FPL

ORIGINAL

April 1, 2003

Ms. Blanca S. Bayó, Director
Division of the Commission Clerk
and Administrative Services
Florida Public Service Commission
Capital Circle Office Center
2540 Shumard Oak Boulevard
Tallahassee, Fl 32399-0850

BY HAND DELIVERY

Re: 2003 – 2012 Ten-Year Site Plan

Dear Ms. Bayó,

In accordance with Chapter 186 (Section 186.801 - Ten Year Plans) of the Florida Statutes, enclosed for filing are twenty-five (25) copies of Florida Power & Light Company's 2003- 2012 Ten-Year Power Plant Site Plan.

If you have any questions, please do not hesitate to contact me at (305) 552-4332 or Millie Gonzalez at (305) 552-2279.

Sincerely,

Anne M. Grealy

Anne M. Grealy
Director, Regulatory Affairs

AUS
CAF
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OPC
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AMG/mg
Enclosures

Ten Year Power Plant Site Plan

2003 - 2012

FPL

Ten Year Power Plant Site Plan

2003-2012

Submitted To:

Florida Public
Service Commission

Miami, Florida
April, 2003

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Table of Contents

List of Figures and Tables iii

List of Schedules v

Overview of the Document 1

List of Abbreviations Used in FPL Forms 3

Executive Summary 5

I. Description of Existing Resources 9

- A. FPL-Owned Resources 11
- B. Non-Utility Generation 15
- C. Demand Side Management (DSM) 17
- D. Purchased Power 18

II. Forecast of Electric Power Demand 23

- A. Long-Term Sales Forecasts 26
- B. Net Energy for Load 29
- C. System Peak Forecasts 29
- D. Hourly Load Forecast 31

III. Projection of Incremental Resource Additions 39

- A. FPL's Resource Planning 41
- B. Incremental Resource Additions 47
- C. Other Results of FPL's Recent Planning Work 50
- D. Demand Side Management (DSM) 52
- E. Generation Additions from Independent Power Producers 56
- F. Transmission Plan 57
- G. Renewable Resources 61
- H. FPL's Fuel Mix and Price Forecasts 63

IV. Environmental and Land Use Information 85

- A. Protection of the Environment 87
- B. FPL's Environmental Statement 87
- C. Environmental Management 88
- D. Environmental Assurance Program 88
- E. Environmental Communication and Facilitation 89
- F. Preferred and Potential Sites 89
  1. Preferred Site # 1 – Fort Myers 90
  2. Preferred Site # 2 – Sanford 96
  3. Preferred Site # 3 – Manatee 103
  4. Preferred Site # 4 – Martin 110
  5. Potential Site # 1 - Cape Canaveral 117
  6. Potential Site # 2 - Midway 118
  7. Potential Site # 3 - Port Everglades 119
  8. Potential Site # 4 - Riviera 120
  9. Potential Site # 5 - Turkey Point 121

V. Other Planning Assumptions and Information 167

Introduction 169

Discussion Item #1 169

Discussion Item #2 170

Discussion Item #3 171

Discussion Item #4 171

Discussion Item #5 172

Discussion Item #6 172

Discussion Item #7 173

Discussion Item #8 173

Discussion Item #9 174

Discussion Item #10 175

Discussion Item #11 176

Discussion Item #12 177

List of Figures and Tables

Table ES.1	Projected Capacity Changes and Reserve Margins for FPL	7
Figure I.A.1	Capacity Resources (Map)	12
Figure I.A.2	FPL Substation & Transmission System Configuration (Map)	13
Figure I.A.3	FPL Interconnection Diagram	14
Table I.B.1	Florida Power & Light Company Firm Capacity and Energy Contracts with Cogenerators/Small Power Production Facilities	16
Table I.B.2	As-Available Energy Purchases From Non-Utility Generators in 2002	16
Table I.D.1	FPL's Purchased Power MW	18
Figure III.A.1	Overview of FPL's IRP Process	42
Table III.B.1	Projected Capacity Changes for FPL	49
Table III.D.1	FPL's Summer MW Reduction Goals for DSM	56
Table III.F.1	List of Proposed Power Lines	57
Table IV.E.1	2002 FPL Environmental Outreach Activities	89
	Fort Myers	123
	U.S. Geological Survey (USGS) Map	125
	U.S. Geological Survey (USGS) Legend	126
	Proposed Facilities Layout Map	127
	Map of Site and Adjacent Area	128
	Sanford	129
	U.S. Geological Survey (USGS) Map	131
	U.S. Geological Survey (USGS) Legend	132
	Proposed Facilities Layout Map	133
	Map of Site and Adjacent Area	134

List of Figures and Tables

Manatee.....135

U.S. Geological Survey (USGS) Map 137

U.S. Geological Survey (USGS) Legend 138

Proposed Facilities Layout Map 139

Map of Site and Adjacent Area 140

Martin.....141

U.S. Geological Survey (USGS) Map 143

U.S. Geological Survey (USGS) Legend 144

Proposed Facilities Layout Map 145

Map of Site and Adjacent Area 146

Potential Sites.....147

Cape Canaveral - U.S. Geological Survey (USGS) Map.....149

Midway – U.S. Geological Survey (USGS) Map 153

Port Everglades - U.S. Geological Survey (USGS) Map 157

Riviera - U.S. Geological Survey (USGS) Map 161

Turkey Point - U.S. Geological Survey (USGS) Map 165

List of Schedules

Schedule 1	Existing Generating Facilities	19
Schedule 2.1	History and Forecast of Energy Consumption & Number of Customers by Customer Class	32
Schedule 2.2	History and Forecast of Energy Consumption & Number of Customers by Customer Class	33
Schedule 2.3	History and Forecast of Energy Consumption & Number of Customers by Customer Class	34
Schedule 3.1	History and Forecast of Summer Peak Demand (Base Case)	35
Schedule 3.2	History and Forecast of Winter Peak Demand (Base Case)	36
Schedule 3.3	History and Forecast of Annual Net Energy for Load GWH (Base Case)	37
Schedule 4	Previous Year Actual and Two-Year Forecast of Retail Peak Demand and Net Energy for Load by Month	38
Schedule 5	Fuel Requirements	66
Schedule 6.1	Energy Sources	67
Schedule 6.2	Energy % by Fuel Type	68
Schedule 7.1	Forecast of Capacity, Demand and Scheduled Maintenance at Time of Summer Peak	69
Schedule 7.2	Forecast of Capacity, Demand and Scheduled Maintenance at Time of Winter Peak	70
Schedule 8	Planned and Prospective Generating Facility Additions and Changes	71
Schedule 9	Status Report and Specifications of Proposed Generating Facilities	73
Schedule 10	Status Report and Specifications of Proposed Directly Associated Transmission Lines	81

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Overview of The Document

Chapter 186, Florida Statutes, requires that each electric utility in the State of Florida with a minimum existing generating capacity of 250 megawatts (MW) must annually submit a Ten - Year Power Plant Site Plan. This plan includes an estimate of the utility's electric power generating needs, a projection of how those needs will be met, and a disclosure of information pertaining to the utility's preferred and potential power plant sites. This information is compiled and presented in accordance with rules 25-22.070, 25-22.071, and 25-22.072, Florida Administrative Code (FAC).

