ORIGINAL

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In Re: Joint Petition for Determination of Need for the Osprey Energy Center in Polk County by Seminole Electric Cooperative, Inc. and Calpine Construction Finance Company, L.P.	)	DOCKET NO. 001748-EC

DIRECT TESTIMONY AND EXHIBITS

OF

TED S. BALDWIN

ON BEHALF OF

CALPINE CONSTRUCTION FINANCE COMPANY, L.P.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

IN RE: JOINT PETITION FOR DETERMINATION OF NEED FOR THE OSPREY ENERGY CENTER IN POLK COUNTY BY SEMINOLE ELECTRIC COOPERATIVE, INC. AND CALPINE CONSTRUCTION FINANCE COMPANY, L.P.

DIRECT TESTIMONY OF TED S. BALDWIN, P.E.

Q: Please state your name and business address.

A: My name is Ted S. Baldwin, and my business address is Two Urban Center, 4890 West Kennedy Boulevard, Suite 600, Tampa, Florida, 33609.

Q: Where are you employed and in what position?

A: I am employed by Calpine Eastern Corporation as a Regional Engineer.

Q: Please describe your duties with Calpine Corporation.

A: I am responsible for the technical aspects related to the development of power plant projects. These responsibilities include selection of the plant configuration, the preliminary plant layout, calculation of plant performance, and oversight of the environmental permitting process.

QUALIFICATIONS AND EXPERIENCE

Q: Please summarize your educational background and experience.

A: I received a Bachelor of Science degree in Mechanical Engineering from the University of Texas in Austin in 1981.

I also received a Masters of Science degree in Mechanical Engineering from the University of Michigan in 1982.

Q: Please summarize your experience in power plant design, engineering, construction, operations, permitting, and licensing.

A: I have approximately 18 years of experience in the electric power industry, working as an equipment engineer, analytical engineer, boiler engineer, thermal cycle systems engineer, engineering group manager, director of engineering and now Regional Engineer for Calpine Eastern Corporation. In those positions, I have gained a wide range of experience in electrical power plant design, engineering, construction, operations, permitting and licensing. As part of my job, I have assisted in the design of more than a dozen gas-fired electrical generating plants. Exhibit _______ (TSB-1) is my current resume'.

Q: Are you a member of any professional organizations?

A: I have been a member of the American Society of Mechanical Engineers for the past twelve years.

DIRECT TESTIMONY OF TED S. BALDWIN

SUMMARY AND PURPOSE OF TESTIMONY

Q: What is the purpose of your testimony?

A: I am testifying on behalf of Calpine Construction Finance Company, L.P. ("Calpine"), one of the joint applicants for the Commission's determination of need for the Osprey Energy Center (the "Osprey Project" or "Project"). I will describe the main design features of the Project, as well as the Project's operational reliability and flexibility. I also will describe the performance characteristics and environmental profile of the Project, and present the engineering, procurement, and construction schedule for the Project.

Q: What are your responsibilities with respect to the Osprey Project?

A: In my position as Regional Engineer for Calpine Eastern Corporation, I oversee the preliminary engineering effort and regulatory support activities associated with the Project.

Q: Please summarize the key features of the Project.

A: The Osprey Project is a state-of-the-art natural gas-fired combined cycle generation facility. The plant will have approximately 529 megawatts ("MW") of net generating capacity based on anticipated manufacturer's guarantees at average ambient site conditions. The Osprey Project's rated winter capacity will be approximately 578 MW and its rated summer capacity will be approximately 496 MW. The Osprey Project will have a high thermal efficiency with a projected heat rate of approximately 6800 British thermal units ("Btu") per kilowatt-hour ("kWh"), based on the Higher Heating Value ("HHV") of natural gas at ambient site conditions. The Project will utilize state-of-the-art dry low-NO_x combustion technology to minimize emissions of nitrogen oxides (NO_x). In addition, a selective catalytic reduction ("SCR") system will be used to further reduce NO_x emissions.

The Osprey Project will be a highly reliable power generation facility, with an estimated annual equivalent availability factor of approximately 94.5 percent. The operations and maintenance plan for the Project will be in accordance with the equipment manufacturer's recommended maintenance schedules.

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

A: Yes. I am sponsoring the following exhibits.

(TSB-1): Current resume' of Ted S. Baldwin.

(TSB-2): Osprey Energy Center, Project Profile.

(TSB-3): Osprey Energy Center, Site Plan.

(TSB-4): Osprey Energy Center, Proposed Plot Plan.

(TSB-5): Osprey Energy Center, Computer-Generated Perspective Rendition.

(TSB-6): Estimated Plant Performance and Emissions.

(TSB-7): Osprey Energy Center, Cycle Schematic Diagram.

(TSB-8): Summary of the Design Basis for the Project.

(TSB-9): Osprey Energy Center, Electrical One-Line Diagram.

(TSB-10): Preliminary Average Annual Water Balance for the Project.

(TSB-11): Preliminary Peak Month Daily Water Balance for the Project.

(TSB-12): EPC Schedule for the Project.

I am also sponsoring Tables II-2 and II-3 and Figures II-3 through II-10 and II-15 in Volume II of the Exhibits to the Joint Petition for Determination of Need filed with the Commission concurrently with this testimony, and the text that accompanies those tables and figures.

PROJECT DESCRIPTION AND ENGINEERING DESIGN

Q: Please describe the Osprey Project.

A: The Osprey Project is a state-of-the-art natural gas-fired combined cycle generation facility. The plant consists of two combustion turbine generators ("CTGs"), two heat recovery steam generators ("HRSGs") and one steam turbine generator ("STG"). The Project will use wet cooling towers to condense steam back to water for reuse in the HRSGs and STG. The plant will have approximately 529 MW of net generating capacity (based on anticipated manufacturer's guarantee) at average ambient site conditions. The average ambient conditions at the Project site are 74°F. and 80% relative humidity. A general profile of the Project is shown in Exhibit _____ (TSB-2).

The Project will also have a net output capability, without duct-firing or power augmentation, of 545 MW (nominal) at ISO temperature (59°F.) and relative humidity (60%) conditions.

The Project will utilize dry low-NO_x combustion technology to minimize emissions of NO_x. In addition, an SCR system will be used to further reduce NO_x emissions.

Q: Please describe the SCR system that will be used to reduce the Project's NO_x emissions.

A: The SCR system for the Project will consist of a catalyst and an ammonia injection grid located within the HRSG. When NO_x is exposed to ammonia in the presence of the catalyst, the NO_x is converted to elemental nitrogen and oxygen.

Q: Please give a brief description of the site for the Osprey Project.

A: The site for the Project consists of approximately 19.5 acres, situated approximately 1.5 miles southwest of downtown Auburndale, in Polk County. The site is a non-producing citrus grove and is currently unused. A detailed description of the Project site is presented in the testimony of Mr. Richard Zwolak, AICP, in support of the Project, and in the exhibits that he is sponsoring in support of the Project.

Q: Please summarize the general arrangement and layout of the Project on the site.

A: The general arrangement of the Project is shown on the Site Plan in Exhibit ____ (TSB-3). Exhibit ____ (TSB-4) shows a detailed layout of the main Project structures on the site, and Exhibit ____ (TSB-5) presents a computer-generated perspective rendition of the Project.

Q: Please describe the generating technology of the Osprey Project.

A: The Osprey Energy Center will have an expected net output capability, without duct-firing or power augmentation, of approximately 529 MW based on the anticipated manufacturer's guarantee at average ambient site conditions. As I previously noted, the power block will consist of two advanced technology Siemens-Westinghouse Model 501F CTGs, two matched HRSGs that include duct-firing capability, and one STG, which has the ability to utilize steam for power augmentation to increase output from the CTGs.

Q: **Please define the terms "duct-firing" and "power augmentation."**

A: Duct-firing is a process whereby additional gas burners are placed within the HRSGs to increase the gas temperature and generate more steam, thus increasing power generation from the STG. Power augmentation refers to a process in which steam from the HRSGs is injected into the gas turbines for the purpose of increasing mass flow through the CTGs, thereby increasing the electrical power output from the CTGs.

Q: **What will the peak generating capacity of the Osprey Project be?**

A: Without duct-firing and power augmentation, the Osprey Project's rated winter capacity will be approximately 578 MW and its rated summer capacity will be approximately 496 MW. With duct-firing and power augmentation, the Project's winter capacity will be approximately 666 MW and its summer capacity will be approximately 575 MW.

Q: **What are the Osprey Project's expected heat rate and thermal**

efficiency?

A: The Project is projected to have a heat rate of approximately 6,800 Btu per kWh, based on the HHV of natural gas at average ambient site conditions, reflecting a net thermal efficiency of approximately 50.2 percent.

Q: Please describe the performance characteristics of the Osprey Project.

A: The performance characteristics of the generating facility are summarized in the Plant Performance Table, Exhibit _______ (TSB-6). This table presents facility generating output and emissions data for the Project at various expected ambient site conditions, at full and part load operation.

Q: Please describe the power generation cycle for the Project.

A: The power generation cycle of the Project is depicted on the overall cycle schematic diagram for the Project on Exhibit ____ (TSB-7). In brief, natural gas is burned in the CTG where the expanding combustion gases turn the CTG's shaft to produce electricity; and exhaust gases exit the CTG and enter the HRSG at approximately 1100°F. Two HRSGs, one per CTG, are used to recover heat from the exhaust gases by producing steam at three different pressure levels. The steam produced in the HRSGs is then expanded through a single STG to produce additional electrical power. The successive uses of thermal energy, first in the CTGs and second in the HRSGs and STG, to produce electricity is why this generating technology is called "combined cycle."

Q: Please describe the design basis for the Project.

A: The design basis for the Project is summarized in Exhibit ____ (TSB-8). The description contained in Exhibit ______ (TSB-8) is accurate and is hereby incorporated by reference into my testimony.

Q: Please describe the basic electrical characteristics of the Osprey Project.

A: The basic electrical characteristics of the Project are set forth in the Project's electrical one-line diagram, Exhibit _____, (TSB-9). In brief, electrical power is produced at 18 kilovolts (kV) in the CTGs and 16 kV in the STG. Each generator is connected to a transformer which steps up the electrical voltage to 230 kV, which is the operating voltage of the Tampa Electric Company ("TECO") transmission system in the vicinity of the Osprey Project. Electricity is delivered to the transmission system through the Recker high voltage substation owned by TECO. This substation is an existing substation that will be expanded to accommodate the interconnection of the Project.

Q: Please describe the projected fuel use for the Project.

A: At full load, the Project will use approximately 86 million standard cubic feet of natural gas per day at annual average site conditions.

Q: Please summarize the start-up and emergency power supplies for the Project.

A: The Project will obtain station service and start-up power from Tampa Electric Company in order to maintain normal plant auxiliary loads during periods in which the facility is off-line and to accelerate the CTGs to a self-sustaining operating speed during start-up. In the event of a loss of the transmission system, emergency power for critical components necessary for safe shutdown of the plant will be provided from a stationary battery system. The plant is also equipped with emergency diesel generators to keep the battery system charged and to provide supplemental power to the plant for other loads that are not critical. The plant's battery system and emergency diesel generators will be capable of providing sufficient power for safe shutdown of each unit and to keep certain prioritized auxiliaries operating, but will not be capable of restarting the units.

DIRECT TESTIMONY OF TED S. BALDWIN

Q: Please give a brief description of the control systems for the Osprey Project.

