24 analyze the facility's operation and may modify or upgrade

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 equipment or adjust operating procedures or maintenance
2 measures to enhance the facility's reliability or
3 profitability. These services are performed under the terms of
4 operating and maintenance agreements pursuant to which Calpine
5 Corporation's operation and management subsidiaries are
6 generally reimbursed for certain costs and paid an annual
7 operating fee, and pursuant to which these subsidiaries may
8 also be paid an incentive fee based on the performance of each
9 facility.

10

11 **Q: Why is Calpine interested in building and operating the Osprey**
12 **Energy Center in Florida?**

13 **A:** Calpine views the construction and operation of the Osprey
14 Energy Center as a mutually beneficial business opportunity for
15 Calpine, for Peninsular Florida utilities with responsibility
16 for serving retail load, and for the retail customers served by
17 those utilities. The Osprey Project is consistent with and
18 meets Peninsular Florida's needs for generating capacity to
19 maintain system reliability and integrity and for adequate
20 electricity at a reasonable cost.

21 According to the 2000 Regional Load & Resource Plan
22 prepared by the Florida Reliability Coordinating Council and
23 dated July 2000 ("FRCC 2000 Resource Plan"), Peninsular Florida
24 needs more than 11,000 MW of new installed capacity in order to

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 maintain winter reserve margins generally between 7% and 13%
2 without exercising load management and interruptible resources
3 from the winter of 2000-2001 through the winter of 2009-2010.
4 Even with the exercise of load management and interruptible
5 resources, Peninsular Florida needs more than 11,000 MW of new
6 capacity, as forecast in the FRCC 2000 Resource Plan, to
7 maintain planned reserve margins through the same period. My
8 Exhibit _____ (TRE-4) shows that of this needed additional
9 11,000 MW of capacity, almost 9,000 MW is either unpermitted or
10 unsited, or both.

11 The foregoing clearly demonstrates that there is a
12 significant and substantial reliability need for new generating
13 capacity in Peninsular Florida. The Project will contribute to
14 meeting that need either (a) by providing firm capacity under
15 contracts with other Florida utilities for the Project's
16 output), or (b) if, pursuant to a change in Florida regulatory
17 circumstances, the Project is operated partially or totally as
18 merchant capacity at some future time, by providing additional
19 reliability protection by the Project's presence (connected
20 capacity) and availability. The Project will improve the
21 winter reserve margin by about 1.3 percent in the winter of
22 2003-2004. The winter 2003-2004 reserve margin of generation
23 resources will increase from 17.13 percent to 18.45 percent
24 with the Project's additional 529 MW. The Project will provide

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 similar reserve margin improvements in subsequent years. Under
2 any scenario, the Osprey Energy Center is expected to provide
3 an additional 578 MW of net capacity to Peninsular Florida
4 utilities during extreme winter conditions and an additional
5 496 MW of additional capacity during extreme summer conditions.
6 In an extreme weather event, e.g., a prolonged period in the
7 summer with daily high temperatures exceeding 100 degrees
8 Fahrenheit, or winter weather similar to that experienced at
9 Christmas of 1989, the Project will provide substantial
10 additional generating capacity to Peninsular Florida that would
11 not otherwise be available. Assuming an average coincident
12 peak demand of 3.5 to 5.0 kW per residential customer, the
13 Project's capacity would be sufficient to maintain electric
14 service to between 99,000 homes (at 5.0 kW per household,
15 summer peak conditions) and 165,000 homes (at 3.5 kW per
16 household, winter peak conditions) during such an event.

17
18 **Q: Does Calpine expect to be represented on the Florida**
19 **Reliability Coordinating Council?**

20 **A:** Yes, Calpine expects to be represented on the FRCC with respect
21 to our Osprey Project and Blue Heron Energy Center, another
22 gas-fired combined cycle power plant that we described in our
23 2000 Ten-Year Site Plan.

24

DIRECT TESTIMONY OF TIMOTHY R. EVES

THE OSPREY ENERGY CENTER

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

Q: Please describe the Osprey Energy Center.

A: The Osprey Energy Center is a natural gas-fired power plant utilizing advanced combustion turbine technology in combined cycle configuration with a heat recovery steam generator and an electric steam turbine generator. The Project's rated capacity at average ambient site conditions is 529 MW, based on expected manufacturers' guarantees. The Project's rated winter capacity is 578 MW and its rated summer capacity is 496 MW. Construction of the Project will be managed by Calpine Eastern Corporation or its affiliates or subsidiaries. The Project is scheduled to achieve commercial in-service status during the second quarter of 2003, and is projected to have a technical and economic life in excess of 30 years. Firm delivered gas supply will be provided for the Project's operations pursuant to a contract between Gulfstream Natural Gas System and Calpine having an initial term of twenty years.

The Project will satisfy all applicable environmental permitting requirements. Gas-fired combined cycle technology is the most efficient and most environmentally benign electric generation technology currently available and feasible on a commercial basis. Analyses prepared by Slater Consulting and reported in detail in the testimony and exhibits of Kenneth J. Slater show that the Project's operations will have a

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 substantial net beneficial effect on total emissions from power
2 generation in Florida, reducing total combined emissions of
3 sulfur dioxide and nitrogen oxides by between 8,000 and 23,000
4 tons per year.

5

6 **Q: What is the approximate direct construction cost of the Osprey**
7 **Project?**

8 **A:** The estimated direct construction cost of the Project is \$194.8
9 million. This equates to \$357 per kW of capacity, calculated
10 on the basis of the Project's rated capacity of 545 MW at ISO
11 temperature and relative humidity conditions.

12

13 **Q: Please give an overview of the financing plan for the Osprey**
14 **Energy Center.**

15 **A:** The Project will be constructed and brought into commercial
16 service solely with funds provided by Calpine Corporation and
17 its subsidiaries. Calpine Corporation will provide the equity.
18 The debt will be provided by Calpine through a form of
19 revolving credit, provided by several investment banks, used to
20 simultaneously fund the debt of the construction and
21 development costs of multiple Calpine projects.

22

23 **Q: Please summarize the transmission arrangements that Calpine**
24 **anticipates will be made for connecting the Osprey Project to**

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 the Peninsular Florida transmission grid and for delivering the
2 Project's output to other Peninsular Florida utilities?

3 A: The Project will be interconnected to the Peninsular Florida
4 transmission system at Tampa Electric Company's ("TECO") Recker
5 Substation. Pursuant to TECO's transmission tariff, Calpine
6 will obtain sufficient transmission capacity to permit the
7 delivery of the Project's full output to other Peninsular
8 Florida utilities on a firm basis.