This Ten - Year Power Plant Site Plan (Site Plan) document is based on Florida Power & Light Company's (FPL) planning analyses that were carried out in 2002 and that were on-going in the first quarter of 2003. The forecasted information presented in this plan addresses the 2003 – 2012 time frame.

Site Plans are long-term planning documents and should be viewed in this context. A Site Plan contains tentative information, especially for the latter years of the ten - year time horizon, and is subject to change at the discretion of the utility. Much of the data submitted is preliminary in nature and is presented in a general manner. Specific and detailed data will be submitted as part of the Florida site certification process, or through other proceedings and filings.

This document is organized in the following manner:

Chapter I – Description of Existing Resources

This chapter provides an overview of FPL's current generating facilities. Also included is information on other FPL resources including purchased power, demand side management, and FPL's transmission system.

Chapter II – Forecast of Electric Power Demand

FPL's load forecasting methodology, and its forecast of seasonal peaks and annual energy usage, is presented in Chapter II.

Chapter III – Projection of Incremental Resource Additions

This chapter discusses FPL's integrated resource planning (IRP) process and outlines FPL's projected resource additions, especially new power plants, as determined in FPL's IRP work in 2002 and early 2003.

Chapter IV – Environmental and Land Use Information

This chapter discusses various environmental information as well as preferred and potential site locations for additional electric generation facilities.

Chapter V – Other Planning Assumptions and Information

This chapter addresses twelve "discussion items" which pertain to additional specific information which is to be included in a Site Plan filing.

FPL
List of Abbreviations
Used in FPL Forms

Reference	*Abbreviation*	*Definition*
Unit Type	IC	Internal Combustion
	NP	Nuclear Power
	ST	Steam Unit
	CT	Combustion Turbine
	CC	Combined Cycle
	BIT	Bituminous Coal
Fuel Type	UR	Uranium
	NG	Natural Gas
	FO6	# 4,# 5,# 6 Oil (Heavy)
	FO2	# 1, # 2 or Kerosene Oil (Distillate)
	BIT	Bituminous Coal
	Pet	Petroleum Coke
	NO	None
Fuel Transportation	TK	Truck
	RR	Railroad
	PL	Pipeline
	WA	Water
	No	None
Unit/Site Status	P	Planned Unit
	OT	Other
	RP	Proposed for repowering or life extension
	T	Regulatory approval received but not under construction
	V	Under construction, more than 50% Complete

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Executive Summary

Florida Power & Light Company's (FPL) 2003 Ten - Year Power Plant Site Plan (Site Plan) addresses FPL's plans to increase its electric generation capability as part of its efforts to meet its projected incremental resource needs for the 2003 – 2012 time period.

FPL's total generation capability is projected to significantly increase during the 2003 – 2012 time period as shown in Table ES.1. This table also shows the resulting projected Summer and Winter reserve margins for FPL over this ten-year time horizon.

Table ES.1 reflects FPL's on-going project to repower FPL's existing Sanford Unit # 4 (two existing units at Fort Myers and another existing unit at Sanford have recently been repowered), planned changes to existing generation units (due to unit overhauls, etc.), and scheduled changes in the delivered amounts of purchased power. The table also reflects the planned additions of new generating units. Although not specifically shown in this table, FPL's approved DSM goals are assumed to be implemented on schedule.

The amount of new generating capacity that will be added is driven in part by the outcome of the Florida Public Service Commission docket No. 981890-EU. This docket ended with a stipulated agreement that resulted in FPL, along with Tampa Electric Company and Florida Power Corporation, switching from a minimum reserve margin planning criterion of 15% to one of 20% beginning with the Summer of 2004. As a consequence, FPL is now planning to add significantly more new generation capacity than was shown in its Site Plans filed prior to this agreement.

As shown in Table ES.1, FPL is adding two new combustion turbines (CT's) at FPL's existing Fort Myers plant site in 2003. Also during 2003, FPL will be completing its work to repower its existing Sanford Unit # 4.

FPL has also secured capacity through early 2007 through a number of short-term, firm capacity purchases from utilities and other entities. An additional short-term, firm purchase for 2004 will replace a previous purchase agreement for this time frame that was recently terminated.

In 2005, FPL will be adding a large (1,107 Summer MW) new combined cycle (CC) unit at its existing Manatee plant site. Also in 2005, the two combustion turbines (CT's) that were added at FPL's existing Martin plant site in mid - 2001 will be converted into a 1,107

Summer MW CC unit by the addition of two additional CT's, heat recovery steam generators, and associated equipment. This conversion will add another 783 Summer MW of capability above the present capability of the existing two CT's. The additions for 2005 were selected as the best options among other FPL construction alternatives and numerous outside proposals received in response to two Request for Proposals (RFP's) FPL issued in August 2001 and April 2002, respectively. These two capacity additions were approved by the Florida Public Service Commission on November 19, 2002 and their applications for certification under the Florid Electric Power Plan Siting Act are pending.

In 2007, FPL projects a capacity need of approximately 1,050 MW of additional capacity. The results of FPL's on-going planning analyses through the first quarter of 2003 indicate that the best FPL construction option to meet this need is a new 1,107 MW (Summer) CC unit. A number of potential sites for such a unit are currently under study and these are presented in Chapter IV as a "Potential Site". FPL will continue to analyze these sites for a new CC unit, as well as other capacity options, for meeting its 2007 capacity need. FPL will inform the Florida Public Service Commission when a decision is made regarding how to best meet this need.

In regard to meeting FPL's projected capacity needs for 2008 through 2012, FPL currently projects the addition of three additional CC units: one each year in 2008, 2010, and 2012. Sites for these three additional CC units have not yet been selected. [1] These planned increases in electric generation capability will allow FPL to continue to maintain system reliability and integrity at a reasonable cost.

FPL's recent planning efforts have also identified two issues that are now receiving attention in FPL's ongoing resource planning work. Those two issues are: 1) the growing imbalance in Southeast Florida between regional load and generating capacity located within this region; and 2) maintaining/enhancing fuel diversity in the FPL system. FPL's approach to these two issues will be developed through on-going resource planning work.

[1] FPL's current planning studies have identified new combined cycle units as the generally preferred option to meet future load growth. However, this is subject to change. Repowering of existing FPL sites remains an alternative to new construction and FPL will continue to examine this, and other, options including solid fuel options.