A: The Project is controlled by a distributed control system ("DCS"). A DCS is a fiber optic cable network that runs throughout the plant that picks up control input signals such as pressure, temperature, or flow, delivers the signals to the central control computer and then distributes control output signals such as the opening or closing of a valve or the starting and stopping of a motor. The control system is designed to provide full automation of the unit. The gas turbine sequencer allows the operator to start and stop the gas turbines automatically. Operator stations are designed to allow a graphical, intuitive navigation through the plant processes from a central control room.

OPERATIONAL RELIABILITY

Q: Please discuss the operational reliability of the Osprey Project.

A: The Osprey Project will have a high degree of reliability similar to other state-of-the-art combined cycle generating facilities.

Reliability is often measured in terms of the percentage of hours a unit is available to produce electricity within a specified period of time, usually one year. The Osprey

Project is expected to achieve an annual equivalent availability factor of 94.5 percent. This factor will vary depending on the planned maintenance activities in a given year, the forced outage rate, the need to take the CTGs off-line to clean compressor blades, and the need to perform occasional minor maintenance.

Q: What are the expected forced outage and maintenance outage rates for the Osprey Project?

A: The forced outage rate for the plant is expected to average approximately two percent per year.

The maintenance (also known as planned) outage rate for the plant is expected to average 3.5 percent per year, but the actual rate will vary from year to year in accordance with the vendor's recommended maintenance cycle for the CTGs. The Siemens-Westinghouse Model 501F turbines have an 8,000 hour maintenance cycle. A minor inspection, referred to as a combustor inspection, will be conducted at the end of each 8,000 hours of operation. A slightly more detailed inspection, referred to as a hot gas inspection, along with the combustor inspection, will be conducted at the end of 24,000 hours of operation. A major inspection will be conducted at 48,000 hours of operation. This cycle will be repeated for the life of the equipment. Combustor and hot gas inspections take approximately 7 days and 14 days respectively, and a major inspection takes approximately 21 days.

Q: Who will operate the Osprey Project?

A: The Osprey Project will be operated either by an operating subsidiary of Calpine or by a subcontractor engaged for that purpose by Calpine.

Q: Please describe any special design features or other considerations that are relevant to the Osprey Project's operational reliability.

A: The Osprey Project will be constructed utilizing the most advanced CTG design with extensive operating experience. The building configuration and balance of plant equipment will be typical of designs used throughout the industry for combined cycle plants. Use of such standard equipment offers the highest possible reliability.

<u>ENVIRONMENTAL PROFILE</u>

Q: Please summarize the environmental profile of the Osprey Project.

A: The Project will be fueled by natural gas. The Project has been designed with careful consideration of environmental issues and will be one of the cleanest power plants in Florida and in the United States. It will utilize dry low-NO_x combustion technology and an SCR system to minimize NO_x emissions. The Project's emissions of critical pollutants are projected to be approximately as follows (based on an average ambient conditions of 74°F., 80% relative humidity, with both CTGs operating at 100% load, and without power augmentation or duct-firing):

Sulfur Dioxide: negligible, less than 19.8 lbs. per hour (less than 87 tons per year)

Nitrogen Oxides: 3.5 parts per million dry volume at 15% oxygen, or 46.3 lbs. per hour (203 tons per year)

Volatile Organic Compounds: 10.4 lbs. per hour (46 tons per year)

Particulate Matter: 40.1 lbs. per hour (176 tons per year) as PM_{10}

Carbon Monoxide: 10 parts per million dry volume at 15% oxygen, 82 lbs. per hour (359 tons per year)

Operation of the Project is likely to result in measurable reductions in emissions of SO_2, CO_2, NO_x, and other air pollutants in Peninsular Florida, due to the Project's displacement of generation from: (a) units that burn fuels that produce more pollution than is produced by the natural gas fuel used in the Project, (b) less efficient units, and (c) units that do not include the types of pollution controls being utilized by the Project.

Q: Please summarize the projected water requirements and water supply plan for the Osprey Energy Center Project.

A: The Project will require approximately 3.55 million gallons per day ("MGD") of water calculated on an annual average basis. At peak conditions with power augmentation and duct-firing for six hours per day, the Project will require approximately 4.79 MGD of water.

The Osprey Project will utilize a combination of reclaimed water and ground water for its process and makeup water supply. Reclaimed water will be supplied from the City of Auburndale's Allred Wastewater Treatment Plant. The Project will require the construction of reclaimed water pipelines to connect with the City of Auburndale's wastewater treatment facility. The pipelines to the Allred wastewater treatment facilities will be approximately one mile in length and will be constructed in existing public rights-of-way. Additionally, other minor pipeline modifications will be made to enhance discharge capability. The reclaimed water supply and return pipelines to Allred will run along the north Recker

Highway right-of-way to the Osprey Project site boundary. The City of Auburndale will obtain the necessary permits for the water and wastewater pipelines. The remainder of the Osprey Project's water supply will be provided by new on-site wells withdrawing water from the Upper Floridan aquifer.

The preliminary water balance for the Project at average conditions is shown in Exhibit ________ (TSB-10), and the preliminary water balance for peak month~~ly~~ conditions is shown in Exhibit __________ (TSB-11).

PROJECT SCHEDULE

Q: Who will be the engineering, procurement, and construction contractor for the Project?

A: Calpine Corporation's construction management group will manage the engineering and construction of the Osprey Project. Calpine Corporation's construction management group will specify and procure the major equipment for the Osprey Project including the CTGs, HRSGs, and the STG. Parsons Energy and Chemical Group will perform the detailed engineering for the Project. Calpine Corporation's construction management group will competitively bid the construction of the Osprey Project to qualified general contractors with experience in the power industry, such as H.B. Zachary or The Industrial Company.

DIRECT TESTIMONY OF TED S. BALDWIN

Q: Please describe the engineering, procurement, and construction schedule for the Project.

A: The engineering, procurement, and construction schedule (the "EPC schedule"), Exhibit ____ (TSB-12), provides for the Project to be designed and brought into commercial service -- i.e., "on-line" -- by the second quarter of 2003. Preliminary engineering design has already begun and detailed engineering will begin in February 2001. The general contractor for construction will be selected in the first quarter of 2001. The Project schedule provides for approximately 24 months from Project release to commercial operation.

Q: What is the current status of the engineering design work for the Osprey Project?

A: Conceptual engineering is complete. A site plan, plot plan, process flow diagram, electrical one-line diagram, water balance, capital cost estimate, and operation and maintenance estimate are also complete.

Q: Does this conclude your direct testimony?

A: Yes, it does.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In Re: Joint Petition for Determination of Need for the Osprey Energy Center in Polk County by Seminole Electric Cooperative, Inc. and Calpine Construction Finance Company, L.P.	)	DOCKET NO. ____________

EXHIBITS

OF

TED S. BALDWIN

ON BEHALF OF

CALPINE CONSTRUCTION FINANCE COMPANY, L.P.

TED S. BALDWIN
Calpine Corporation
Two Urban Center
4890 W. Kennedy Blvd., Suite 600
Tampa, FL 33609

JOB EXPERIENCE:

REGIONAL ENGINEER, Calpine Corporation, Tampa, FL, May 2000 to present.

- Responsible for technical support of all business development activities in the Southeastern United States. Project locations include Florida, Alabama, Mississippi, and Kentucky.

  Tasks managed include due diligence on existing facilities, conceptualization of project technical configuration, preparation of project heat balances, site selection and site development (including environmental permits), preparation of capital cost estimates, participation in the negotiation of power purchase agreements and tolling agreements, development and negotiation of engineering and construction contracts, review of fuel supply contracts and other project documents, and interface with financing parties regarding technical aspects of the projects.

DIRECTOR OF ENGINEERING AND CONSTRUCTION, Nations Energy Corporation (Independent Power Subsidiary of Tucson Electric Power), Winter Park, Fl., May 1995 to present.

- Involved in the startup of a new energy development company. Responsibilities include managing all technical aspects of developing domestic and international energy projects, including acquisitions and greenfield/brownfield projects. Successfully closed two projects and carried two other projects through advanced stages of development with closings expected in 1999 and 2000.

  Tasks managed include due diligence on existing facilities, conceptualization of project technical configuration, site selection and site development (including environmental permits), preparation of capital cost estimates, preparation of operation and maintenance (O&M) estimates, participation in the negotiation of power purchase agreements and tolling agreements, development and negotiation of engineer, procurement, and construction (EPC) contracts and O&M agreements, review of fuel supply contracts and other project documents, and interface with financing parties regarding technical aspects of the projects. Also manage the implementation of one international EPC contract by providing direction to project manager directly responsible for the project.

  Country involvement includes U.S.A. (Colorado, Florida, and Louisiana), Mexico, Panama, Honduras, Netherlands Antilles, and Czech Republic. Fuel technologies include gas, pulverized coal, waste coal, biomass, diesel, residual oil, and refinery byproducts such as refinery gas and asphalt. Projects often involve the integration of existing facilities with new facilities and the supply of power, steam, and other utilities to industrial complexes such as refineries and breweries.

APPLICATION ENGINEERING MANAGER, Power Generation Business Unit, Westinghouse Electric Corp., Orlando, Fl., April 1992-April 1995.

- Managed a multi-disciplined group of twenty-three engineers and technicians including thermal design, mechanical design, controls, and electrical engineers. The group was responsible for the technical content of bids and the technical negotiation of all new construction orders within the business unit, including combustion turbine and steam turbine equipment, extended scope thermal island (combined cycle and conventional steam), and extended scope turnkey (simple cycle and combined cycle) projects. Annual sales in 1994 significantly in excess of one billion dollars. Responsible for technical negotiation of EPC contracts and risk management of all technical related warranties including plant performance, emissions, availability, reliability, etc. Oversaw transformation of organization into regional business teams with application engineering personnel stationed at four different locations throughout the world.

THERMAL CYCLE SYSTEM GROUP MANAGER, Power Generation Projects Division, Westinghouse Electric Corp., Orlando, Fl., April 1990-March 1992.

- Responsible for the implementation of combined cycle power projects from contract signing to completion of plant performance testing. Managed a group of ten engineers and technicians responsible for thermal cycle design, preparation of plant mass and material balances, and specification/evaluation of major thermal equipment (heat recovery steam generator, steam turbine, condenser, deaerator, cooling tower, auxiliary boiler, etc.) within the power plant. The group was also responsible for performance testing of the power plant after commissioning.

THERMAL CYCLE SYSTEMS ENGINEER, Power Generation Projects Division, Westinghouse Electric Corp., Orlando, Fl., May 1987-March 1990.

- Responsible for application support and implementation support of combined cycle power projects, mostly in the domestic market. Prepared preliminary and final cycle design, final plant mass and material balances, major equipment specifications for heat recovery steam generators, condensers, deaerators, etc. Participated in the evaluation and vendor negotiations for these pieces of equipment.

BOILER ENGINEER, Machinery Technology Division, Westinghouse Electric Corp., Pittsburgh, Pa., December 1985-April 1987.

- Provided thermal design engineering support to the U.S. Navy in the field of marine propulsion boilers.

EQUIPMENT ENGINEER/ANALYTICAL ENGINEER, Machinery Division/Furnace Division, The M.W. Kellogg Company, Houston, Texas, June 1982-November 1985.

- Responsible for preparation of equipment specifications, evaluation of vendors' bids, requisition preparation, technical follow-up, drawing review, and performance testing on major power generation equipment items including package boilers, gas turbine waste heat recovery units, and associated auxiliaries.

EDUCATION:

Masters of Science in Mechanical Engineering, 1982. The University of Michigan, Ann Arbor. Graduate Fellowship Program. Curriculum emphasis in the thermal sciences.

Bachelor of Science in Mechanical Engineering, 1981. The University of Texas, Austin. Scholarship Program.