9

10 Q: What is the status of the Osprey Project in the development
11 process?

12 A: The procurement of the combustion turbine generators for the
13 Project has been released. Preliminary engineering is
14 complete. The detailed design engineering contract has been
15 let and work under that contract is expected to begin later
16 this year. Calpine has filed the site certification
17 application for the Osprey Project, which was deemed complete;
18 Calpine recently responded to the few remaining sufficiency
19 concerns raised by the Southwest Florida Water Management
20 District. Our affiliate, Calpine East Fuels, L.L.C., has
21 entered into a Precedent Agreement with Gulfstream Natural Gas
22 System, L.L.C., for firm gas transportation service for the
23 Project. With regard to transmission, TECO has completed the
24 transmission interconnection study, and we have commissioned

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 the requisite transmission system impact studies. We have
2 formally requested the reservation of sufficient capacity on
3 TECO's transmission system to accommodate power deliveries from
4 the Project to other Peninsular Florida utilities on a firm
5 basis.

6
7 **Q: When is the Osprey Project expected to achieve commercial in-**
8 **service status?**

9 **A: Based on the present schedule, Calpine expects to bring the**
10 **Osprey Project into commercial operation by June 1, 2003.**

11
12 **Q: Please introduce Calpine's other witnesses and the subject**
13 **matter of their testimony and exhibits.**

14 **A: Detailed technical information regarding the Osprey Energy**
15 **Center is presented in the testimony and exhibits of Ted S.**
16 **Baldwin, whose testimony describes the engineering aspects of**
17 **the Project, Richard A. Zwolak, AICP, whose testimony addresses**
18 **environmental and permitting issues; Michael D. Petit, who**
19 **addresses fuel transportation and fuel supply issues; Kenneth**
20 **J. Slater, who addresses the impacts of the Osprey Project's**
21 **operations on power supply costs, fuel use for power**
22 **generation, and environmental emissions associated with power**
23 **generation; Michel P. Armand, P.E., who addresses transmission**
24 **issues; and Gerard J. Kordecki, who addresses the ratepayer**

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 impacts and policy aspects of wholesale sales as proposed by
2 Calpine.

3
4 Q: What other companies and entities are assisting in developing
5 and permitting the Osprey Project?

6 A: Golder Associates is providing environmental analysis and
7 permitting support for the Project. Navigant Consulting has
8 provided certain transmission load flow studies in support of
9 Calpine's site certification application for the Project. TECO
10 is providing interconnection studies and transmission system
11 impact studies and will, pursuant to its FERC-approved
12 transmission tariff, provide transmission service to
13 accommodate delivery of the Project's output to the Peninsular
14 Florida utilities that purchase power from the Project.
15 Gulfstream Natural Gas System will provide gas transportation
16 service to the Project.

17
18 GENERATING AND NON-GENERATING ALTERNATIVES CONSIDERED

19 Q: What generating alternatives did Calpine consider to the
20 particular configuration that was actually selected for the
21 Osprey Project?

22 A: The major available generating alternatives that were examined
23 and evaluated in arriving at the decision to use the selected
24 generating technology for the Osprey Energy Center were gas-

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 fired and oil-fired combustion turbines, gas-fired and oil-
2 fired combined cycle units, gas-fired steam generation units,
3 conventional pulverized coal steam units, nuclear steam units,
4 renewable energy technology, and integrated coal gasification
5 combined cycle units. Exhibit _____ (TRE-4) lists the
6 generating alternatives evaluated, and Exhibit _____ (TRE-5)
7 summarizes our cost-effectiveness evaluation of the alternative
8 technologies.

9

10 **Q: Why did Calpine select natural gas-fired combined cycle**
11 **technology for the Osprey Energy Center?**

12 **A:** Exhibit _____ (TRE-5) shows that gas-fired combined cycle
13 technology is expected to have the lowest levelized life-cycle
14 cost in either intermediate load operation or base load
15 operation. Projections prepared for Calpine indicate that the
16 Osprey Project will operate as a base load unit, with annual
17 capacity factors in the range of 86 to 93 percent, dependent on
18 the routine maintenance planned for each respective year.
19 These evaluations clearly indicate that the best choice for
20 Calpine, considering economics and cost-effectiveness, is gas-
21 fired combined cycle capacity.

22 The selected gas-fired combined cycle technology also
23 exhibits favorable reliability, long-term flexibility,
24 environmental, and strategic characteristics. This technology

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 is proven and extremely reliable, with a forced outage rate of
2 approximately 2 percent. The technology also has great
3 flexibility for both intermediate and base load operation; our
4 design choice allowing for duct-firing and power augmentation
5 also allows for additional flexibility of operation to meet
6 extreme demand conditions in Peninsular Florida. As stated
7 above and in Mr. Slater's testimony, the Project will have a
8 net beneficial impact on emissions from power generation for
9 Peninsular Florida, reducing total sulfur dioxide and nitrogen
10 oxides emissions by between 8,000 and 23,000 tons per year.

11 Additionally, the chosen technology is favorable
12 considering strategic factors, not only from Calpine's
13 perspective, but also from the perspective of purchasing
14 utilities and from the perspective of the State as a whole.
15 The Project will be fueled by domestically produced natural gas
16 rather than by imported fuel that may be subject to
17 interruption due to political or other events. The Project has
18 a low installed cost and a highly efficient heat rate, assuring
19 its long-term economic viability. The Project's gas-fired
20 combined cycle technology is exceptionally clean and minimizes
21 airborne emissions. Since the Project will use clean natural
22 gas as its fuel, there is substantially less risk (than with
23 older, less efficient, and more polluting power plants) that
24 the Project will be adversely affected by future changes in
25 environmental regulations.

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 The Project will also conserve primary energy consumed for
2 electricity production in Florida by displacing generation from
3 less efficient, and less cost-effective, oil-fired, natural
4 gas-fired, and coal-fired units. In so doing, the Project will
5 enhance both the overall efficiency of electricity production
6 and the overall efficiency of natural gas use, as well as
7 reduce the consumption of petroleum fuels for electricity
8 generation in Florida.

9 The desirability of Calpine's technology choice is further
10 supported by the fact that other Florida utilities are planning
11 to add capacity of similar technology and design, and by the
12 fact that the type of power plant proposed by Calpine is the
13 technology of choice for the large majority of new power plant
14 capacity planned in the United States.

15
16
17 **Q: What, if any, non-generating alternatives did Calpine consider**
18 **in the processes that led it to proceed with the Osprey**
19 **Project?**

20 **A: There are no viable non-generating alternatives to the Osprey**
21 **Project. Calpine is in the business of providing efficient,**
22 **cost-effective wholesale power to other utilities. Based on my**
23 **experience, as a wholesale-only utility, Calpine does not**
24 **engage in end-use conservation programs and is not required to**
25 **have conservation goals pursuant to the Florida Energy**

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 Efficiency and Conservation Act. Accordingly, Calpine did not
2 consider non-generating alternatives to constructing and
3 operating the Osprey Project.