Projected Capacity Changes and Reserve Margins for FPL [1]					
		Net Capacity Changes (MW)		FPL Reserve Margin (%)	
		Winter [2]	Summer [3]	Winter	Summer
2003	Sanford Repowering # 4: Second Phase [4]	---	957	18%	20%
	Combustion Turbines (2) Fort Myers [5]	---	298		
	Purchases [6]	1,097	(140)		
	Changes to existing Units	31	(32)		
2004	Combustion Turbines (2) Fort Myers [5]	366	---	27%	20%
	Purchases [6]	(156)	44		
	New Short-Term Purchase [7]	---	213		
	Changes to existing Units	72	283		
	Sanford Repowering # 4: Second Phase [4]	1,036	---		
2005	Changes to existing QF's	(10)	(10)	22%	23%
	Purchases [6]	(6)	(523)		
	Manatee Unit #3 Combined Cycle [8]	---	1,107		
	New Short-Term Purchase [7]	---	(213)		
	Conversion of MR #8 CT's to CC [8]	(363)	783		
2006	Manatee Unit #3 Combined Cycle [8]	1,201	---	28%	20%
	Conversion of MR #8 CT's to CC [8]	1,198	---		
	Changes to existing QF's	(133)	(133)		
	Purchases [6]	(520)	---		
2007	Purchases [6]	---	(474)	25%	20%
	Unsited Combined Cycle # 1 [8]	---	1,107		
2008	Purchases [6]	(474)	---	26%	24%
	Unsited Combined Cycle # 1 [8]	1,209	---		
	Unsited Combined Cycle # 2 [8]	---	1,107		
2009	Unsited Combined Cycle # 2 [8]	1,209	---	29%	21%
	Changes to existing QF's	---	(51)		
2010	Unsited Combined Cycle # 3 [8]	---	1,107	26%	23%
	Changes to existing QF's	(51)	(44)		
2011	Unsited Combined Cycle # 3 [8]	1,209	---	29%	20%
	Changes to existing QF's	(89)	(45)		
2012	Unsited Combined Cycle # 4 [8]	---	1,107	26%	22%
	TOTALS =	6,827	6,449		

(1) Additional information about these resulting reserve margins and capacity changes are found on Schedule 7 & 8 respectively.

(2) Winter values are values for January of year shown.

(3) Summer values are values for August of year shown.

(4) *The second phase of the repowering* consists of integrating the combustion turbines, heat recovery steam generators, and steam turbines.

(5) The two CT's at Fort Myers are scheduled to be in-service in the Spring of 2003. Therefore, the CT's are included in the 2003 Summer reserve margin calculation and are included in the 2004 - on reserve margin for Summer and Winter.

(6) These are firm capacity purchases. See Section I.D and III.A. for more details.

(7) Negotiations are currently underway between FPL and several parties to secure this short - term capacity.

(8) All new combined cycle units are scheduled to be in-service in June of the year shown. Consequently, they are included in the Summer reserve margin calculation for the in-service year and in both the Summer and Winter reserve margin calculations for subsequent years.

Table ES.1

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CHAPTER 1

Description of Existing Resources

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I. Description of Existing Resources

FPL's service area contains approximately 27,650 square miles and has a population of approximately 7.8 million people. FPL served an average of 4,019,805 customer accounts in thirty-five counties during 2002. These customers were served from a variety of resources including: FPL-owned fossil and nuclear generating units, non-utility owned generation, demand side management, and interchange/purchased power.

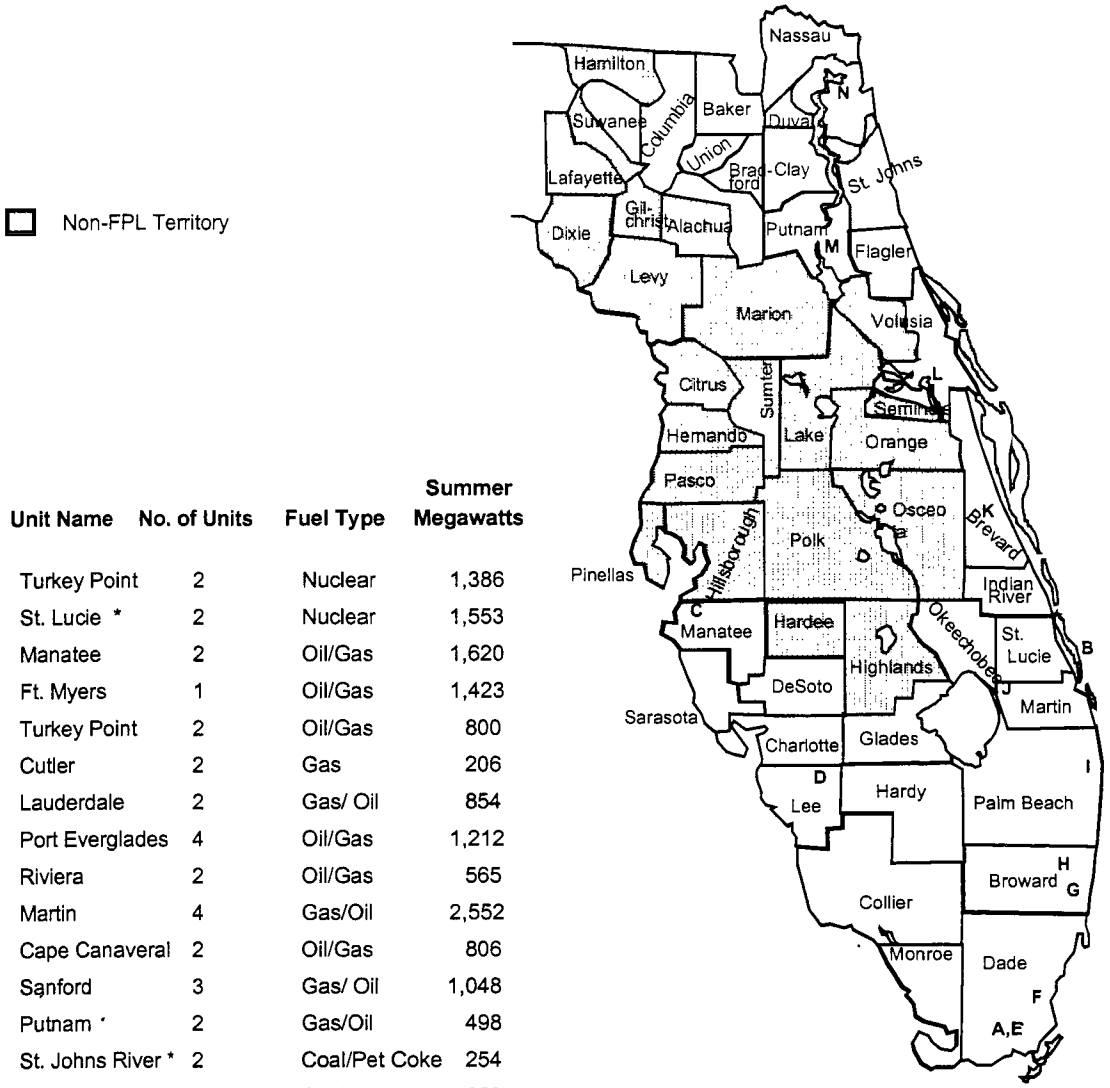
I.A. FPL-Owned Resources

The existing FPL generating resources are located at fourteen generating sites distributed geographically around its service territory and also include partial ownership of one unit located in Georgia and two units located in Jacksonville. The current generating facilities consist of four nuclear steam units, three coal units, eight combined cycle units, eighteen fossil steam units, fifty combustion gas turbines, and five diesel units. The location of these units is shown on Figure I.A.1.