TABLE 2

OSPREY ENERGY CENTER
PROJECT PROFILE

Expected Plant Capacity:

a.	Average ambient rating (74°F, 80% R.H.):	529 MW
b.	Summer (95°F, 80% R.H.):	496 MW
	With Duct-firing & Power Augmentation:	575 MW
c.	Winter (32°F, 60% R.H.):	578 MW
	With Duct-firing & Power Augmentation:	666 MW
d.	ISO (59°F, 60% R.H.):	545 MW

Project Energy Production: Approximately 4,300,000 MWH/year (not including duct-firing or power augmentation)

Technology Type: Two Siemens-Westinghouse 501F advanced firing temperature technology combustion turbines, two heat recovery steam generators, and one steam turbine generator in combined cycle configuration

Anticipated Construction Schedule:

a.	Engineering release date:	February 2001
b.	Construction mobilization date:	June 2001
c.	Commercial in-service date:	2nd quarter 2003

Fuel Use: Approximately 86 million Standard Cubic Feet of natural gas/day, annual average conditions (74°F, 80% R.H.), full load

Air Pollution Control Strategy: Dry low-NOx burners and SCR

Cooling Method: Wet Cooling Tower

Total Site Area: 19.5 acres (approximate)

Construction Status: Planned

Certification Status: Need Determination Petition and Site Certification Application filed.

Status with Federal Agencies: FERC has issued its order granting Calpine market-based rate authority.

TABLE 2

OSPREY ENERGY CENTER
PROJECT PROFILE
(CONTINUED)

Projected Unit Performance Data:

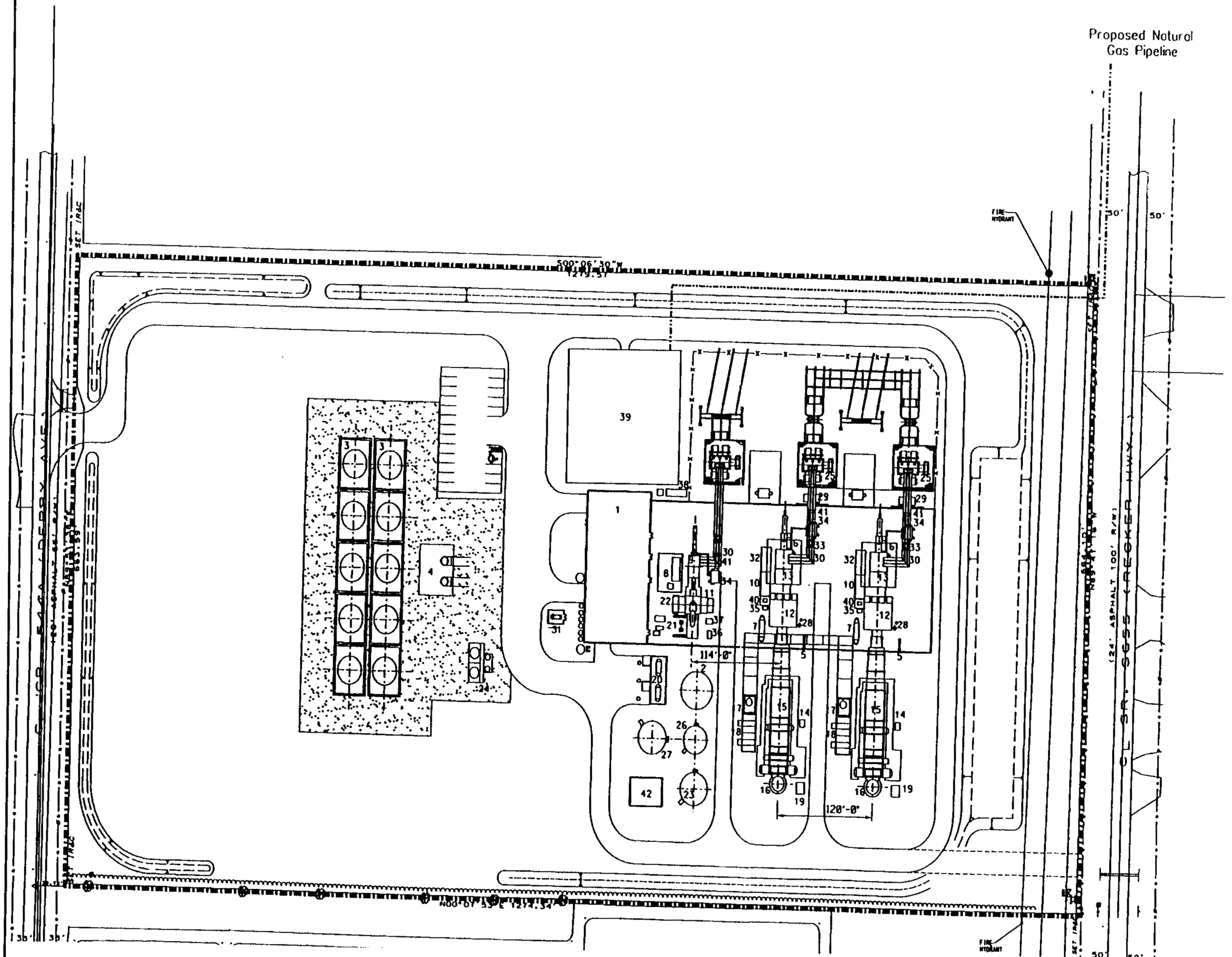
Planned Outage Factor (POF):	3.5%
Forced Outage Factor (FOF):	2.0%
Equivalent Availability Factor (EAF):	94.5%
Estimated Annual Average Capacity Factor (%):	91.0%

Average Net Operating Heat Rate (ANOHR): 6800 Btu/kWh (HHV) (74°F, 80°R.H.) expected

Project Unit Financial Data (per Calpine Corporation):

Book Life (years):	35 years
Direct Construction Cost:	Approx. $194.8 million
AFUDC Amount:	Not applicable
Escalation ($/kW):	Not applicable
Fixed O&M ($/kW per year):	Proprietary
Variable O&M (4/MWH):	Proprietary
K-Factor:	Not applicable
Project Life:	35 years

Expected Plant Air Emissions:	NO_x: 3.5 ppmvd @15% O_2 SO_2: 20.8 lbs/hour CO: 10 ppm
New Transmission Lines Required:	None
Gas Pipeline Required:	None
Water Requirements: **(Including Reclaimed Water)**	Approx. 4.79 MGD, summer peak Conditions (95°F, 80 R.H.), (with power augmentation and duct-firing) Approx. 3.55 MGD average (74°F, 80 R.H.), (without power augmentation or duct-firing)
Wastewater Discharge:	Approx. 1.26 MGD. summer peak conditions (with power augmentation and duct-firing) Approx. 0.62 MGD, average conditions (3.9 cycles of concentration without power augmentation and duct-firing)



Legend

1. ADMINISTRATION AND MAINTENANCE BUILDING
2. SERVICE WATER TANK
3. COOLING TOWER
4. CIRCULATING WATER PUMPS
5. FUEL GAS HEATER
6. COMBUSTION TURBINE AIR INLET FILTER
7. KETTLE BOILER
8. LUBE OIL SKID
9. ST GENERATOR
10. CT MECHANICAL PACKAGE
11. STEAM TURBINE
12. COMBUSTION TURBINE
13. CT GENERATOR
14. AMMONIA INJECTION SKID
15. HEAT RECOVERY STEAM GENERATOR
16. HRSG STACK
17. HRSG BLOWDOWN TANK
18. BOILER FEED PUMP HOUSE
19. CEMS
20. AMMONIA STORAGE TANKS
21. CONDENSATE PUMPS
22. CONDENSER
23. DEMINERALIZED WATER STORAGE TANK
24. WET SURFACE AIR COOLER
25. GENERATOR STEP-UP TRANSFORMER
26. WASTEWATER TANK
27. RAW WATER STORAGE TANK
28. FUEL GAS SCRUBBER
29. UNIT AUX. TRANSFORMER
30. ISO-PHASE BUS DUCT
31. STANDBY GENERATOR
32. ELECTRICAL EQUIPMENT PACKAGE
33. GENERATOR VT & SURGE CUBICLE
34. GENERATOR EXCITATION SKID
35. COMPRESSOR WATER WASH SKID
36. STEAM JET AIR EJECTORS
37. GLAND STEAM CONDENSER
38. OIL/WATER SEPARATOR
39. GAS METER BUILDING
40. HYDRAULIC SKID
41. EXCITATION TRANSFORMER
42. CENTRAL PUMP HOUSE

Osprey Energy Center
Calpine
Witness: Ted S. Baldwin
Exhibit ______ (TSB-3)
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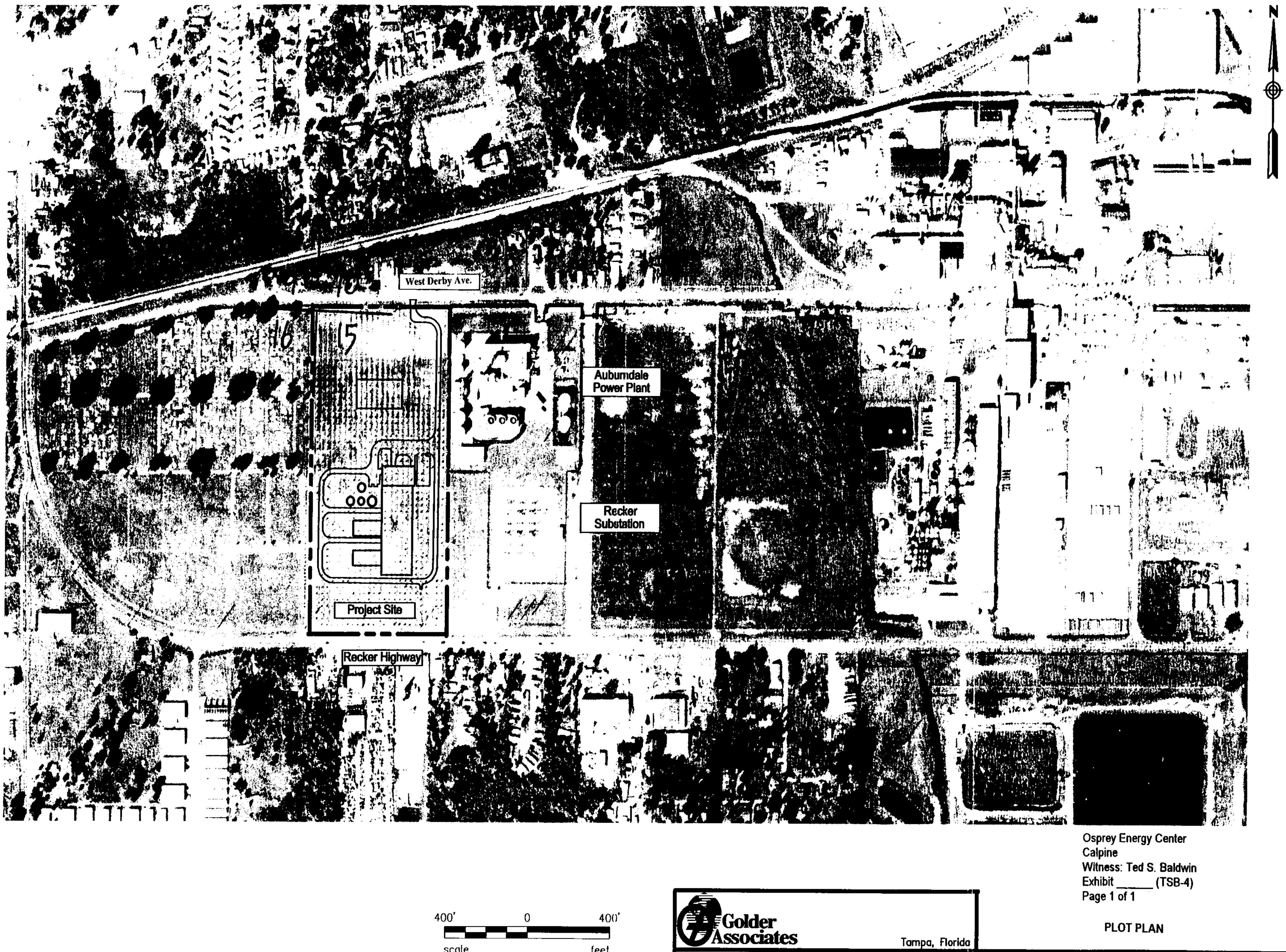
Golder Associates
Tampa, Florida