4
5 **Q: Notwithstanding your position that Calpine does not engage in**
6 **direct end-use energy conservation programs, will the Osprey**
7 **Energy Center have any energy conservation effects?**

8 **A:** Yes. The Project, like other gas-fired combined cycle units,
9 provides energy efficiency benefits to Florida by using less
10 primary fuel to produce a given quantity of electricity and
11 provides environmental benefits in the form of reduced
12 emissions that would otherwise occur if oil-fired or gas-fired
13 steam turbine plants, or other fossil fuel baseload or peaking
14 units, were dispatched instead of the Project. Accordingly,
15 the Project promotes and is specifically consistent with the
16 Florida Legislature's declared goals of enhancing the overall
17 efficiency and cost-effectiveness of electricity production and
18 natural gas use, and of conserving expensive resources,
19 particularly petroleum fuels. The Project also provides
20 environmental benefits in the form of reduced sulfur dioxide
21 and nitrogen oxides emissions that would otherwise occur if
22 oil-fired or gas-fired steam turbine plants, or other fossil
23 fuel-fired baseload or peaking units, were dispatched instead
24 of the Project.

DIRECT TESTIMONY OF TIMOTHY R. EVES

NEED FOR THE OSPREY ENERGY CENTER

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

Q: What is Calpine's basic business strategy for Florida?

A: Calpine's basic business strategy for Florida is to develop clean, cost-effective, gas-fired power plants and to sell the output of those plants on a wholesale basis to Peninsular Florida utilities with responsibility for serving retail customers. Calpine believes that this approach represents a mutually beneficial opportunity for Calpine, for the Peninsular Florida utilities to whom we will sell the Project's power, and for those utilities' retail electric customers.

Q: How does the Osprey Energy Center fit into that strategy?

A: The Osprey project is the first of Calpine's larger, state-of-the-art gas-fired combined cycle power plants with which we anticipate providing wholesale power to Peninsular Florida retail-serving utilities. We expect to have the Project commercially operational by June 1, 2003, in time for the summer of 2003.

Q: Does Calpine need the Osprey Energy Center?

A: Yes. Calpine needs the Osprey Project to participate in the Peninsular Florida wholesale electricity market and to meet the needs of the Peninsular Florida utilities with whom we will contract.

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 Q: Please give an overview of the projected operations of the
2 Osprey Energy Center.

3 A: Mr. Kenneth J. Slater's analyses of the Florida bulk power
4 supply market and of the Project's operating economics yield
5 projections that the Project will operate between 7,500 and
6 8,500 hours per year, with an availability factor of greater
7 than 94 percent. We anticipate that the Project will provide
8 approximately 578 MW (winter) and 496 MW (summer) of capacity,
9 and between 4,000,000 MWH and 4,400,000 MWH per year of cost-
10 effective electrical energy, into the wholesale power market in
11 Peninsular Florida.

12

13 Q: What is Calpine's plan for selling the output of the Osprey
14 Energy Center?

15 A: Calpine plans to sell the output of the Osprey Project to
16 Peninsular Florida retail-serving utilities pursuant to our
17 FERC-approved market-based rate tariff. We initially expect to
18 commit the output of the Project to Peninsular Florida
19 utilities pursuant to long-term contracts, probably having
20 initial terms of 3 to 10 years with renewal rights vested in
21 the utilities with whom we execute contracts. Over the longer
22 term, depending on the status of the law relating to
23 competitive wholesale power sales in Florida, we may enter into
24 shorter-term contracts.

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 Calpine anticipates that it will make no sales from the
2 Osprey Energy Center at retail. Calpine projects that, under
3 any scenario, all or virtually all of its wholesale sales will
4 be made to other utilities for resale to their retail customers
5 in Peninsular Florida.

6
7 **Q: What utilities' needs is Calpine proposing to meet or serve**
8 **with the Osprey Energy Center?**

9 **A:** Calpine stands ready to offer the output of the Osprey Project
10 to all Peninsular Florida retail-serving utilities. Exhibit
11 _____ (TRE-6) to my testimony shows that, based on their
12 current ten-year site plans, seven Peninsular Florida utilities
13 have needs for almost 9,000 MW of capacity for which they do
14 not appear to have permits or commitments. While we are
15 obviously not proposing to meet all of these needs with our 529
16 MW Osprey Energy Center, we believe that this substantial
17 amount of need indicates that the Osprey Project will be able
18 to serve Peninsular Florida utilities' needs as we expect.
19 Ultimately, of course, the Osprey Project's output will meet
20 the specific needs of the utilities with whom Calpine contracts
21 to sell the Project's capacity and energy.

22
23 **Q: What is the status of Calpine's discussions or negotiations**
24 **with Peninsular Florida utilities for purchasing the output of**

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 the Osprey Project?

2 A: We are presently pursuing power sales opportunities with
3 Seminole Electric Cooperative, Inc., the Florida Municipal
4 Power Agency, Reedy Creek Improvement District, the Orlando
5 Utilities Commission, JEA (formerly the Jacksonville Electric
6 Authority), the City of Lakeland, and Tampa Electric Company.
7 We have tendered term sheets to most of these utilities, and we
8 are in various stages of discussions or negotiations with
9 several.

10

11 Q: How likely is it that the Project would make sales of capacity
12 or energy or both to utilities outside Florida, under any
13 scenario?

14 A: It is unlikely that any significant amount of the Project's
15 output would be sold outside Peninsular Florida under any
16 scenario. This is a function of several factors, including
17 relatively low generation costs in the Southeastern Electric
18 Reliability Council ("SERC") region as compared to those within
19 Peninsular Florida, recent power shortages and projected tight
20 reserves in Peninsular Florida, and limited transmission export
21 capacity from Florida into the SERC region. Analyses prepared
22 for Calpine indicate that the market for the Project's output
23 is the wholesale power market within Florida, or within
24 Peninsular Florida, to be more precise. Of course, this is why

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 we are seeking the Commission's determination of need that will
2 enable us to build the Osprey Energy Center in Peninsular
3 Florida, and why the transmission interconnection facilities
4 are being designed to accommodate deliveries of power from the
5 Project to utilities located within the State of Florida.
6 Because the wholesale market in Peninsular Florida needs the
7 capacity and energy of the Project, as a wholesale provider,
8 Calpine needs the Project in order to participate in that
9 market and deliver the benefits to Florida electric utilities
10 and their customers that our projections indicate will result
11 from that participation.