The bulk transmission system is composed of 1,105 circuit miles of 500 Kilovolt (KV) lines (including 75 miles of 500 KV lines [two 37-1/2 mile lines] between Duval Substation and the Florida-Georgia state line, which are jointly owned with Jacksonville Electric Authority) and 2,702 circuit miles of 230 KV lines. The underlying network is composed of 1,630 circuit miles of 138 KV lines, 718 circuit miles of 115 KV lines, and 178 circuit miles of 69 KV transmission lines. Integration of the generation, transmission, and distribution system is achieved through FPL's 515 substations.

The existing FPL system, including generating plants, major transmission stations, and transmission lines, is shown on Figure I.A.2. In addition, Figure I.A.3 shows FPL's interconnection ties with other utilities.

Capacity Resources
(as of December 31, 2002)



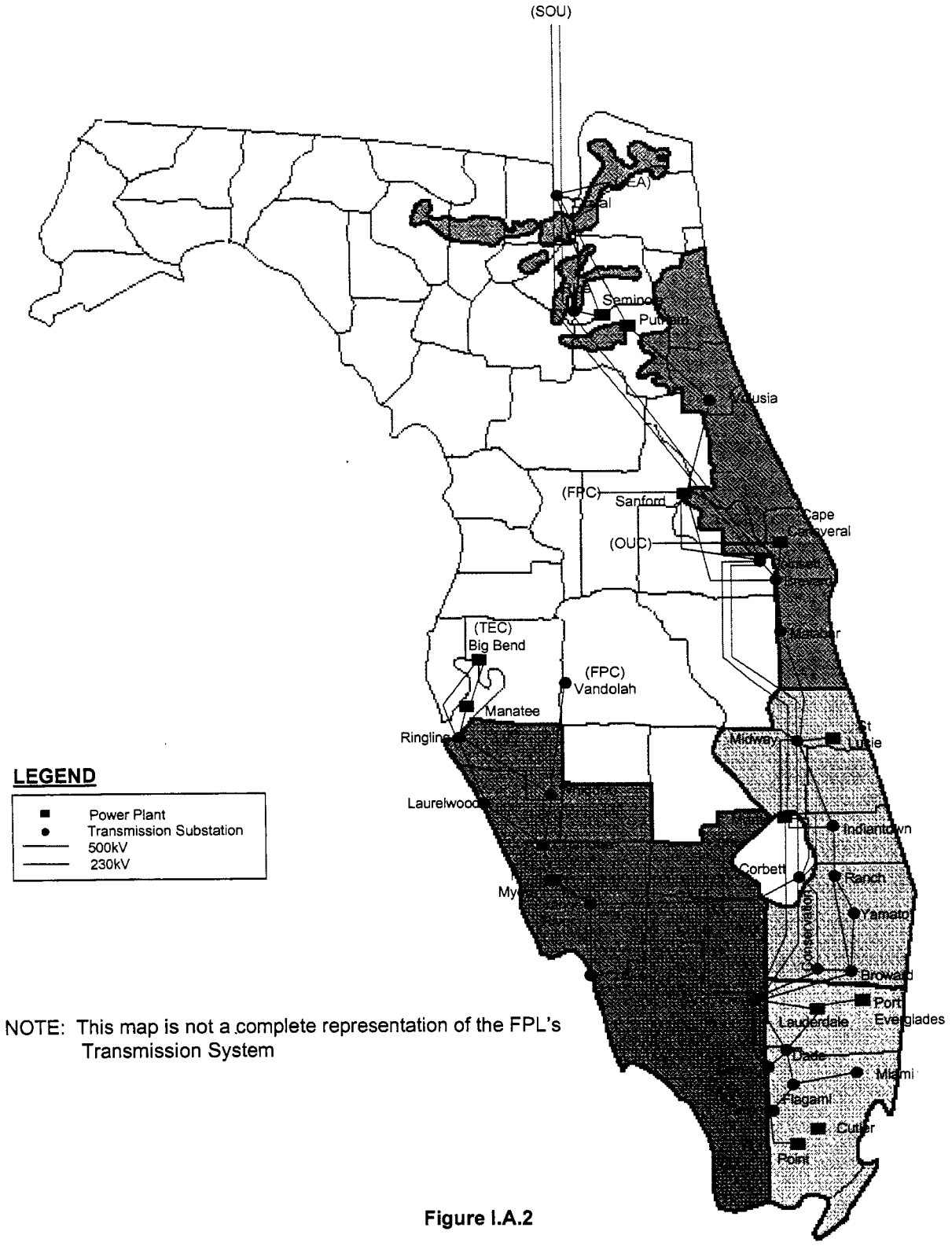
	Unit Name	No. of Units	Fuel Type	Summer Megawatts
A	Turkey Point	2	Nuclear	1,386
B.	St. Lucie *	2	Nuclear	1,553
C.	Manatee	2	Oil/Gas	1,620
D.	Ft. Myers	1	Oil/Gas	1,423
E.	Turkey Point	2	Oil/Gas	800
F.	Cutler	2	Gas	206
G.	Lauderdale	2	Gas/ Oil	854
H.	Port Everglades	4	Oil/Gas	1,212
I.	Riviera	2	Oil/Gas	565
J.	Martin	4	Gas/Oil	2,552
K.	Cape Canaveral	2	Oil/Gas	806
L.	Sanford	3	Gas/ Oil	1,048
M.	Putnam	2	Gas/Oil	498
N.	St. Johns River *	2	Coal/Pet Coke	254
Scherer **		1	Coal	658
Peaking Units				2,206
FPL Generation				17,641