Site Plan

Client / Project
Calpine Construction Finance Company, L.P.
Osprey Energy Center

CAD BY: CDT	SCALE: 1"=120'	Job No. 993-9570	
CHK BY: HGB	DATE: 08/11/00	FIGURE Revision 1	3.2.0-2
REV BY: –	FILE No.: fig3_2_0-2.dwg		



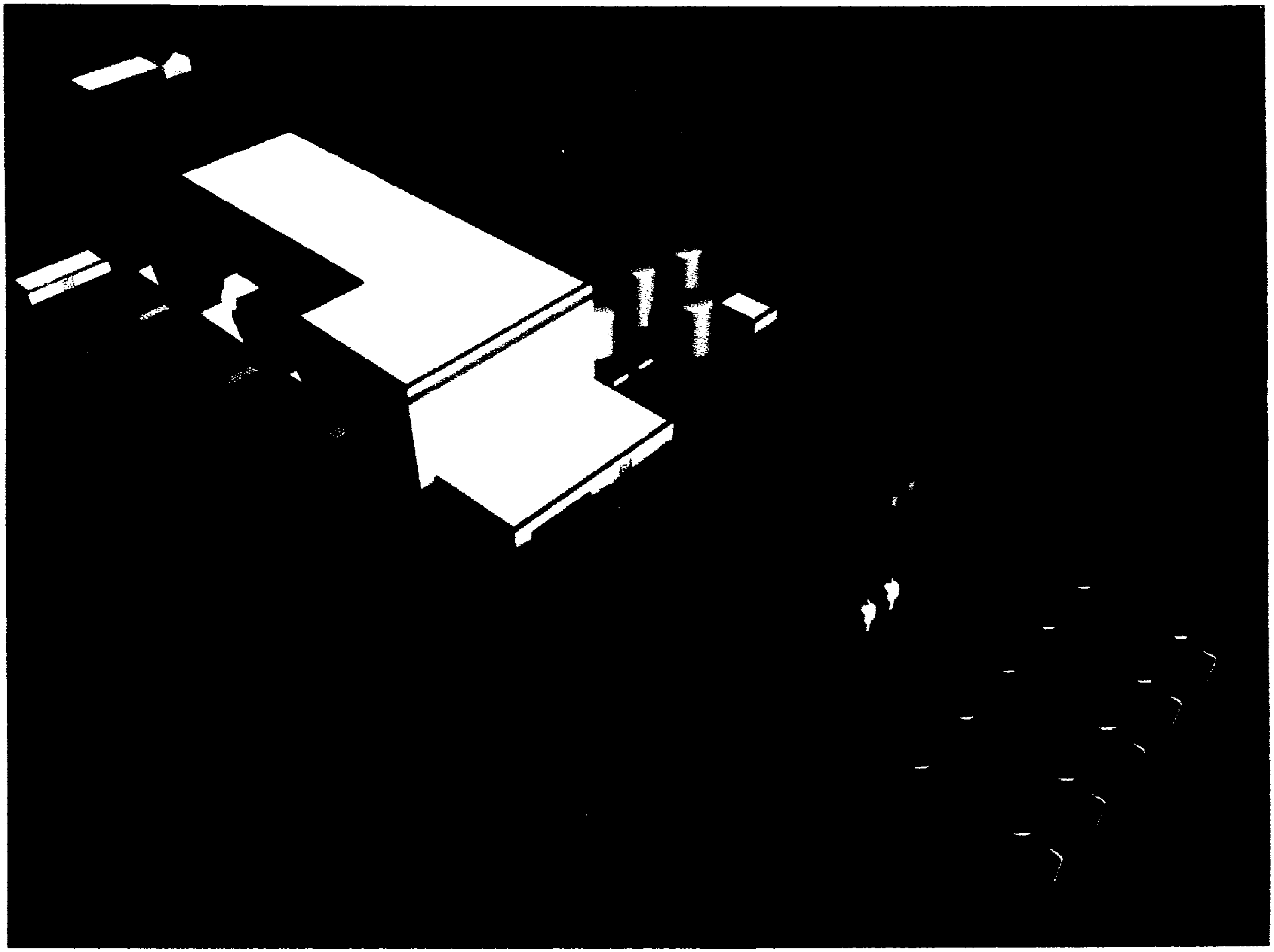
Osprey Energy Center
Calpine
Witness: Ted S. Baldwin
Exhibit ______ (TSB-4)
Page 1 of 1

PLOT PLAN

Golder Associates
Tampa, Florida

Client / Project
Calpine Construction Finance Copany, L.P.
Osprey Energy Center

CAD BY:	CDT	SCALE:	1"=400'	Job No.	993-9570
CHK BY:	RAZ	DATE:	03/02/00	FIGURE	
REV BY:	–	FILE No.:	plot-plan.dwg		



Osprey Energy Center
Calpine
Witness: Ted S. Baldwin
Exhibit _______ (TSB-5)
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Golder Associates

Tampa, Florida

PERSPECTIVE RENDITION

Client / Project
Calpine Construction Finance Company, L.P.
Osprey Energy Center

CAD BY: CDT	SCALE: NTS	Job No. 993-9570
CHK BY: RAZ	DATE: 03/04/00	FIGURE
REV BY: -	FILE No.: fig1_3_3-1.dwg	

TABLE 2
OSPREY ENERGY CENTER
Estimated Plant Performance and Emissions Data

Percent Load		100%	100%	100%	100%	70%	70%	70%	70%	60%	60%	60%	60%	100%
Ambient Temperature	F	95	74	59	32	95	74	59	32	95	74	59	32	95
Ambient Relative Humidity	%	80%	80%	60%	60%	80%	80%	60%	60%	80%	80%	60%	60%	80%
Gas Turbine Power	MW	324	347	362	390	222	240	253	272	190	205	216	233	357
Steam Turbine Power	MW	185	195	197	203	145	153	152	154	135	143	149	148	233
Net Cycle Power	MW	496	529	545	578	358	383	395	416	317	339	356	371	575
Net Cycle LHV Heat Rate	BTU/kW-hr	6,187	6,122	6,125	6,137	6,497	6,430	6,359	6,373	6,599	6,529	6,478	6,457	6,576
Net Cycle LHV Efficiency	%	55.2%	55.7%	55.7%	55.6%	52.5%	53.1%	53.7%	53.5%	51.7%	52.3%	52.7%	52.9%	51.9%
Net Cycle HHV Heat Rate	BTU/kW-hr	6,871	6,798	6,802	6,815	7,215	7,140	7,062	7,077	7,329	7,251	7,193	7,170	7,303
CTG fuel flow (lb/h)- total for two CTGs	lb/hr	146,325	154,237	159,099	168,918	110,864	117,346	119,634	126,212	99,806	105,621	109,911	114,296	155,858
CTG heat input, HHV basis (mmBtu/h)- total for two CTGs	MMBtu/hr	3,409	3,594	3,707	3,936	2,583	2,734	2,787	2,941	2,325	2,461	2,561	2,663	3,631
Duct burner fuel flow (lb/h)- total for two burners	lb/hr	0	0	0	0	0	0	0	0	0	0	0	0	24,308
Duct burner heat input, HHV basis (mmBtu/h)- two burners	MMBtu/hr	0	0	0	0	0	0	0	0	0	0	0	0	566
CTG exhaust gas flow (lb/h)- total for two CTGs (two duct burners when on)	lb/hr	6,630,800	6,973,469	7,218,232	7,578,580	5,692,996	5,888,867	6,028,774	6,258,506	5,081,836	5,240,757	5,354,272	5,539,920	6,655,108
CTG exhaust gas composition (% by volume)														
Nitrogen	%	72.64	73.47	74.37	74.82	72.93	73.82	74.63	75.07	72.93	73.77	74.56	75.04	68.31
Argon	%	0.91	0.92	0.93	0.94	0.92	0.09	0.94	0.94	0.92	0.93	0.94	0.94	0.86
Oxygen	%	12.13	12.28	12.51	12.53	13.00	13.11	13.26	13.26	12.99	12.97	13.07	13.15	9.85
Carbon dioxide	%	3.70	3.74	3.74	3.79	3.31	3.37	3.40	3.47	3.31	3.43	3.49	3.52	4.26
Water	%	10.62	9.59	8.44	7.92	9.85	8.77	7.77	7.26	9.86	8.90	7.94	7.36	16.73
NOx as NO2 (lb/h)- total for two stacks	lb/hr	44.1	46.3	48.6	51.5	34.2	35.4	36.7	38.9	30.4	32.0	33.5	34.8	55.0
based on ppmvd @ 15% O2	ppm	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
CO (lb/h)- total for two stacks	lb/hr	78	82	86	90	60	62	64	68	266	279	292	304	279
based on ppmvd @ 15% O2	ppm	10	10	10	10	10	10	10	10	50	50	50	50	29
VOC as CH4 (lb/h)- total for two stacks	lb/hr	9.9	10.4	10.9	11.5	14.1	14.7	15.3	16.0	12.7	13.3	14.0	14.5	24.8
based on ppmvd @ 15% O2	ppm	2.3	2.3	2.3	2.3	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.6
SO2 (lb/h)- total for two stacks	lb/hr	18.8	19.8	20.7	22.0	14.4	15.0	15.6	16.4	13.0	13.7	14.3	14.9	23.9
Particulates as PM10 (lb/h)- total for two stacks	lb/hr	38.0	40.1	42.2	44.5	32.1	33.4	34.6	36.1	28.7	29.8	30.9	32.1	45.6