12 If the Project were operated either partially or totally
13 as merchant capacity at some future time, it is hypothetically
14 possible that, under certain short-term circumstances, Calpine,
15 like other Florida utilities with available power for sale,
16 would make sales to utilities outside Florida. For example, if
17 a strong cold front were to stall over South Georgia, resulting
18 in mild weather for Peninsular Florida coinciding with very
19 cold weather in the rest of the Southeast, it is possible that
20 the Project might, like other Florida utilities with available
21 capacity, make some wholesale sales to utilities in other
22 states, perhaps Georgia or Alabama, assuming that there was
23 adequate transmission capacity to accommodate such south-to-
24 north transactions. Overall, however, we expect that the vast
25 majority of the Project's power sales will be made, at

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 wholesale, to other utilities within Peninsular Florida.

2

3 Q: Does Calpine either plan to sell electricity at retail in
4 Florida or anticipate making retail power sales in Florida?

5 A: No. Selling at retail is not a part of Calpine's development
6 or marketing plans.

7

8 Q: What, if any, additional benefits would the Osprey Energy
9 Center provide to Florida, its citizens, and its electric
10 ratepayers?

11 A: In addition to fairly dramatic power supply cost savings, the
12 Project can be expected to provide enhanced reliability of
13 electric supply, both through additional generation capacity
14 and through fuel diversity. This results in reduced losses to
15 the people and businesses of Florida from service
16 interruptions. The Project will also enhance environmental
17 quality; stimulate economic development through lower overall
18 electricity costs, increased employment, and increased local
19 government tax revenues; and transfer the financial risks
20 associated with owning and operating an electrical generation
21 facility away from electric ratepayers to Calpine.

22

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 Q: What, if any, adverse effects would occur if the Osprey Project
2 were not brought into service as proposed by Calpine?

3 A: Florida would lose all of the benefits that the Project would
4 otherwise provide. Specifically, Florida, the State's electric
5 utilities, and their retail customers would lose the following:

- 6 1. More than 4,000,000 MWH per year of clean, efficient,
7 cost-effective generation;
- 8 2. The substantial cost savings that will result as the
9 Project's operation displaces generation from more costly
10 power plants, on the order of \$150 million per year if the
11 Project were developed in addition to all other planned
12 resources;
- 13 3. The additional economic value provided by the Project
14 through (a) lower costs of ancillary services, (b) reduced
15 losses of economic productivity due to service
16 interruptions, and (c) enhanced economic development;
- 17 4. The environmental emissions reductions that will result as
18 the Project displaces generation from less efficient
19 generation resources;
- 20 5. The risk transference benefits of having Calpine own and
21 operate the Project outside any retail-serving utility's
22 rate base; and
- 23 6. The economic development stimulation benefits of the
24 Project, including lower overall electricity costs,

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 increased employment, and enhanced local government tax
2 revenues.

3
4 CONDITIONAL DETERMINATION OF NEED

5 Q: Please explain exactly what Calpine is asking the Commission to
6 do with respect to Calpine's petition for determination of need
7 for the Osprey Project.

8 A: Calpine is asking the Commission for an affirmative
9 determination of need for the Osprey Energy Center. While
10 Calpine continues to believe that the Commission's decision to
11 approve the Duke Energy-New Smyrna Beach project as a merchant
12 plant was correct, Calpine is proceeding in accordance with the
13 Florida Supreme Court's opinion reversing that decision.
14 Accordingly, Calpine expects to furnish evidence to the
15 Commission that the Osprey Project's output will be committed
16 to Peninsular Florida utilities with responsibility for serving
17 Florida retail customers. We expect to be able to furnish such
18 utility-specific information before the currently scheduled
19 hearings. However, if we are not able to do so, we are asking
20 the Commission for an affirmative determination of need subject
21 to the condition that, before construction can commence,
22 Calpine must demonstrate to the Commission that it has
23 appropriate contractual arrangements confirming that the
24 Project's output will be provided to Florida retail-serving

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 utilities for the benefit of their retail customers.

2

3 Q: When will Calpine identify those utilities whose needs Calpine
4 expects to serve?

5 A: As soon as possible. Calpine is actively pursuing discussions
6 and negotiations with several utilities, identified above,
7 toward the sale of the Osprey Project's output. As I stated
8 above, Calpine believes that we will have satisfactory evidence
9 of our utility-specific commitments, e.g., letters of intent or
10 contracts, in time for the Commission to consider and evaluate
11 at the hearings currently scheduled for mid-October.

12

13 Q: Why has Calpine proceeded to file its need determination
14 petition for the Osprey Project before having power sales
15 contracts with specific Florida utilities in hand?

16 A: Calpine has always intended to sell the output of the Osprey
17 Project to Peninsular Florida retail-serving utilities.
18 Calpine initially planned to obtain the necessary permits for
19 the Project and commence construction before executing power
20 sales contracts; however, the Florida Supreme Court's ruling in
21 the Duke Energy-New Smyrna Beach case has caused Calpine to
22 alter its approach so that now we will enter contracts for the
23 sale of the Project's output before commencing construction of
24 the Project.

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 While the Court's ruling has caused Calpine to reschedule
2 several events, we believe that we have a workable schedule
3 that will enable us to bring the Project into commercial
4 service by June 1, 2003, in time for the summer of 2003. In
5 order to achieve this in-service date, however, Calpine must
6 proceed with our overall permitting activities, including
7 obtaining the Commission's determination of need. Further
8 delay will prevent Calpine from bringing the Project into
9 service in time for the summer of 2003, and could prevent the
10 Project from being on-line for the winter of 2003-2004 as well.
11 Such delays would cost Florida and its electric customers the
12 Project's benefits for the length of the delay, which include
13 cost savings on the order of \$150 million or more per year,
14 emissions reductions on the order of 8,000 to 23,000 tons per
15 year, and reliability improvements, and would also cost Calpine
16 the business opportunity of being able to participate in the
17 Florida market for the duration of any delay. It is for these
18 reasons that Calpine has proceeded with this need determination
19 case at this time.

20

21 **Q: What if the law in Florida should change or be reinterpreted to**
22 **allow Calpine to operate the Osprey Project as a "merchant"**
23 **power plant?**

24 **A: If the law in Florida should change from what was articulated**

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 by the Florida Supreme Court in its initial opinion on the
2 Commission's Duke Energy-New Smyrna Beach need determination
3 order, Calpine would first, of course, honor all contracts that
4 it had entered into. With respect to any remaining uncommitted
5 capacity, Calpine would expect to proceed as originally
6 intended, i.e., to obtain the necessary permits and begin
7 construction of the Osprey Project and then continue working
8 toward obtaining power sales contracts for the Project's output
9 with Peninsular Florida retail-serving utilities.

10

COST-EFFECTIVENESS AND ECONOMIC VIABILITY

11

12 Q: Is the Osprey Project the most cost-effective alternative
13 available to Calpine to meet its projected needs for serving
14 its anticipated wholesale customers?