**Represents FPL's ownership share: St. Lucie nuclear:100% unit 1, 85% unit 2; St. Johns River:20% of two units.*

*** The Scherer unit is located in Georgia and is not shown on this map.*

Figure I.A.1

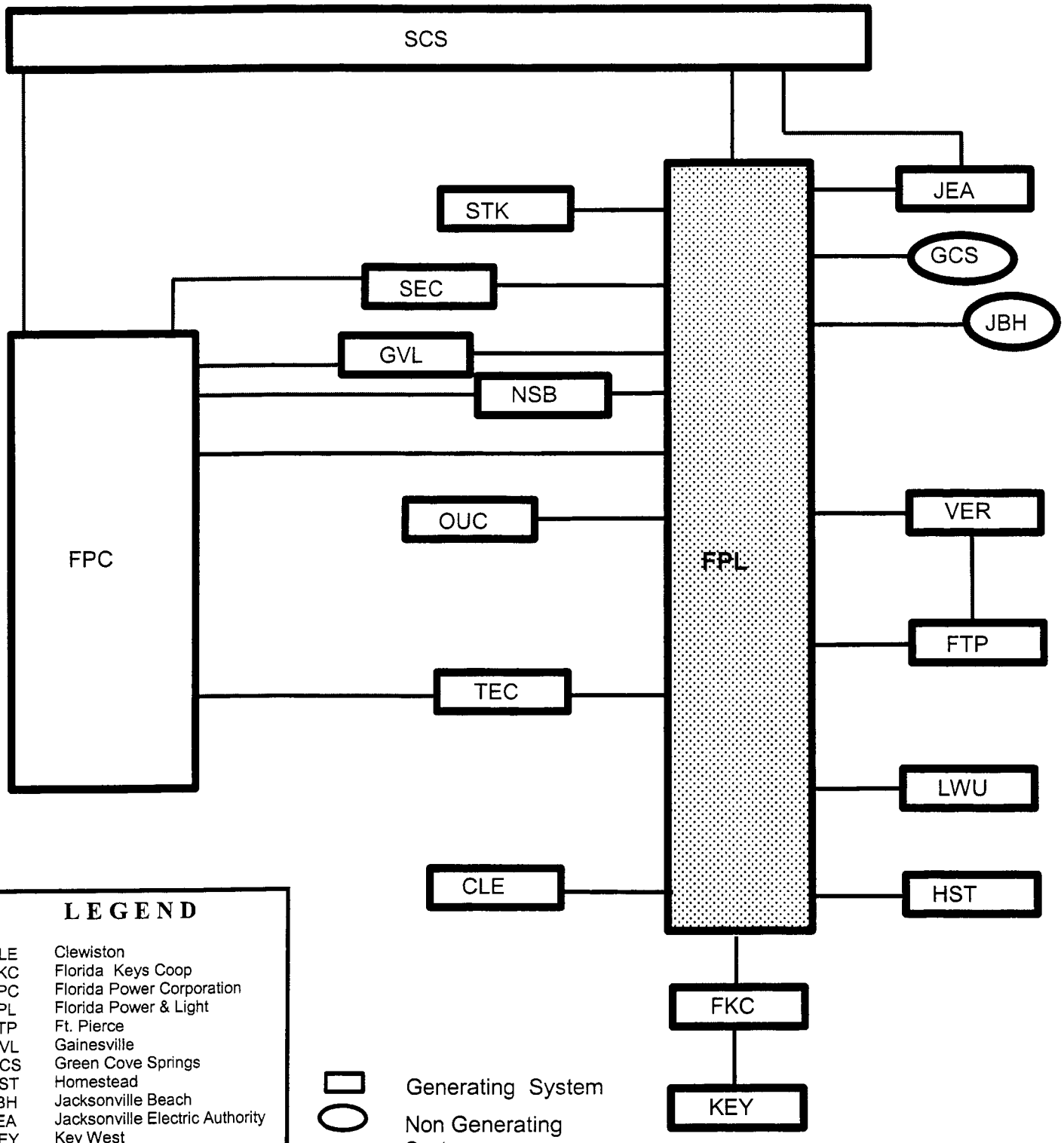
FPL Substation and Transmission System Configuration



NOTE: This map is not a complete representation of the FPL's Transmission System

Figure I.A.2

FPL Interconnection Diagram



LEGEND

CLE	Clewiston
FKC	Florida Keys Coop
FPC	Florida Power Corporation
FPL	Florida Power & Light
FTP	Ft. Pierce
GVL	Gainesville
GCS	Green Cove Springs
HST	Homestead
JBH	Jacksonville Beach
JEA	Jacksonville Electric Authority
KEY	Key West
LWU	Lake Worth
NSB	New Smyrna Beach
OUC	Orlando Utilities Commission
SEC	Seminole Electric Cooperative
SCS	Southern Companies
STK	Starke
TEC	Tampa Electric Company
VER	Vero Beach

Figure I.A.3

I.B Non-Utility Generation

Non-utility generation is an important part of FPL's resource mix. FPL currently has contracts with seven cogeneration/small power production facilities to purchase firm capacity and energy. A listing of these facilities appears in Table I.B.1. In addition, FPL purchases as-available (non-firm) energy from several cogeneration facilities and small power production facilities as shown in Table I.B.2.

A cogeneration facility is one which simultaneously produces electrical and thermal energy, with the thermal energy (e.g., steam) being used for industrial, commercial, or cooling and heating purposes. A small power production facility is one which does not exceed 80 MW (unless it is exempted from this size limitation by the Solar, Wind, Waste, and Geothermal Power Production incentives Act of 1990) and uses as its primary energy source (at least 50%) solar, wind, waste, geothermal, or other renewable resources.

Florida Power & Light Company Firm Capacity and Energy Contracts with Cogeneration/Small Power Production Facilities					
Project	***County***	***Fuel***	***Capacity MW***	***In-Service Date***	***End Date***
Bio-Energy	Broward	Landfill Gas	10.0	5/1/98	01/01/05
Florida Crushed Stone	Hernando	Coal (PC)	110.0	4/1/92	10/31/05
			11.0	1/1/94	10/31/05
			12.0	1/1/95	10/31/05
Broward South	Broward	Solid Waste	50.6	4/1/91	08/01/09
Palm Beach SWA	Palm Beach	Solid Waste	43.5	4/1/92	03/31/10
Broward North	Broward	Solid Waste	45.0	4/1/92	12/31/10
Cedar Bay Generating Co.	Duval	Coal (CFB)	250.0	1/25/94	12/31/24
Indiantown Cogen., LP	Martin	Coal (PC)	330.0	12/22/95	12/01/25
Broward South	Broward	Solid Waste	1.4	1/1/93	12/31/26
			1.5	1/1/95	12/31/26
			0.6	1/1/97	12/31/26
Broward North	Broward	Solid Waste	7.0	1/1/93	12/31/26
			1.5	1/1/95	12/31/26
			2.5	1/1/97	12/31/26

Table I.B.1

As Available Energy Purchases From Non-Utility Generators in 2002				
Project	***County***	***Fuel***	***In-Service Date***	***Energy (MWH) Delivered to FPL in 2002***
US Sugar-Bryant	Palm Beach	Bagassee	2/80	4,673
Tropicana	Manatee	Natural Gas	2/90	6,516
Okeelanta	Palm Beach	Bagassee/Wood	11/95	318,457
Tomoka Farms	Volusia	Landfill Gas	7/98	14,687
Georgia Pacific	Putnam	Paper By-Product	2/94	4,184

Table I.B.2

I.C. Demand Side Management (DSM)

FPL's DSM activities continue what has been FPL's practice since 1978 of encouraging cost-effective conservation and load management. FPL's DSM efforts through 2002 have resulted in a cumulative Summer peak reduction of approximately 2,923 MW at the meter and an estimated cumulative energy saving of 5,270 GWH at the meter.

FPL's current DSM Plan was approved by the Florida Public Service Commission in late 1999 and reflects FPL's new DSM Goals for the 2000-2009 time frame. FPL's 2003 resource plan, and the schedule for new generation additions presented in this document, are based on these approved DSM levels.

I.D. Purchased Power

Purchased power remains an important part of FPL's resource mix. FPL has a unit power sales (UPS) contract to purchase 929 MW, with a minimum of 380 MW, of coal-fired generation from the Southern Company. In addition, FPL has contracts with the Jacksonville Electric Authority (JEA) for the purchase of 381 MW (Summer) and 390 MW (Winter) of coal-fired generation from the St. John's River Power Park (SJRPP) Unit Nos 1 and 2 (FPL also has ownership interest in these units; that ownership amount is reflected in FPL's installed capacity shown on Schedule 1).

Finally, FPL has firm capacity purchase contracts through early 2007. These firm capacity purchase contracts are with a variety of suppliers. Table I.D.1 presents the Summer and Winter MW resulting from all firm purchased power contracts through the year 2012.