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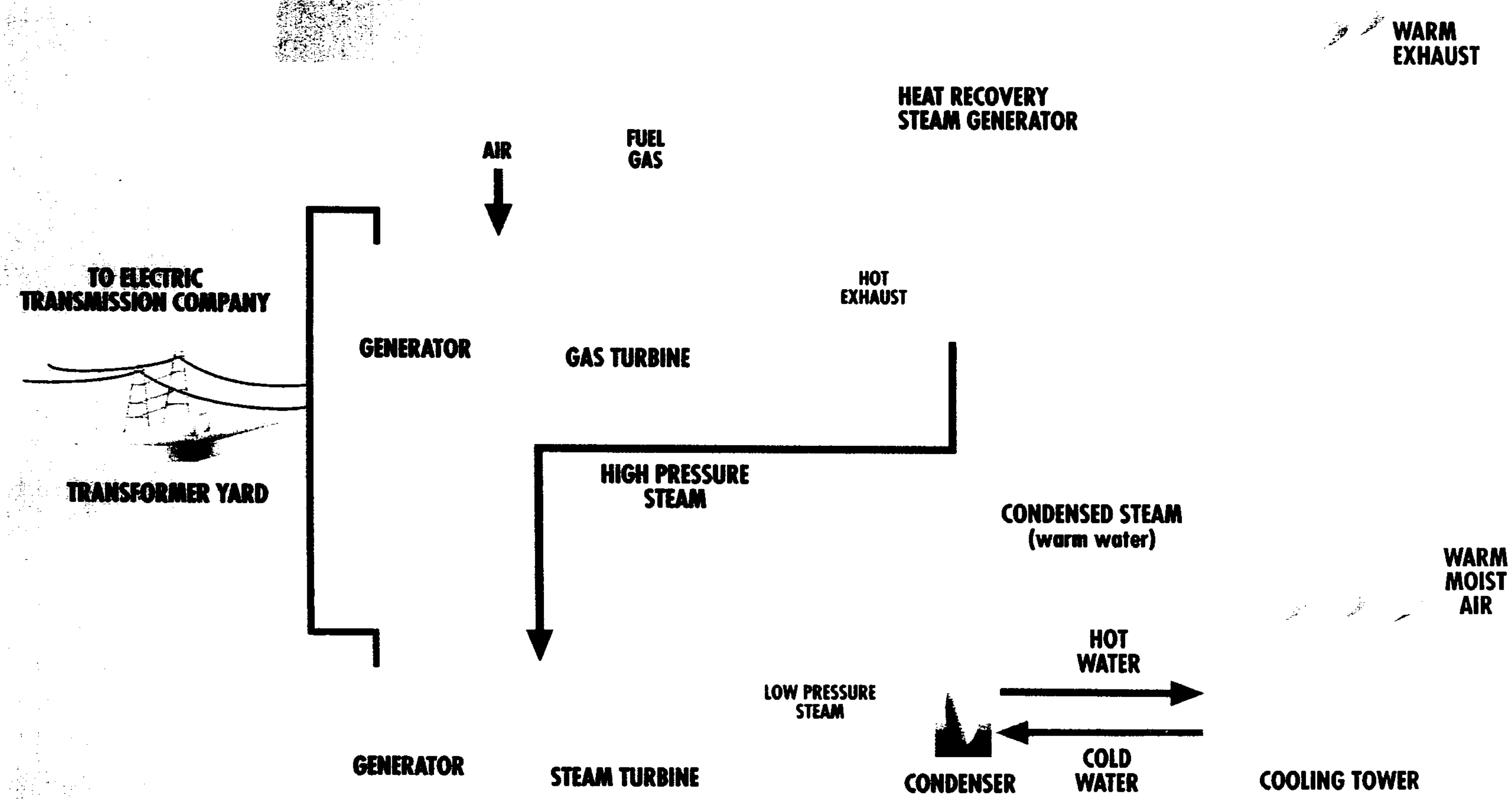
FIGURE 6
COMBINED-CYCLE GENERATION SCHEMATIC DIAGRAM



CALPINE EASTERN

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Exhibit ____ (TSB-7)
Page 1 of 1

OSPREY ENERGY CENTER

DESIGN BASIS

INTRODUCTION

The Osprey Project is a highly efficient combined cycle electric power plant that will be fueled by natural gas. The Project will be nominally rated to produce 545 MW at ISO temperature and relative humidity, and 529 MW at average ambient site conditions. This Design Basis describes the Project and its supporting systems.

PROJECT LOCATION

The Osprey Project site will be located in the City of Auburndale, in Polk County, Florida, on approximately 19.5 acres situated approximately 1.5 miles southwest of downtown Auburndale and approximately 37 miles east of Tampa Bay. The site is a non-producing citrus grove zoned "Light Industry" and is currently unused. Land uses adjacent to the site include the TECO Recker Substation and 230 kV transmission line; the existing Auburndale Power Plant, which is a 150 MW natural gas-fired (with oil backup fuel) cogeneration plant owned by Auburndale Power Partners; two small residential enclaves; a cemetery; and commercial and industrial businesses. Access to the site will be from West Derby Avenue, a two-lane county collector road.

OVERVIEW

The proposed Project will consist of two gas-fired advanced technology, dry low-NO_x combustion turbine generators ("CTGs") with the capability to use power augmentation to increase the CTGs' power output, two heat recovery steam generators (HRSGs) that include duct-firing capability to increase the steam generation capability of the HRSGs, and one steam turbine generator ("STG") rated for the full steam production capacity (including duct-firing) of the HRSGs. The CTGs will generate approximately 65 percent of the Project's output and the STG will generate approximately 35 percent of the Project's output. Thermal energy will be recovered from the hot combustion gases exiting the CTGs to generate steam in the HRSGs. Steam from the HRSGs will be expanded through an STG which will produce the remaining balance of the Project's output. This process of utilizing both the power generated in the combustion turbines as well as that generated by the STG is commonly referred to as "combined cycle" generation. To enhance power output during peak demand periods, the HRSGs are equipped with duct burners which burn additional natural gas inside the HRSGs to produce additional steam that is then used in the STG to produce additional power. Further peaking power can also be provided by extracting steam from the STG and injecting it into the CTGs. These two methods of providing peaking power will be utilized primarily during the summer months. Cooling water will be used in conjunction with cooling towers to condense steam back to water for reuse in the HRSGs. The

Project's water supply will be a combination of reclaimed water and well water.

The Project will emit nitrogen oxides (NO_x), carbon monoxide (CO), non-methane hydrocarbons, small quantities of particulate matter (PM_{10}), and sulfur oxides (SO_x). The Project will be designed to control NO_x using an advanced dry low-NO_x combustion system and a selective catalytic reduction (SCR) system. This represents state-of-the-art emissions control technology, capable of achieving approximately 3.5 ppmvd NO_x levels. Only trace amounts of SO_2 will be emitted when burning natural gas. CO and non-methane hydrocarbon emissions will be minimized through the use of good combustion practice.

PROJECT DESCRIPTION

Project Structures and Buildings

The Osprey Project will include the following structures and buildings:

- A common control room, warehouse and administration building which will contain a workshop, a maintenance area, and offices.
- Each HRSG will be located adjacent to its CTG and will connect to an approximate 135 foot high emission stack. There will be one stack for each unit.
- Mechanical induced draft evaporative cooling towers.
- Water storage tanks.
- An electrical switchyard.

Combustion Turbine Generators

The Project will employ Siemens-Westinghouse 501F industrial frame advanced technology CTGs equipped with dry low-NO_x combustors. The CTGs will be housed in an enclosure which provides thermal insulation, acoustical attenuation, and fire extinguishing media containment. The enclosure will allow access for routine inspections and maintenance.

Heat Recovery Steam Generators

One of the significant features of a combined cycle plant is the utilization of the hot exhaust gas from the CTGs to produce steam which, in turn, is expanded in a STG to drive an electric generator and produce electricity. The HRSGs are the key pieces of equipment necessary to the production of this steam. The HRSGs will be multiple-pressure, reheat units. The various pressure sections will each consist of economizer, evaporator and superheater sections. The HRSGs will also be equipped with a reheater to further improve cycle efficiency.

Steam Turbine

The STG will be a multiple admission, reheat, condensing turbine designed for sliding pressure operation. The high pressure portion of the STG receives high pressure superheated steam from the HRSG and then exhausts steam into the reheat section of the

HRSG. Reheated steam from the HRSG is supplied to the intermediate pressure turbine, and the intermediate pressure turbine exhausts into the low pressure turbine. The low pressure turbine receives low pressure superheated steam from the HRSG and exhausts steam into the condenser.

Stacks

CTG combustion gases will discharge through two approximate 19 foot diameter, 135 foot high carbon steel stacks. The stacks will be designed to minimize the potential for aerodynamic down wash of stack emissions.

Cooling System

After the steam passes through the STG, it is condensed in a shell and tube heat exchanger (surface condenser) utilizing cooling water from the cooling tower. Each condenser will include a shell, tubes, a water box, and hot well. Condensed water in the hot well is pumped back to the HRSG to begin the thermal cycle again.

Cooling water for the condensers will be provided from evaporative (wet) induced draft cooling towers. Fans at the top of the cooling tower maintain a draft within the cooling tower. The water will be cooled by evaporation as it falls through baffles from the top of the cooling tower to a basin at the bottom of the tower where it is again pumped back through the condenser. Cooling tower components will include a basin, fans, fan decks, drift eliminators, fill material (baffles), and other necessary components. Average water usage will be approximately 3.55 million gallons per day when operating at full load, but without duct-firing or power augmentation, at average site conditions. Maximum water usage will be approximately 4.79 million gallons per day when operating at 95° F, 80% relative humidity while using both power augmentation and duct-firing.

Fuel Supply and Storage Systems

Natural gas will be the primary fuel for the Project. The Project's gaseous fuel system will interconnect to the Gulfstream gas metering station located on the site. The gas fuel system will also include fuel gas heaters, meters, and an isolation system in accordance with governing engineering codes.

Condensate and Feedwater Systems

The condensate system will deliver de-aerated water from the condenser hotwell to the HRSG. The condensate system will also provide water to other Project subsystems. The feedwater system will provide feedwater to the economizer sections of the HRSG. The feedwater system will also supply water to interstage desuperheaters.

Demineralized Water System

The demineralizer plant will consist of a permanently installed demineralizer system to produce demineralized water for the Project from the raw water source. The product water from the demineralizer system will be stored in a demineralized water storage tank for use as steam cycle makeup water.

The tank will be constructed of lined carbon steel. Demineralizer system wastewater treatment will be done on-site and then discharged to the City of Auburndale's wastewater treatment plants.

Boiler Feedwater Treatment System

The boiler feedwater treatment system would likely consist of hydrazine (or a suitable substitute) for oxygen scavenging (injected into condensate system); phosphate for boiler water solids control (utilized in the HRSG steam drums); and neutralizing amine for pH control (fed into condensate).

Wastewater Treatment System

The process waste streams will be combined, collected, and disposed of separately or in combination, depending on the type of treatment required and the ultimate discharge point. Plant wastewater that could potentially contain small quantities of oil (including wastewater from the plant area washdown floor drains, equipment and sample drains) will be treated in an oil/water separator, from which the clean effluent may be recycled for use as cooling tower makeup. Oil and sludge collected in the oil/water separator will be disposed of off-site. Wastewater grab sample points will be provided in accordance with the requirements of all applicable permits.

Sanitary waste will be discharged to the local wastewater treatment plant for disposal. Approximately 2,880 gallons of sanitary waste will be generated per day.

HRSG blowdown will be collected in a dedicated sump and recycled to a small wastewater cooling tower before being discharged to the City of Auburndale's Allred Wastewater Treatment Plant. Cooling tower blowdown will also be routed to the Allred Wastewater Treatment Plant.

Spill prevention and control measures will include dikes around acid tanks and other chemical tanks. The dikes will be sized to contain a volume larger than that of the enclosed tank or tanks. Curbed enclosures will be provided for boiler feedwater treatment chemicals and water pretreatment chemicals.

Oil-filled transformers will be located in a sump. Storm water that collects in the sumps will drain to a common corner sump.

Compressed Air System

The compressed air system will be designed to provide dry, oil-free, control air for plant instrumentation, controls and maintenance activities.

The primary source of plant compressed air will be from permanently installed air compressors. The instrument air supply will be oil-filtered and dried. The system will also include a compressed air receiver.

The system will be complete with piping, valves, locally mounted instrumentation, and controls.

Fire Protection System

An on-site fire protection system will be provided for the plant. The water supply for the fire protection system will be stored on-site in either the raw water tank or cooling tower basin. A main underground fire header will be provided to serve strategically placed yard hydrants and sprinkler/deluge systems for the Project.

The fire water distribution system will incorporate sectionalizing valves so that a failure in any part of the system can be isolated while allowing the remainder of the system to function properly.