15 A: Yes. As shown in Exhibit _____ (TRE-5), gas-fired combined
16 cycle generation capacity has the lowest expected total cost of
17 all technologies evaluated for both intermediate and base load
18 duty. Given the projections that the Osprey Project will
19 operate as a base load unit, the gas-fired combined cycle
20 technology that Calpine has chosen is the most cost-effective
21 alternative available.

22

23 Q: How were these alternatives evaluated?

24 A: These alternatives were evaluated by comparing the estimated

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 levelized life-cycle operating costs of the different
2 technologies in different modes of operation, i.e., operated in
3 peak, intermediate, and base load modes of operation. The
4 analyses, which are summarized in Exhibit _____ (TRE-5), show
5 that the lowest levelized costs for any technology for
6 intermediate and base load applications are for the gas-fired
7 combined cycle technology that Calpine has selected for the
8 Osprey Energy Center.

9
10 Q: Mr. Eves, based on your experience in the electric power
11 industry, and particularly on your experience working for most
12 of your career in Florida, do you believe that power sales from
13 the Osprey Project will be cost-effective to those utilities
14 that purchase the Project's output? Why or why not?

15 A: Yes, based on my experience, I believe that the wholesale power
16 that Calpine sells to Florida retail-serving utilities will be
17 cost-effective to the utilities that purchase the Project's
18 power for ultimate use by their retail customers.

19 The utilities to whom Calpine will sell the Project's
20 output on a wholesale basis are under no obligation to buy from
21 us (other than a specific contractual obligation into which the
22 purchasing utility voluntarily enters), and therefore, these
23 utilities will only buy output from the Project when it is
24 cost-effective to do so. For example, a purchasing utility

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 will only buy the Project's capacity when the cost to that
2 utility is less than either building its own capacity or buying
3 capacity from another source. Similarly, a purchasing utility
4 will only buy the Project's energy when the cost is less than
5 the cost of the utility's own incremental generation energy
6 cost or power purchase cost.

7
8 Q: In your opinion, will any strategic benefits accrue to
9 utilities that purchase the Osprey Project's output and to
10 their retail customers?

11 A: Yes. From the perspective of utilities that purchase the
12 Project's output, the opportunity to enter into contracts with
13 relatively short terms, e.g., 3 to 10 years, enhances
14 flexibility and reduces long-term capital risk and stranded
15 cost exposure as compared to a conventional rate-based power
16 plant. Similarly, the purchasing utilities and their
17 ratepayers will also enjoy reduced exposure to the risk of
18 obsolescence and the virtually certain elimination of the risk
19 of cost overruns, both in construction and in operation.

20
21 Q: Do you believe that the Osprey Project will be economically
22 viable? Why or why not?

23 A: Yes, I believe that the Osprey Project will be economically and
24 financially viable for its entire useful life. Calpine, not

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 Florida electric ratepayers, will bear the investment risk
2 associated with the Project, and as such, Calpine will have
3 very strong incentives to maintain and operate the Project as
4 efficiently and economically as possible. In simple economic
5 terms, Calpine expects to operate the Project whenever
6 potential incremental revenue exceeds incremental production
7 costs. As noted above, we expect to operate the Project
8 between 7,500 and 8,500 hours per year, with a very high
9 availability factor.

10 Also, the gas-fired combined cycle technology that Calpine
11 has selected for the Project is the most efficient and the most
12 economical currently available on a commercial basis. Indeed,
13 it is the technology of choice throughout the U.S. electric
14 industry today.

15
16 Q: What, if anything, could happen that would render the Osprey
17 Project no longer economically viable?

18 A: Power plant technology, as all technology, is constantly
19 advancing and being introduced to the market. At some point in
20 time, new technology will be implemented on a scale of
21 sufficient magnitude to render today's current best technology
22 obsolete. This natural obsolescence in generation technology
23 is traditionally thirty years in the U.S. power market.
24 Calpine expects that the economic life of the Osprey Project

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 would be in line with this natural obsolescence cycle.

2 A significant portion of the generating plants currently
3 operating in Florida have already reached this point of
4 obsolescence. However, due to the significant demand growth in
5 Florida and the very limited number of new plants under
6 construction, this fleet of obsolete plants is allowed to
7 continue operation -- to the detriment of Florida and the
8 State's electric customers.

9 From a more short-term perspective, it is difficult to
10 envision a circumstance or situation that would render the
11 Project not economically viable. However, the Commission
12 should keep in mind that in the event that such an unforeseen
13 event may occur, Calpine will bear the capital and investment
14 risk of the Project and that Florida electric customers will
15 not be exposed to any stranded cost risk or other risks
16 associated with the Project, as they would be if the same
17 amount of capacity had been built and included in a traditional
18 regulated utility's rate base.

19
20 **REQUESTED COMMISSION ACTION**

21 Q: What action is Calpine asking the Commission to take in this
22 proceeding?

23 A: Calpine is petitioning the Commission to issue its order
24 granting an affirmative determination of need for the Osprey

DIRECT TESTIMONY OF TIMOTHY R. EVES

1 Energy Center. As stated above, Calpine believes that we will
2 be able to furnish evidence that the Project's output is
3 committed to specific Florida utilities in time for the
4 hearings scheduled for mid-October. If not, however, Calpine
5 is asking the Commission for an affirmative determination of
6 need that would allow Calpine to proceed through the permitting
7 process subject to the specific condition that before Calpine
8 can begin construction of the Project, we would have to
9 demonstrate the requisite utility-specific commitment of the
10 Project's output to the Commission.

11

12 Q: Does this conclude your direct testimony?

13 A: Yes, it does.

14

15

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

**In Re: Petition for Determination of)
Need for an Electrical Power Plant in)
Polk County by Calpine Construction)
Finance Company, L.P.)**