FPL's Purchased Power MW [1]								
	UPS		*SJRPP*		*Other Firm Capacity Purchases*		*Total*	
Year	*Winter*	*Summer*	*Winter*	*Summer*	*Winter*	*Summer*	*Winter*	*Summer*
2002 [2]	929	929	390	381	50	1093	1369	2403
2003	929	929	390	381	1156	953	2475	2263
2004	929	929	390	381	1000	1210	2319	2520
2005	929	929	390	381	994	474	2313	1784
2006	929	929	390	381	474	474	1793	1784
2007	929	929	390	381	474	0	1793	1310
2008	929	929	390	381	0	0	1319	1310
2009	929	929	390	381	0	0	1319	1310
2010	929	929	390	381	0	0	1319	1310
2011	929	929	390	381	0	0	1319	1310
2012	929	929	390	381	0	0	1319	1310

Note:

(1) Total reflects total resource entitlements resulting from existing agreements between FPL, Southern Companies, JEA, and from new firm purchase agreements. In addition, the UPS values reflect a projected extension or renegotiation of the UPS contracts beyond their current expiration date.

(2) Values for 2002 are actual.

Table I.D.1

Schedule 1

Existing Generating Facilities
As of December 31, 2002

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
						Fuel		Alt. Fuel	Commercial	Expected	Gen.Max.	Net Capability 1/	
Plant Name	Unit No.	Location	Unit Type	Fuel Pri.	Fuel Alt.	Transport. Pri.	Transport. Alt.	Days Use	In-Service Month/Year	Retirement Month/Year	Nameplate KW	Winter MW	Summer MW
Turkey Point		Dade County 27/57S/40E									2,338,100	2,255	2,198
	1		ST	FO6	NG	WA	PL	Unknown	Apr-67	Unknown	402,050	406	400
	2		ST	FO6	NG	WA	PL	Unknown	Apr-68	Unknown	402,050	403	400
	3		NP	UR	No	TK	No	Unknown	Nov-72	Unknown	760,000	717	693
	4		NP	UR	No	TK	No	Unknown	Jun-73	Unknown	760,000	717	693
	1-5		IC	FO2	No	TK	No	Unknown	Dec-67	Unknown	14,000	12	12
Cutler		Dade County 27/55S/40E									236,500	212	206
	5		ST	NG	No	PL	No	Unknown	Nov-54	Unknown	74,500	70	68
	6		ST	NG	No	PL	No	Unknown	Jul-55	Unknown	162,000	142	138
Lauderdale		Broward County 30/50S/42E									1,863,972	1,942	1,694
	4		CC	NG	FO2	PL	PL	Unknown	May-93	Unknown	521,250	460	425
	5		CC	NG	FO2	PL	PL	Unknown	Jun-93	Unknown	521,250	464	429
	1-12		CT	NG	FO2	PL	PL	Unknown	Aug-70	Unknown	410,736	509	420
	13-24		CT	NG	FO2	PL	PL	Unknown	Aug-72	Unknown	410,736	509	420
Port Everglades		City of Hollywood 23/50S/42E									1,665,086	1,725	1,632
	1		ST	FO6	NG	WA	PL	Unknown	Jun-60	Unknown	225,250	222	221
	2		ST	FO6	NG	WA	PL	Unknown	Apr-61	Unknown	225,000	222	221
	3		ST	FO6	NG	WA	PL	Unknown	Jul-64	Unknown	402,050	392	390
	4		ST	FO6	NG	WA	PL	Unknown	Apr-65	Unknown	402,050	380	380
	1-12		CT	NG	FO2	PL	PL	Unknown	Aug-71	Unknown	410,736	509	420
Riviera		City of Riviera Beach 33/42S/43E									620,840	569	565
	3		ST	FO6	NG	WA	PL	Unknown	Jun-62	Unknown	310,420	283	281
	4		ST	FO6	NG	WA	PL	Unknown	Mar-63	Unknown	310,420	286	284

1/ These ratings are peak capability.

Schedule 1

Existing Generating Facilities
As of December 31, 2002

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
						Fuel		Alt. Fuel	Commercial	Expected	Gen.Max.	Net Capability 1/	
Plant Name	Unit No.	Location	Unit Type	Fuel Pri.	Fuel Alt.	Transport Pri.	Transport Alt.	Days Use	In-Service Month/Year	Retirement Month/Year	Nameplate KW	Winter MW	Summer MW
Martin		Martin County 29/29S/38E									3,312,000	2,995	2,850
	1		ST	NG	FO6	PL	PL	Unknown	Dec-80	Unknown	863,000	830	818
	2		ST	NG	FO6	PL	PL	Unknown	Jun-81	Unknown	863,000	812	799
	3		CC	NG	No	PL	No	Unknown	Feb-94	Unknown	612,000	495	467
	4		CC	NG	No	PL	No	Unknown	Apr-94	Unknown	612,000	496	468
	8 A & B		CT	NG	FO2	PL	PL	Unknown	Jun-01	Unknown	362,000	362	298
St. Lucie		St. Lucie County 16/36S/41E									1,553,000	1,579	1,553
	1		NP	UR	No	TK	No	Unknown	May-76	Unknown	839,000	853	839
	2	2/	NP	UR	No	TK	No	Unknown	Jun-83	Unknown	714,000	726	714
Cape Canaveral		Brevard County 19/24S/36F									804,100	812	806
	1		ST	FO6	NG	WA	PL	Unknown	Apr-65	Unknown	402,050	406	403
	2		ST	FO6	NG	WA	PL	Unknown	May-69	Unknown	402,050	406	403
Sanford		Volusia County 16/19S/30E									1,754,350	1,161	1,048
	3		ST	FO6	NG	WA	PL	Unknown	May-59	Unknown	150,250	142	138
	4	3/	ST	FO6	NG	WA	PL	Unknown	Jul-72	Unknown	436,100	0	0
	5		CC	NG	No	PL	No	Unknown	Jul-73	Unknown	1,168,000	1,019	910
Putnam		Putnam County 16/10S/27E									580,000	594	498
	1		CC	NG	FO2	PL	WA	Unknown	Apr-78	Unknown	290,000	297	249
	2		CC	NG	FO2	PL	WA	Unknown	Aug-77	Unknown	290,000	297	249

1/ These ratings are peak capability.

2/ Total capability is 853/839 MW. Capabilities shown represent the company's share of the unit and exclude the Orlando Utilities Commission (OUC) and Florida Municipal Power Agency (FMPA) combined portion of 14.89551%.

3/ This unit has been temporarily removed from service as part of the repowering project.