The fire protection system will also include:

- An extinguishing system for the gas turbine/generator set;
- A dry pipe, automatic sprinkler system to envelop, as required, oil piping and equipment associated with the steam turbine lubrication oil system;
- Wet pipe sprinkler systems for the turbine building and warehouse storage area; and
- A protective signaling system with main panel in the control room.

Control System

Each unit will have a state-of-the-art, integrated microprocessor-based control system for plant control, data acquisition, and data analysis. The plant control system will provide for startup, shutdown, and control of plant operation within limits and for protection of equipment.

Electric Power System

The electric output of each of the Project's generators will be connected to main step-up transformers. The output from the main step-up transformers will be connected to the Project's on-site switchyard.

Emissions Monitoring

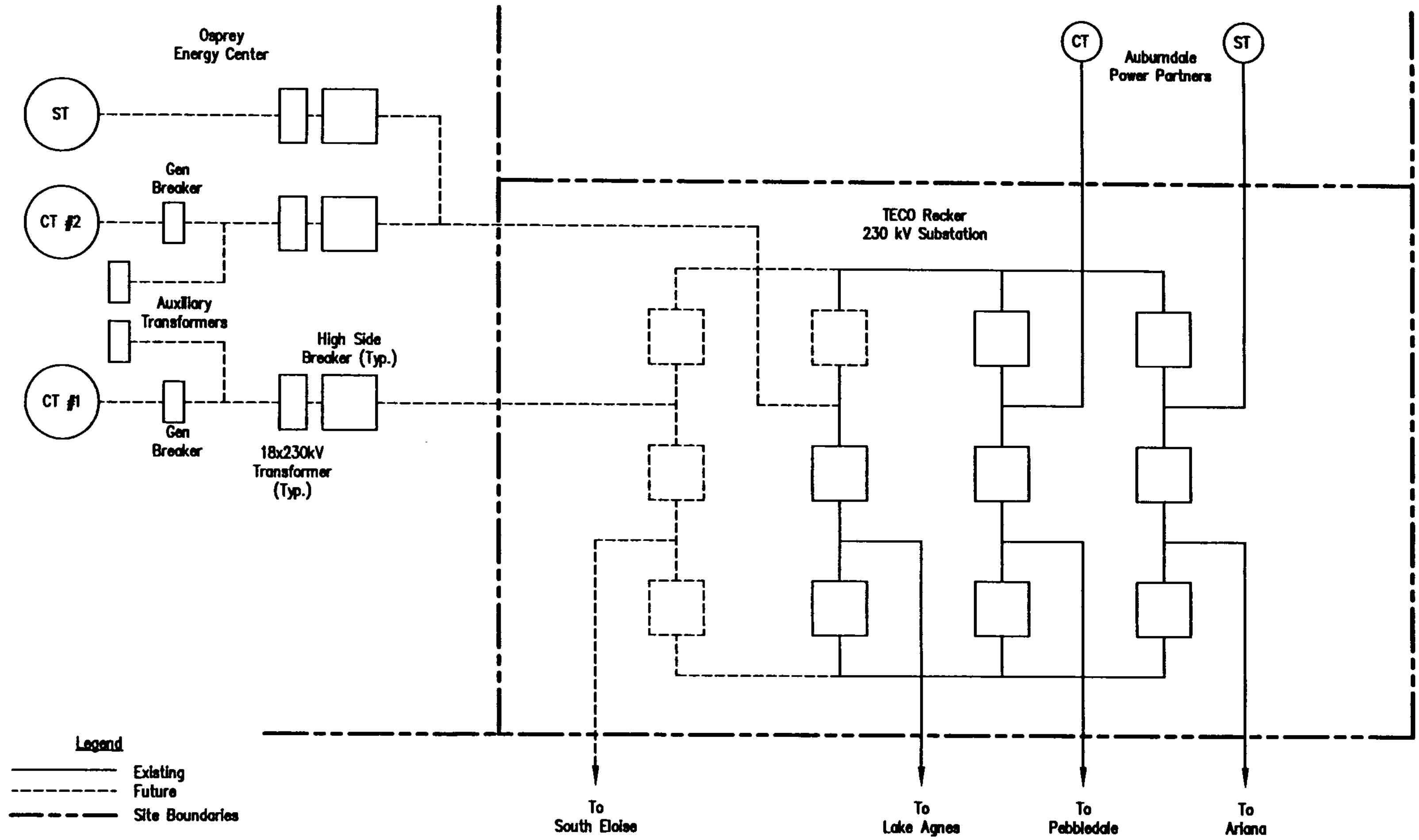
A continuous emissions monitoring system for airborne pollutants will be installed to provide monitoring and alarming of NO_x and CO concentrations in the HRSG exhaust systems. The emissions monitoring system will provide input signals to the microprocessor-based data acquisition system and will meet all the requirements of the Florida Department of Environmental Protection (FDEP) for monitoring and reporting.

Stormwater Drainage

A permanent stormwater management basin will be provided to collect stormwater from the Project. Stormwater will be collected by a system of drains and catch basins which will connect to underground piping and swales to provide a gravity drain system. The basin will be sized to allow collected sediment to settle out before it is discharged, as well as to ensure that peak runoff rates are not increased.

Associated Facilities

No linear facilities are being permitted in connection with the proposed Osprey Project. Natural gas will be provided to the Project from a natural gas pipeline and lateral to be constructed by Gulfstream.



Notes:
1. Switchyard breaker ratings are 2000 amp/40 Ka typical

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Exhibit ___ (TSB-9)
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Golder Associates

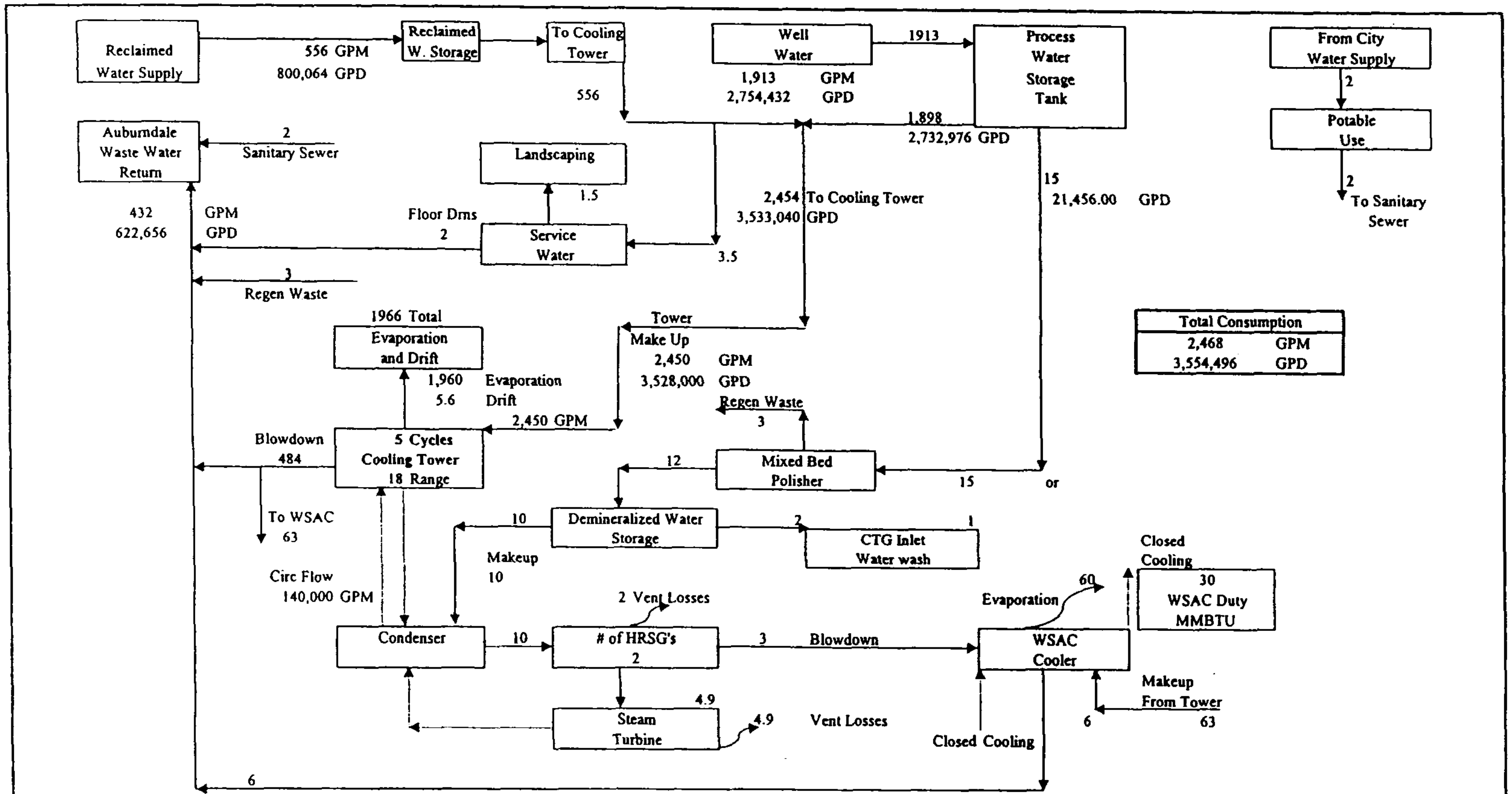
Tampa, Florida

Station One–Line Electrical Diagram

Client / Project

Calpine Construction Finance Company, L.P.
Osprey Energy Center

CAD BY:	CDT	SCALE:	NTS	Job No.	993–9570
CHK BY:	RAZ	DATE:	08/10/00	FIGURE	Revision 01
REV BY:	–	FILE No.:	fig3_1_0–3.dwg		3.1.0–3



Note: (1) All numbers are in gallons per minute (GPM) unless otherwise noted.
(2) GPD = gallons per day.
(3) Water use estimates are based on 5 cycles of concentration.
(4) Excludes duct-firing, fogging and power augmentation.