DOCKET NO. 000442-EI

EXHIBITS

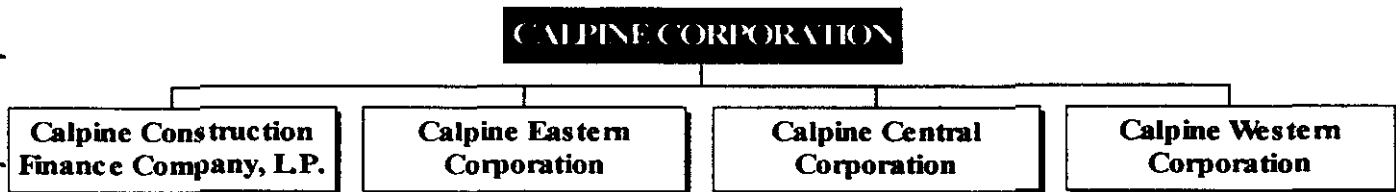
OF

TIMOTHY R. EVES

ON BEHALF OF

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

CALPINE CONSTRUCTION FINANCE COMPANY, L.P. OWNERSHIP STRUCTURE





CALPINE CORPORATION PORTFOLIO OF GENERATING ASSETS

Gas Fired Power Plants	Nameplate Capacity (megawatts)	Calpine Interest Percentage	Calpine Net Interest (megawatts)
<u>Agnews</u> San Jose, CA	29.0	20%	5.8
<u>Auburndale</u> Auburndale, FL	150.0	50%	75.0
<u>Bayonne</u> Bayonne, NJ	165.0	7.5%	12.4
<u>Belhpage</u> Hicksville, NY	57.0	100%	57.0
<u>Clear Lake</u> Pasadena, TX	412.0	100%	412.0
<u>Dighton</u> Dighton, MA	169.0	50%	84.5
<u>Gilroy</u> Gilroy, CA	120.0	100%	120.0
<u>Gordonsville</u> Gordonsville, VA	240.0	50%	120.0
<u>Grays Ferry</u> Philadelphia, PA	150.0	40%	60.0
<u>Greenleaf 1</u> Yuba City, CA	49.5	100%	49.5
<u>Greenleaf 2</u> Yuba City, CA	49.5	100%	49.5
<u>Kennedy</u> Jamaica, NY	107.0	100%	107.0
<u>King City</u> King City, CA	120.0	100%	120.0
<u>Lockport</u> Lockport, NY	184.0	11.36%	20.9
<u>Morris</u> Morris, IL	1,677.0	80%	1,341.6
<u>Newark</u> Newark, NJ	58.0	80%	46.4
<u>Parlin</u> Parlin, NJ	122.0	80%	97.6
<u>Pasadena</u> Pasadena, TX	240.0	100%	240.0

<u>Philadelphia</u> Philadelphia, PA	22.0	66.4%	14.6
<u>Pittsburg</u> Pittsburg, CA	70.0	100%	70.0
<u>Pryor</u> Pryor, OK	110.0	80%	88.0
<u>Stony Brook</u> Stony Brook, NY	40.0	100%	40.0
<u>Sumas</u> Sumas, WA	125.0	70%	87.5
<u>Texas City</u> Texas City, TX	450.0	100%	450.0
<u>Watsonville</u> Watsonville, CA	28.5	100%	28.5

Geothermal Power Plants	Nameplate Capacity (megawatts)	Calpine Interest Percentage	Calpine Net Interest (megawatts)
<u>Aidlin</u> Middletown, CA	20.0	55%	11.0
<u>Bear Canyon</u> Middletown, CA	20.0	100%	20.0
<u>Calistoga</u> Middletown, CA	67.0	100%	67.0
<u>Lake County (2 power plants)</u> Middletown, CA	150.0	100%	150.0
<u>Sonoma</u> Middletown, CA	60.0	100%	60.0
<u>Sonoma County (12 power plants)</u> Middletown, CA	544.0	100%	544.0
<u>West Ford Flat</u> Middletown, CA	27.0	100%	27.0

Under Construction	Nameplate Capacity (megawatts)	Calpine Interest Percentage	Calpine Net Interest (megawatts)
<u>Aries</u> Pleasant Hill, MO	600.0	50%	300.0
<u>Baytown</u> Baytown, TX	800.0	100%	800.0
<u>Channel</u> Houston, TX	560.0	100%	560.0

<u>Delia</u> Pittsburg, CA	880.0	50%	440.0
<u>Hidalgo</u> Edinburg, TX	500.0	78.5%	392.5
<u>Los Medanos</u> Pittsburg, CA	500.0	100%	500.0
<u>Lost Pines I</u> Austin, TX	545.0	50%	272.5
<u>Magic Valley</u> Edinburg, TX	730.0	100%	730.0
<u>Pasadena Expansion</u> Pasadena, TX	545.0	100%	545.0
<u>Rumford</u> Rumford, ME	265.0	66.7%	176.8
<u>South Point</u> Bullhead City, AZ	545.0	100%	545.0
<u>Sutter</u> Yuba City, CA	545.0	100%	545.0
<u>Tiverton</u> Tiverton, RI	265.0	62.8%	166.4
<u>Westbrook</u> Westbrook, ME	520.0	100%	520.0

Under Development	Nameplate Capacity (megawatts)	Calpine Interest Percentage	Calpine Net Interest (megawatts)
<u>Acadia</u> Eunice, LA	1,000.0	50%	500.0
<u>Blue Heron</u> Indian River County, FL	1,080.0	100%	1,080.0
<u>Calgary Energy Centre</u> Calgary, Alberta	250.0	100%	250.0
<u>Decatur</u> Decatur, AL	700.0	100%	700.0
<u>Freestone Energy Center</u> Freestone County, TX	1,000.0	100%	1,000.0
<u>Fremont Energy Center</u> Fremont, Ohio	540.0	100%	540.0
<u>Hermiston</u> Hermiston, OR	540.0	100%	540.0

<u>Hillabee</u> Tallapoosa County, Ala	700.0	100%	700.0
<u>Lone Oak</u> Lowndes County, Miss	800.0	100%	800.0
<u>Metcalf</u> San Jose, CA	600.0	50%	300.0
<u>Ontelaunee</u> Ontelaunee, PA	545.0	100%	545.0
<u>Osprey</u> Auburndale, FL	540.0	100%	540.0
<u>Towantic</u> Oxford, CT	500.0	100%	500.0
<u>Wawayanda</u> Middletown, NY	540.0	100%	540.0
<u>West Phoenix</u> Phoenix, AZ	545.0	50%	272.5

© Copyright 1998 Calpine Corporation. All rights are reserved

90 FERCT 61,164

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

February 23, 2000

Docket Nos. ER00-939-000
ER00-1049-000
ER00-1115-000

Skadden, Arps, Slate, Meagher & Flom LLP
ATTN: Victor A. Contract, Esq.
Attorney for Lake Worth Generation L.L.C.
1440 New York Avenue, N.W.
Washington, D.C. 20005

Dynegy Inc.
ATTN: Daniel A. King, Esq
Attorney for Calcasieu Power, LLC
Suite 510-A
805 15th Street, N.W.
Washington, D.C. 20005-2207

Davis Wright Tremaine LLP
ATTN: Steven F. Greenwald, Esq.
Attorney for Calpine Construction Finance Company, L.P.
Suite 600
One Embarcadero Center
San Francisco, California 94111-3834

Dear Sirs:

You submitted for filing with the Commission rate schedules under which applicants will engage in wholesale electric power and energy transactions at market-based rates. Your submittals, as modified below, comply with the Commission's requirements for market-based rates and are accepted for filing. They are designated and made effective as indicated in Appendix A to this order.