Schedule 1

Existing Generating Facilities
As of December 31, 2002

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
						Fuel		Alt. Fuel	Commercial	Expected	Gen.Max.	Net Capability 1/	
Plant Name	Unit No.	Location	Unit Type	Fuel Pri.	Fuel Alt.	Transport Pri.	Transport Alt.	Days Use	In-Service Month/Year	Retirement Month/Year	Nameplate KW	Winter MW	Summer MW
Fort Myers		Lee County 35/43S/25E									2,483,000	2,345	2,059
	2		CC	NG	No	PL	No	Unknown	Jun-02	Unknown	1,739,000	1,576	1,423
	1-12		CT	FO2	No	WA	No	Unknown	May-74	Unknown	744,000	769	636
Manatee		Manatee County 18/33S/20E									1,726,600	1,634	1,620
	1		ST	FO6	No	WA	No	Unknown	Oct-76	Unknown	863,300	817	810
	2		ST	FO6	No	WA	No	Unknown	Dec-77	Unknown	863,300	817	810
St. Johns River Power Park 2/		Duval County 12/15/28E (RPC4)									250,000	260	254
	1		BIT	BIT et Col		RR	WA	Unknown	Mar-87	Unknown	125,000	130	127
	2		BIT	BIT et Col		RR	WA	Unknown	May-88	Unknown	125,000	130	127
Scherer 3/		Monroe, GA									891,000	666	658
	4		BIT	BIT	No	RR	No	Unknown	Jul-89	Unknown	891,000	666	658
									Total System as of December 31, 2002 =			18,749	17,641

1/ These ratings are peak capability.

2/ The net capability ratings represent Florida Power & Light Company's share of St. Johns River Park Unit No. 1 and No. 2, excluding Jacksonville Electric Authority (JEA) share of 80%.

3/ These ratings represent Florida Power & Light Company's share of Scherer Unit No. 4, adjusted for transmission losses.

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CHAPTER II

Forecast of Electric Power Demand

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II. Forecast of Electric Power Demand

Long-term (20-year) forecasts of sales, net energy for load (NEL), and peak loads are developed on an annual basis for resource planning work at FPL. These forecasts are a key input to the models used to develop the Integrated Resource Plan. The following pages describe how forecasts are developed for each component of the long-term forecast: sales, NEL, and peak loads.

The primary drivers to develop these forecasts are demographic trends, weather, economic conditions, and prices of electricity. In addition, the resulting forecasts are an integration of economic evaluations, inputs of local economic development boards, weather assessments from NOAA, and inputs from FPL's own customer service planning areas. In the area of demographics, population trends by county, plus housing characteristics such as housing starts, housing size, and vintage of homes are assessed.

Forecasts for electric usage in the residential and commercial classes include end-use information such as appliance saturation studies, efficiencies, and intensity of energy use. In addition to these inputs, residential forecasts also make use of household characteristics such as ages of members in households, number of members in households, and income distributions.

The projections for the National and Florida economy are obtained from Global Insight, formerly know as DRI - WEFA. Population projections for the counties served by FPL are obtained from the Bureau of Economic and Business Research (BEBR) of the University of Florida. In addition, FPL actively participates with local development councils and universities to obtain their assessments of the local economy, specifically in the area of expansion of new businesses and retention of the current business base. These inputs are quantified and qualified using statistical models in terms of their impact on the future demand for electricity.

Weather is a key factor that affects the company's sales and peak demand. Weather variables are used in the forecasting models for energy sales and peak demand. There are two sets of weather variables developed and used in forecasting models:

1. Cooling and Heating Degree-Days are used to forecast energy sales.
2. Temperature data is used to forecast Summer and Winter peaks.

The Cooling and Heating Degree-Days are used to capture the changes in the electric usage of weather-sensitive appliances such as air conditioners and electric heaters. A composite temperature is derived using hourly temperatures across FPL's service territory (Miami, Ft. Myers, Daytona Beach, and West Palm Beach are the locations from which temperatures are obtained) weighted by regional energy sales. This composite temperature is used to derive Cooling and Heating Degree-Days which are based on starting point temperatures of 72°F and 66°F, respectively. Similarly, the maximum and minimum of the composite temperature is used for the Summer and Winter peak models.

II.A. Long-Term Sales Forecasts

Long-term forecasts of electricity sales are developed for each revenue class for the forecasting period of 2003 - 2022 and are adjusted to match the Net Energy for Load (NEL) forecast. The results of these sales forecasts for the years 2003 - 2012 are presented in Schedules 2.1 - 2.3 which appear at the end of this chapter. Econometric models are developed for each revenue class using the statistical tool MetrixND. The methodologies used to develop sales forecasts for each jurisdictional revenue class are outlined below.

The first five years of the forecasts are developed using monthly models for Net Energy for Load and energy sales by class.

1. Residential Sales

Residential energy sales are forecast by multiplying the residential use per customer forecast by the number of residential customers forecasted. Residential electric usage per customer is estimated by using a regression model which contains the real residential price of electricity, Florida per capita income, and Cooling and Heating Degree-Days as explanatory variables. The price of electricity plays a role in explaining electric usage since electricity, like all other goods and services, will be used in greater or lesser quantities depending upon its price. The Cooling Degree-Days variable is multiplied by the level of air conditioning saturation and the Heating Degree-Days variable is multiplied by the

level of electric heating saturation. To capture economic conditions the model includes Florida's per capita income. The degree of economic prosperity can, and does, affect residential electricity sales. For the short-term period (first five years), an econometric model is developed using monthly data. The monthly model is a function of the same variables such as Cooling Degree-Days, Heating Degree-Days, price of electricity, Florida's per capita income, and a dummy variable for the months of April, May, and October.

2. Commercial Sales

The commercial sales forecast is also developed using a regression model for the long-and short-term. Commercial sales are a function of the following variables: Florida's commercial employment, commercial real price of electricity, Cooling Degree-Days and an autoregressive term. Florida's commercial employment is used to capture the economic activity in FPL's service territory. The price of electricity is also included as an explanatory variable in the model because it has an impact on customer usage. Cooling Degree-Days are used to capture weather-sensitive load in the commercial sector. The first five years of the forecast are developed from a monthly model using the same explanatory variables, and for the following years, growth rates from the annual model are applied.

3. Industrial Sales

Industrial sales are forecasted through a linear multiple regression model using Florida manufacturing employment, the price of electricity, and a dummy variable for the economic recessions. Energy sales in this revenue class are primarily due to manufacturers; therefore, employment in this sector is a key variable in capturing the economic activity. The price of electricity is also included as an explanatory variable in the model because it has an impact on customer usage. For the short-term period (first five years), an econometric model is developed using monthly data. The monthly model is a function of the same variables such as Florida manufacturing employment, Cooling Degree-Days, price of electricity, and an autoregressive term. For the following years, growth rates from the annual model are applied.

4. Other Public Authority Sales

At present, this class consists of sports fields and one government account. The forecast for this class is based on historical knowledge of its characteristics.

5. Street & Highway Sales and Railroad & Railways Sales

The forecast for Street and Highway sales is developed by first assuming a constant use per customer and then multiplying that value by the number of projected customers.

The forecast of sales to Railroad & Railways is based on historical knowledge of its characteristics. This class consists of Miami-Dade County's Metrorail system.

6. Resale Sales

Resale (Wholesale) customers are composed of municipalities and/or electric cooperatives. These customers differ from jurisdictional customers in that they are not the ultimate users of the electricity they buy. Instead, they resell this electricity to their own customers.