Osprey Energy Center
Calpine
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Exhibit ___ (TSB-10)
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Golder Associates

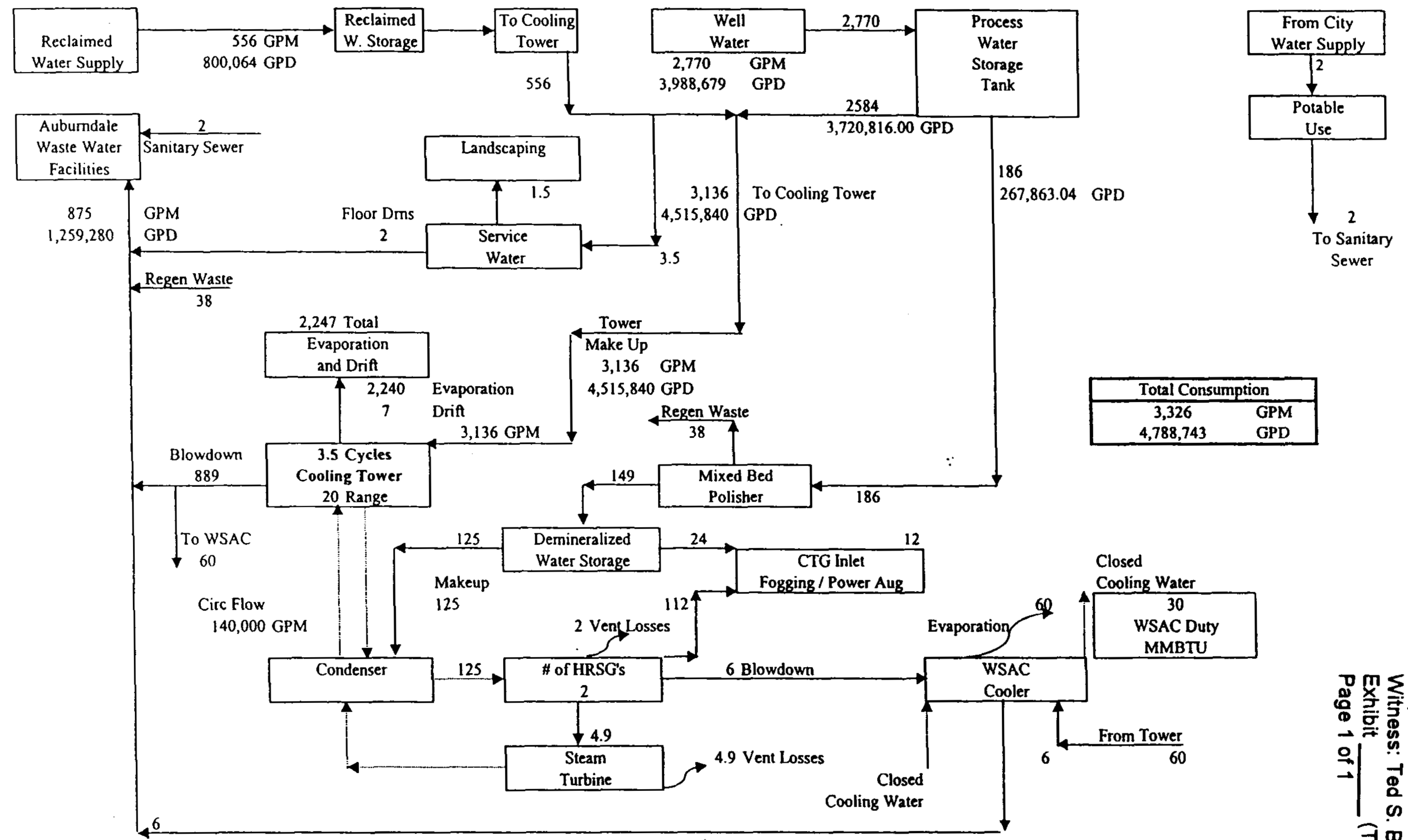
Tampa, Florida

Average Annual Daily Water Balance Diagram

Client / Project

Calpine Construction Finance Company, L.P.
Osprey Energy Center

CAD BY: CDT	SCALE: NTS	Job No. 993-9570
CHK BY: RAZ	DATE: 11/29/00	
REV BY: –	FILE No.: fig3_5_0-1.dwg	



Total Consumption	
3,326	GPM
4,788,743	GPD

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Exhibit ___ (TSB-11)
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Note: All numbers shown are in gallons per minute (GPM) unless otherwise noted.
GPD = gallons per day.
Water use estimates are based on 3.5 cycles of concentration.
Maximum water usage scenario reflects the use of duct firing, power augmentation and inlet fogging.

Golder Associates
Tampa, Florida

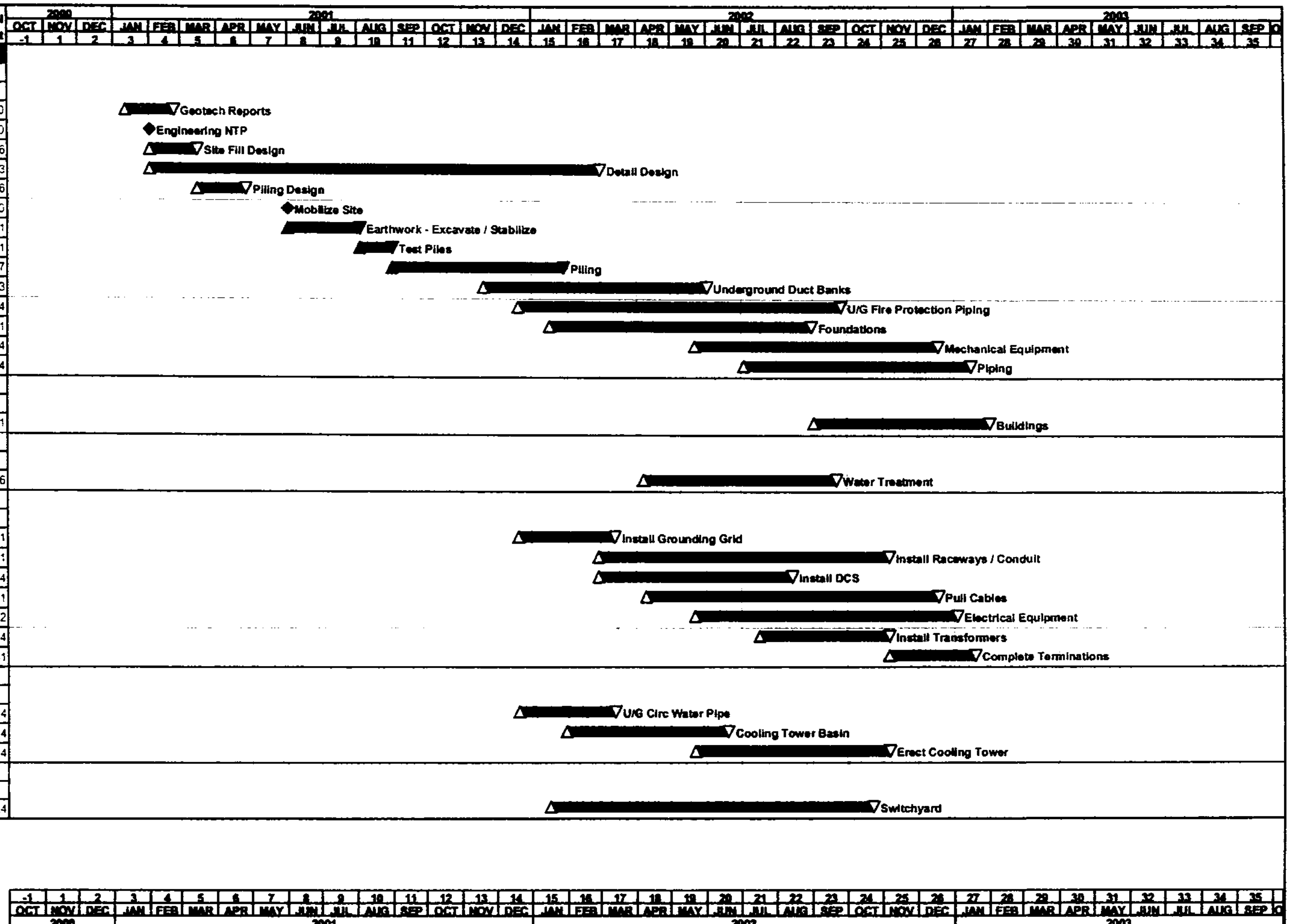
Peak Month Daily Water Balance Diagram

Client / Project
Calpine Construction Finance Company, L.P.
Osprey Energy Center

CAD BY:	CDT	SCALE:	NTS	Job No.	993-9570
CHK BY:	RAZ	DATE:	11/29/00		
REV BY:	–	FILE No.:	fig3_5_0-2.dwg		

OSPREY ENERGY CENTER
PRELIMINARY PROJECT SCHEDULE

Activity ID	Activity Description	Early Start	Early Finish	Orig Dur	Total Float
Balance of Plant					
Balance of Plant					
0900	Geotech Reports	11JAN01	21FEB01	30	0
1000	Engineering NTP	01FEB01*		0	0
1010	Site Fill Design	01FEB01	14MAR01	30	36
1030	Detail Design	01FEB01	27FEB02	280	393
1020	Piling Design	15MAR01	25APR01	30	36
1200	Mobilize Site	01JUN01*		0	0
1210	Earthwork - Excavate / Stabilize	01JUN01	02AUG01	45	111
1220	Test Piles	03AUG01	30AUG01	20	111
1230	Piling	31AUG01	27JAN02	150	157
1240	Underground Duct Banks	19NOV01	31MAY02	140	173
1280	U/G Fire Protection Piping	19DEC01	24SEP02	200	244
1250	Foundations	16JAN02	30AUG02	163	151
1260	Mechanical Equipment	22MAY02	17DEC02	150	164
1270	Piping	03JUL02	14JAN03	140	164
Buildings					
Balance of Plant					
1300	Buildings	02SEP02	31JAN03	110	151
Chemical / Water Treatment					
Balance of Plant					
1400	Water Treatment	08APR02	20SEP02	120	246
Instrument & Electrical					
Balance of Plant					
1500	Install Grounding Grid	19DEC01	12MAR02	60	151
1510	Install Raceways / Conduit	27FEB02	05NOV02	180	161
1520	Install DCS	27FEB02	13AUG02	120	214
1540	Pull Cables	10APR02	17DEC02	180	161
1530	Electrical Equipment	22MAY02	02JAN03	162	172
1560	Install Transformers	17JUL02	05NOV02	80	214
1550	Complete Terminations	06NOV02	17JAN03	53	161
Cooling Tower					
Balance of Plant					
1600	U/G Circ Water Pipe	19DEC01	12MAR02	60	214
1610	Cooling Tower Basin	30JAN02	18JUN02	100	214
1620	Erect Cooling Tower	22MAY02	05NOV02	120	214
Switchyard					
Balance of Plant					
1800	Switchyard	16JAN02	22OCT02	200	224



Start Date	01JAN99	Early Bar	OSPR
Finish Date	28MAR03	Progress Bar	CALPINE
Data Date	30JAN00	Critical Activity	OSPREY ENERGY PROJECT
Run Date	07MAR00 14:33		Calpine Preliminary Schedule