Calpine Construction Finance Company, L.P. (Calpine) requests authority to engage in the sale of certain ancillary services (listed in its proposed rate schedule) at market-based rates into the markets administered by the California ISO, the New England Power Pool markets administered by ISO New England, Inc., the New York Power Pool markets administered by the New York Independent System Operator, and into the

PERO - DOCKETED
FEB 23 2000

0002240276.1

Docket No. ER00-939-000, *et al.*

-2-

Pennsylvania-New Jersey-Maryland Interchange Energy Market.¹ We will grant this request.²

Any waivers or authorizations requested by the applicants are granted to the extent specified in Appendix B to this order. Waiver of the prior or advance notice requirements, if requested, is granted to the extent specified in Appendix A. The applicants must comply with the reporting requirements and other requirements specified in Appendix B to this order.³

The codes of conduct submitted by the applicants are accepted if consistent with Appendix C, which reflects requirements adopted in previous Commission orders. Any code of conduct inconsistent with Appendix C is rejected and in such case Appendix C has been designated as the applicant's code of conduct. The codes of conduct submitted by the applicants covered by this order are consistent with Appendix C.

Calcasieu Power, L.L.C.'s (Calcasieu) proposed rate schedule fails to include a prohibition on power sales to affiliates, absent prior Commission approval under section

¹Calpine also proposes to provide Replacement Reserve service at market-based rates. The Commission has determined that Replacement Reserve service is not an ancillary service, and the granting of market-based rate authority for sales of energy and capacity includes the granting of market-based rate authority for Replacement Reserve service. See, e.g., AES Redondo Beach, L.L.C., *et al.*, 85 FERC ¶ 61,123 at 61,452, 61,464 (1998), *order on reh'g*, 87 FERC ¶ 61,208 (1999) (AES).

²See AES; New England Power Pool, 85 FERC ¶ 61,379 (1998), *reh'g pending*; Central Hudson Gas & Electric Corporation, *et al.*, 86 FERC ¶ 61,062, *order on reh'g*, 88 FERC ¶ 61,138 (1999); Atlantic City Electric Company, *et al.*, 86 FERC ¶ 61,248, *clarified*, 86 FERC ¶ 61,310 (1999).

³On May 27, 1999, the Commission issued an order in which it modified the reporting requirements for long-term transactions applicable to public utilities without ownership or control over generation or transmission facilities that are authorized to sell power at market-based rates (power marketers). Southern Company Services, *et al.*, 87 FERC ¶ 61,214 (1999), *reh'g pending* (Southern). Specifically, with respect to any long-term transaction agreed to by a power marketer after 30 days from the date of issuance of a final order in the Southern case, the power marketer must file a service agreement with the Commission within 30 days after service commences, rather than reporting transactions thereunder in its quarterly transaction summaries.

Docket No. ER00-939-000, *et al.* -3-

205 of the Federal Power Act (FPA), 16 U.S.C. § 824d (1994). Calcasieu is directed, within 30 days of the date of this order, to revise its rate schedule accordingly.

Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (1999), an entity's filing of a timely notice of intervention or a timely, unopposed motion to intervene in a proceeding makes it a party to that proceeding.

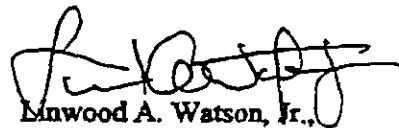
Should an applicant or any of its affiliates deny, delay, or require unreasonable terms, conditions, or rates for natural gas fuel or services to a potential electric competitor in bulk power markets, then that electric competitor may file a complaint with the Commission that could result in the applicant's or its affiliate's authority to sell power at market-based rates being suspended.⁴

Sales of accounts receivable are not dispositions of jurisdictional facilities and are not within the scope of section 203 of the FPA. To the extent an applicant seeks a case-specific finding on this or any related point, it may file a petition for a declaratory order with the Commission.

Calcasieu and Lake Worth Generation L.L.C. (Lake Worth) seek Commission approval to reassign transmission capacity. We find their requests to be consistent with our requirements.

Lake Worth and Calcasieu must inform the Commission of the dates service commences.

By direction of the Commission.


Linwood A. Watson, Jr.,
Acting Secretary.

⁴See, e.g., Louisville Gas & Electric Co., 62 FERC ¶ 61,016 at 61,148 (1993).

Docket No. ER00-939-000, et al -4-

APPENDIX A

Applicants are hereby informed of the following rate schedule designations:

Lake Worth Generation L.L.C.

Docket No. ER00-939-000

Rate Schedule Designation

Effective Date: Date Service Commences

Designation

Description

FERC Electric Tariff,
Original Volume No. 1,
Original Sheet No. 1

Market-Based Rate Tariff

Calcasieu Power, LLC

Docket No. ER00-1049-000

Rate Schedule Designations

Effective Date: Date Service Commences

Designation

Description

FERC Electric Tariff,
Original Volume No. 1
Original Sheet Nos. 1-2

Market-Based Rate Tariff
and Code of Conduct

Calpine Construction Finance Company, L.P.

Docket No. ER00-1115-000

Rate Schedule Designation

Effective Date: March 14, 2000

Designation

Description

FERC Electric Tariff,
Original Volume No. 1
Original Sheet Nos. 1-2

Market-Based Rate Tariff

Docket No. ER00-939-000, *et al.*

-5-

APPENDIX B

(1) If requested, waiver of Parts 41, 101, and 141 of the Commission's regulations, with the exception of 18 C.F.R. §§ 141.14, .15 (1999), is granted. Licensees remain obligated to file the Form No. 80 and the Annual Conveyance Report.

(2) Within 30 days of the date of this order, any person desiring to be heard or to protest the Commission's blanket approval of issuances of securities or assumptions of liabilities by those applicants who have sought such approval should file a motion to intervene or protest with the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. §§ 385.211 and 385.214.

(3) Absent a request to be heard within the period set forth in Paragraph (2) above, if the applicants have requested such authorization, the applicants are hereby authorized to issue securities and assume obligations or liabilities as guarantor, indorser, surety, or otherwise in respect of any security of another person; provided that such issue or assumption is for some lawful object within the corporate purposes of the applicants, compatible with the public interest, and reasonably necessary or appropriate for such purposes.

(4) If requested, until further order of this Commission, the full requirements of Part 45 of the Commission's regulations, except as noted below, are hereby waived with respect to any person now holding or who may hold an otherwise proscribed interlocking directorate involving the applicants. Any such person instead shall file a sworn application providing the following information:

- (a) full name and business address; and
- (b) all jurisdictional interlocks, identifying the affected companies and the positions held by that person.

(5) The Commission reserves the right to modify this order to require a further showing that neither the public nor private interests will be adversely affected by continued Commission approval of the applicants' issuances of securities or assumptions of liabilities, or by the continued holding of any affected interlocks.

(6) If requested, waiver of the provisions of Subparts B and C of Part 35 of the Commission's regulations, with the exception of sections 35.12(a), 35.13(b), 35.15 and 35.16, is granted for transactions under the rate schedules at issue here.

Docket No. ER00-939-000, et al.

-6-

(7) (a) Applicants who own generating facilities may file umbrella service agreements for short-term power sales (one year or less) within 30 days of the date of commencement of short-term service, to be followed by quarterly transaction summaries of specific sales (including risk management transactions if they result in actual delivery of electricity). For long-term transactions (longer than one year), applicants must submit the actual individual service agreement for each transaction within 30 days of the date of commencement of service. To ensure the clear identification of filings, and in order to facilitate the orderly maintenance of the Commission's files and public access to documents, long-term transaction service agreements should not be filed together with short-term transaction summaries. For applicants who own, control or operate facilities used for the transmission of electric energy in interstate commerce, prices for generation, transmission and ancillary services must be stated separately in the quarterly reports and long-term service agreements.

(b) Applicants who do not own generating facilities must file quarterly reports detailing the purchase and sale transactions undertaken in the prior quarter (including risk management transactions if they result in actual delivery of electricity). Applicants who are power marketers should include in their quarterly reports only those risk management transactions that result in the actual delivery of electricity.

(8) The first quarterly report filed by an applicant in response to Paragraph (7) above will be due within 30 days of the end of the quarter in which the rate schedule is made effective.

(9) Each applicant must file an updated market analysis within three years of the date of this order, and every three years thereafter. The Commission reserves the right to require such an analysis at any time. The applicants must also inform the Commission promptly of any change in status that would reflect a departure from the characteristics the Commission has relied upon in approving market-based pricing. These include, but are not limited to: (a) ownership of generation or transmission supplies; or (b) affiliation with any entity not disclosed in the applicants' filing that owns generation or transmission facilities or inputs to electric power production, or affiliation with any entity that has a franchised service area. Alternatively, the applicants may elect to report such changes in conjunction with the updated market analysis required above. Each applicant must notify the Commission of which option it elects in the first quarterly report filed pursuant to Paragraph (7) above.

Docket No. ER00-939-000, et al.

-7-

APPENDIX C

[APPLICANT]
SUPPLEMENT NO. _____ TO RATE SCHEDULE NO. _____STATEMENT OF POLICY
AND CODE OF CONDUCT
WITH RESPECT TO THE RELATIONSHIP BETWEEN
[POWER MARKETER] AND [PUBLIC UTILITY]Marketing of Power

1. To the maximum extent practical, the employees of [Power Marketer] will operate separately from the employees of [Public Utility].
2. All market information shared between [Public Utility] and [Power Marketer] will be disclosed simultaneously to the public. This includes all market information, including but not limited to, any communication concerning power or transmission business, present or future, positive or negative, concrete or potential. Shared employees in a support role are not bound by this provision, but they may not serve as an improper conduit of information to non-support personnel.
3. Sales of any non-power goods or services by [Public Utility], including sales made through its affiliated EWG's or QF's, to [Power Marketer] will be at the higher of cost or market price.
4. Sales of any non-power goods or services by the [Power Marketer] to [Public Utility] will not be at a price above market.

Brokering of Power

To the extent [Power Marketer] seeks to broker power for [Public Utility]:

5. [Power Marketer] will offer [Public Utility's] power first.
6. The arrangement between [Power Marketer] and [Public Utility] is non-exclusive.
7. [Power Marketer] will not accept any fees in conjunction with any Brokering services it performs for [Public Utility].

PENINSULAR FLORIDA UTILITIES' IDENTIFIED BUT UNCOMMITTED CAPACITY NEEDS, 2003-2009

<u>UTILITY</u>	<u>MW NEED</u>	<u>TYPE OF CAPACITY</u>	<u>IN-SERVICE YEAR</u>	<u>Field Construction Start Date</u>
OUC	481	Combined Cycle	2003	9/2001
	146	Combustion Turbine	2007	6/2006
Lakeland	288	Pressurized Fluidized Bed Coal	2004	6/2002
	32	Combustion Turbine	2009	10/2008
JEA	158	Combustion Turbine	2003	6/2003
	250	Combined Cycle	2006	6/2006
	168	Combustion Turbine	2009	6/2009
Seminole	153	Combustion Turbine	2002	11/2000
	244	Combined Cycle	2004	6/2002
	153	Combustion Turbine	2005	6/2003
	244	Combined Cycle	2006	11/2004
	153	Combustion Turbine	2007	6/2005
FPL	298	Combustion Turbine	2003	2002
	788	Combined Cycle	2006	2004
	394	Combined Cycle	2007	2005
	394	Combined Cycle	2008	2006
	394	Combined Cycle	2009	2007
FPC	495	Combined Cycle	2003	8/2000
	495	Combined Cycle	2005	8/2002
	495	Combined Cycle	2007	8/2004
	495	Combined Cycle	2009	8/2006
TECO	698	Combined Cycle	2003	10/2001
	711	Combined Cycle	2004	8/2002
	155	Combustion Turbine	2005	1/2003
	155	Combustion Turbine	2006	1/2004
	155	Combustion Turbine	2008	1/2006
	155	Combustion Turbine	2009	1/2007

Total MW 8,747

Data Source: 2000 Ten-Year Site Plans

**OSPREY ENERGY CENTER
GENERATING ALTERNATIVES EVALUATED**

GENERATING TECHNOLOGIES CONSIDERED

COMBUSTION TURBINE-OIL

COMBUSTION TURBINE-GAS

COMBINED CYCLE-GAS

COMBINED CYCLE-OIL

PULVERIZED COAL STEAM

CONVENTIONAL GAS STEAM

COAL GASIFICATION-COMBINED CYCLE

NUCLEAR STEAM

RENEWABLE ENERGY

OSPREY ENERGY CENTER COST-EFFECTIVENESS ANALYSES OF ALTERNATIVE GENERATION TECHNOLOGIES

Comparison of Generation Alternatives

Technology Type	Levelized Life-Cycle Cost at Assumed Capacity Factor (2000 \$/MWh)		
	Peaking Operation (10% CF)	Intermediate Oper. (50% CF)	Base Load Oper. (90% CF)
Combined Cycle - Gas Fired	\$ 98 - 118	\$ 37 - 45	\$ 30 - 37
Combined Cycle - Oil Fired	111 - 134	50 - 61	43 - 53
Simple Cycle - Gas Fired	85 - 116	52 - 73	45 - 68
Simple Cycle - Oil Fired	110 - 144	71 - 101	64 - 97
Steam - Coal	200 - 220	52 - 59	35 - 42
Steam - Gas	124	53	45
Steam - Nuclear	283	61	36
IGCC Technology	196 - 245	49 - 61	32 - 40
Renewable Energy	121 - 1072	67 - 240	47 - 147

Source: R. W. Beck and Associates.