Sheet 1 of 3

Osprey Energy Center
Calpine
Witness: Ted S. Baldwin
Exhibit ____ (TSB-12)
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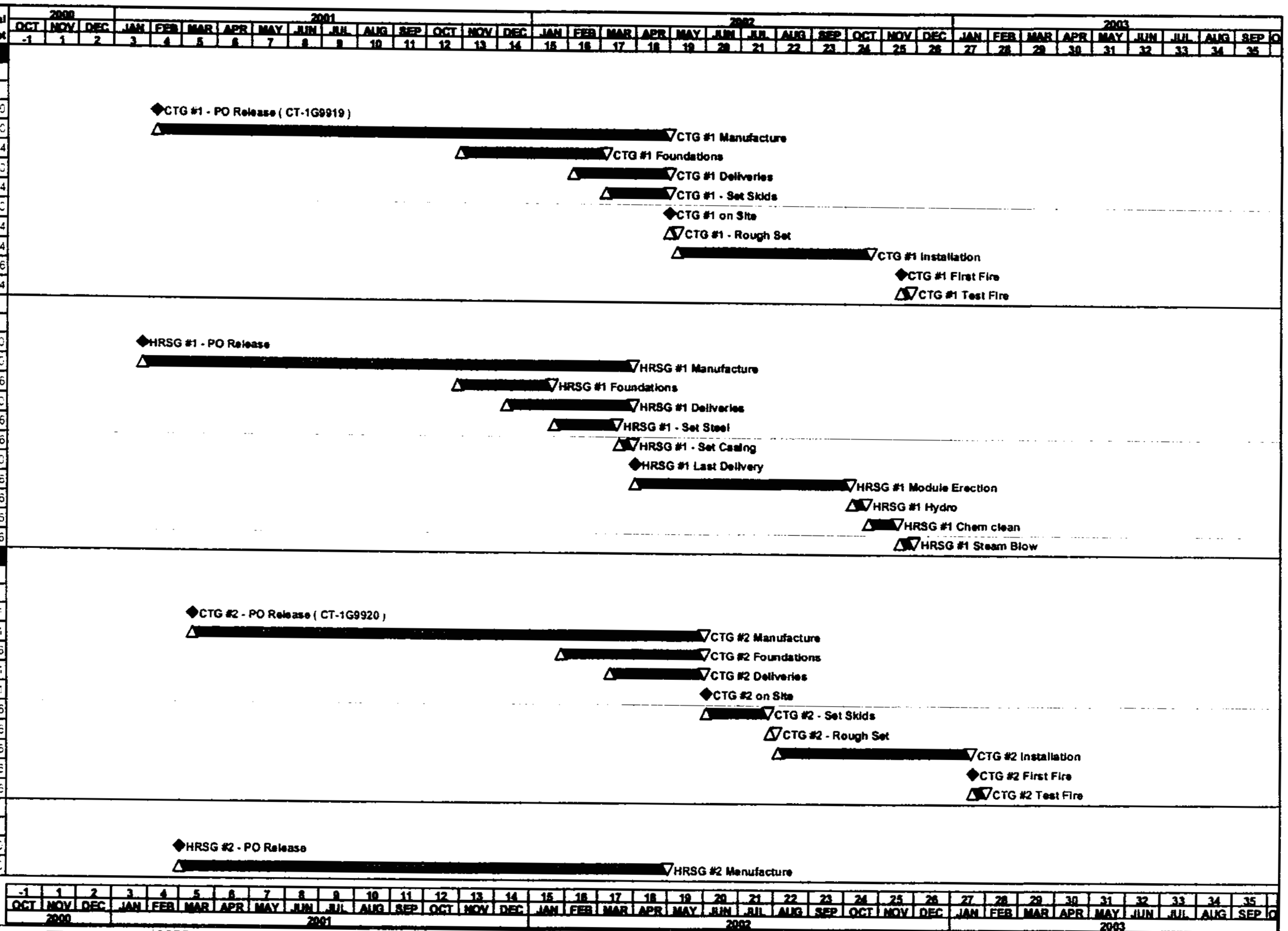
OSPREY ENERGY CENTER
PRELIMINARY PROJECT SCHEDULE
(continued)

Activity ID	Activity Description	Early Start	Early Finish	Orig Dur	Total Float
Combustion Turbine					
Combustion Turbine					
102000	CTG #1 - PO Release (CT-1G9919	07FEB01		0	0
102010	CTG #1 Manufacture	07FEB01	30APR02	320	0
102020	CTG #1 Foundations	31OCT01	05MAR02	90	154
102030	CTG #1 Deliveries	06FEB02	30APR02	60	0
102040	CTG #1 - Set Skids	06MAR02	30APR02	40	154
102050	CTG #1 on Site	01MAY02*		0	0
102060	CTG #1 - Rough Set	01MAY02	07MAY02	5	154
102070	CTG #1 Installation	08MAY02	22OCT02	120	154
102080	CTG #1 First Fire	18NOV02		0	136
102090	CTG #1 Test Fire	18NOV02	26NOV02	7	164
Heat Recovery Steam Generator (HRSG)					
HRSG - Steam Side					
103000	HRSG #1 - PO Release	26JAN01		0	0
103010	HRSG #1 Manufacture	26JAN01	29MAR02	306	0
103020	HRSG #1 Foundations	29OCT01	18JAN02	60	136
103030	HRSG #1 Deliveries	10DEC01	29MAR02	80	0
103040	HRSG #1 - Set Steel	21JAN02	15MAR02	40	136
103050	HRSG #1 - Set Casing	18MAR02	29MAR02	10	136
103060	HRSG #1 Last Delivery	01APR02*		0	0
103070	HRSG #1 Module Erection	01APR02	04OCT02	135	136
103080	HRSG #1 Hydro	07OCT02	18OCT02	10	136
103090	HRSG #1 Chem clean	21OCT02	15NOV02	20	136
103100	HRSG #1 Steam Blow	18NOV02	29NOV02	10	136
Combustion Turbine					
Combustion Turbine					
202000	CTG #2 - PO Release (CT-1G9920	12MAR01		0	-1
202010	CTG #2 Manufacture	12MAR01	31MAY02	320	-1
202020	CTG #2 Foundations	28JAN02	31MAY02	90	116
202030	CTG #2 Deliveries	11MAR02	31MAY02	60	-1
202050	CTG #2 on Site	03JUN02*		0	-1
202040	CTG #2 - Set Skids	03JUN02	26JUL02	40	116
202060	CTG #2 - Rough Set	29JUL02	02AUG02	5	116
202070	CTG #2 Installation	05AUG02	17JAN03	120	116
202080	CTG #2 First Fire	20JAN03		0	116
202090	CTG #2 Test Fire	20JAN03	31JAN03	10	116
Heat Recovery Steam Generator (HRSG)					
HRSG - Steam Side					
203000	HRSG #2 - PO Release	01MAR01		0	0
203010	HRSG #2 Manufacture	01MAR01	30APR02	304	0



Start Date	01JAN99	Early Bar	OSPR
Finish Date	28MAR03	Progress Bar	
Data Date	30JAN00	Critical Activity	
Run Date	07MAR00 14:33		

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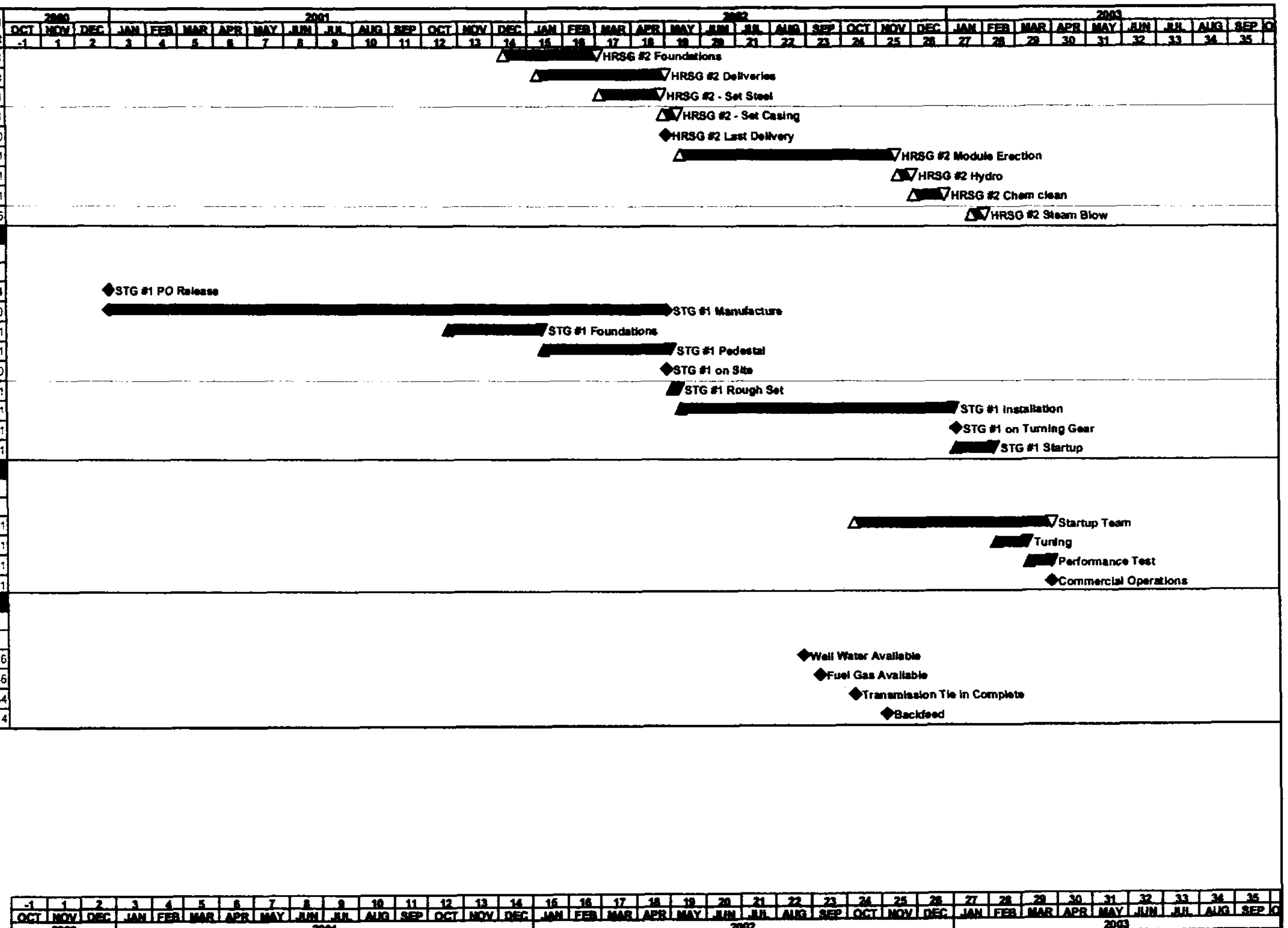
CALPINE
OSPREY ENERGY PROJECT
Calpine Preliminary Schedule

Osprey Energy Center
Calpine
Witness: Ted S. Baldwin
Exhibit ____ (TSB-12)

OSPREY ENERGY CENTER
PRELIMINARY PROJECT SCHEDULE
(continued)

Activity ID	Activity Description	Early Start	Early Finish	Orig Dur	Total Float
203020	HRSG #2 Foundations	10DEC01	01MAR02	60	131
203030	HRSG #2 Deliveries	09JAN02	30APR02	80	0
203040	HRSG #2 - Set Steel	04MAR02	26APR02	40	131
203050	HRSG #2 - Set Casing	29APR02	10MAY02	10	131
203060	HRSG #2 Last Delivery	01MAY02*		0	0
203070	HRSG #2 Module Erection	13MAY02	15NOV02	135	131
203080	HRSG #2 Hydro	18NOV02	29NOV02	10	131
203090	HRSG #2 Chem clean	02DEC02	27DEC02	20	131
203100	HRSG #2 Steam Blow	20JAN03	31JAN03	10	116
Steam Turbine					
Steam Turbine					
104000	STG #1 PO Release	29DEC00*		0	-164
104010	STG #1 Manufacture	29DEC00	30APR02	348	0
104020	STG #1 Foundations	22OCT01	11JAN02	60	111
104030	STG #1 Pedestal	14JAN02	03MAY02	80	111
104040	STG #1 on Site	01MAY02*		0	0
104050	STG #1 Rough Set	06MAY02	10MAY02	5	111
104060	STG #1 Installation	13MAY02	03JAN03	170	111
104070	STG #1 on Turning Gear	06JAN03		0	111
104080	STG #1 Startup	06JAN03	07FEB03	25	111
Balance of Plant					
Balance of Plant					
5000	Startup Team	09OCT02	28MAR03	123*	111
5010	Tuning	10FEB03	07MAR03	20	111
5020	Performance Test	10MAR03	28MAR03	15	111
5030	Commercial Operations		28MAR03	0	111
Linears					
Balance of Plant					
1710	Well Water Available	26AUG02		0	266
1700	Fuel Gas Available	09SEP02		0	256
1720	Transmission Tie in Complete	09OCT02		0	234
1730	Backfeed	06NOV02		0	214



Start Date 01JAN99	Early Bar	OSPR	Sheet 3 of 3	
Finish Date 28MAR03	Progress Bar	CALPINE		
Data Date 30JAN00	Critical Activity	OSPREY ENERGY PROJECT		
Run Date 07MAR00 14:33		Calpine Preliminary Schedule		

Osprey Energy Center
Calpine
Witness: Ted S. Baldw
Exhibit ____ (TSB-1
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