Contract Rate

Currently, there are four customers in this class: the Florida Keys Electric Cooperative (Florida Keys), City Electric System of the Utility Board of Key West, Florida (City of Key West), Miami-Dade County, and FMPA. Sales to the Florida Keys are forecasted using a regression model. Forecasted sales to the City of Key West are based on assumptions regarding their contract demand and expected load factor. Miami-Dade County sells 60 MW to Florida Power Corporation. Line losses are billed to Miami-Dade under a wholesale contract. The forecast is calculated based on assumptions about the magnitude of line losses, the sales monthly capacity factor, and the number of hours in a particular month. FMPA has contracted for delivery of 75 MW through October 2007.

Total Sales

Sales forecasts by revenue class are summed to produce a total sales forecast. After an estimate of annual total sales is obtained, an expansion factor is applied to generate a forecast of annual Net Energy for Load (NEL).

II.B. Net Energy for Load

An annual econometric model is developed to produce a Net Energy for Load (NEL) forecast. The key inputs to the model are: the price of electricity, Heating and Cooling Degree-Days, Florida Non-Agricultural Employment, and an autoregressive term. The monthly model is similar, except the economic variable utilized is Florida's per capita income since the model is estimated on a per customer basis. Like the sales forecasts, the first five years are obtained from the short-term model, and forecasts for subsequent years are generated using the growth rates from the annual model.

Once an annual NEL forecast is obtained using the above-mentioned methodology, the results are then compared for reasonableness to the NEL forecast generated using the total sales forecast. The sales by class are then adjusted to match the NEL from the annual NEL model.

The forecasted NEL values for 2003 – 2012 are presented in Schedule 3.3, that appears at the end of this chapter.

II.C. System Peak Forecasts

The rate of absolute growth in FPL system load has been a function of a larger customer base, varying weather conditions, continued economic growth, changing patterns of customer behavior (including an increased stock of electricity-consuming appliances), and more efficient heating and cooling appliances. FPL developed the Peak Forecast models to capture these behavioral relationships.

The forecasting methodology of Summer, Winter, and monthly system peaks is discussed below. The forecasted values for Summer and Winter peak loads for the years 2003 – 2012 are presented in Schedules 3.1 and 3.2 as well as in Schedules 7.1 and 7.2.

System Summer Peak

The Summer peak forecast is developed using an econometric model. The model is a per customer model that includes: the total number of FPL's customers, the price of electricity, Real Florida income as an economic driver, and the maximum temperature as a weather variable. Also included in the model is an autoregressive term.

System Winter Peak

Like the system Summer peak model, the Winter peak model is also an econometric model. The Winter peak model is a per customer model which consists of three weather-related variables: (1) the minimum Winter day temperature, (2) a weather term, which is a ratio of heating saturation and minimum Winter day temperature, and (3) Heating Degree-Hours for the prior day until 9:00 a.m. of the peak day. In addition, the model also uses an economic variable, Real Florida Income. A dummy variable, which is used to capture the effects of larger homes, is multiplied by the minimum temperature.

Monthly Peak Forecasts

Monthly peaks for the 2003-2022 period are forecasted to provide information for the scheduling of maintenance for power plants and fuel budgeting. The forecasting process is basically the same as for the monthly NEL forecast and consists of the following actions:

a. Develop the historical seasonal factor for each month by using ratios of historical monthly peaks to seasonal peak (Summer = April-October, Winter = November-March.)

b. Apply the monthly ratios to their respective seasonal peak forecast to derive the peak forecast by month. This process assumes that the seasonal factors remain unchanged over the forecasting period.

II.D. The Hourly Load Forecast

Forecasted values for system hourly load for the period 2003 – 2022 are produced using a System Load Forecasting "shaper" program. This model uses sixteen years of historical FPL hourly system load data to develop load shapes for weekdays, weekend days, and holidays. These daily load shapes are ranked and used with forecasted monthly peaks, NEL, and calendars in developing an hourly forecast. The model allows calibration of hourly values where the peak is maintained or where both the peak and minimum load-to-peak ratio is maintained.

Schedule 2.1
History and Forecast of Energy Consumption
And Number of Customers by Customer Class

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		Rural & Residential				Commercial		
Year	Population*	Members per Household	GWH	Average** No. of Customers	Average KWH Consumption Per Customer	GWH	Average** No. of Customers	Average KWH Consumption Per Customer
1993	6,486,127	2.18	36,360	2,975,479	12,220	28,508	358,679	79,481
1994	6,660,137	2.19	38,716	3,037,629	12,745	29,946	366,409	81,729
1995	6,806,337	2.20	40,556	3,097,192	13,094	30,719	374,005	82,135
1996	6,948,942	2.20	41,302	3,152,625	13,101	31,211	380,860	81,949
1997	7,105,582	2.21	41,849	3,209,298	13,040	32,942	388,906	84,703
1998	7,249,617	2.22	45,482	3,266,011	13,926	34,618	396,749	87,255
1999	7,412,734	2.22	44,187	3,332,422	13,260	35,524	404,942	87,725
2000	7,603,543	2.23	46,320	3,414,002	13,568	37,001	415,295	89,096
2001	7,754,966	2.22	47,588	3,490,541	13,633	37,960	426,573	88,989
2002	7,896,813	2.21	50,865	3,566,167	14,263	40,029	435,313	91,955
2003	8,039,781	2.21	51,350	3,632,433	14,137	41,124	444,700	92,477
2004	8,184,322	2.21	53,373	3,695,370	14,443	42,574	454,728	93,625
2005	8,328,360	2.22	55,004	3,758,193	14,636	43,701	464,926	93,995
2006	8,471,579	2.22	56,923	3,821,542	14,895	44,852	475,338	94,358
2007	8,614,099	2.22	58,245	3,882,687	15,001	45,983	484,370	94,934
2008	8,756,620	2.22	59,842	3,944,810	15,170	47,024	492,604	95,461
2009	8,898,722	2.22	60,846	4,002,441	15,202	48,065	500,486	96,036
2010	9,041,109	2.23	62,244	4,060,676	15,328	49,157	507,970	96,772
2011	9,184,069	2.23	63,629	4,118,959	15,448	50,092	515,299	97,210
2012	9,328,059	2.23	64,921	4,176,707	15,544	51,010	522,503	97,627

* Population represents only the area served by FPL.

** Average No. of Customers is the annual average of the twelve month values.

Schedule 2.2
History and Forecast of Energy Consumption
And Number of Customers by Customer Class

(1)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
		Industrial		Railroads & Railways	Street & Highway Lighting	Other Sales to Public Authorities	Total** Sales to Ultimate Consumers
Year	GWH	Average* No. of Customers	Average KWH Consumption Per Customer	GWH	GWH	GWH	GWH
1993	3,889	14,866	261,602	79	330	665	69,830
1994	3,845	15,588	246,658	85	353	664	73,608
1995	3,883	15,140	256,481	84	358	648	76,248
1996	3,792	14,783	256,515	83	368	577	77,334
1997	3,894	14,761	263,830	85	383	702	79,855
1998	3,951	15,126	261,233	81	373	625	85,131
1999	3,948	16,040	246,112	79	473	465	84,676
2000	3,768	16,410	229,592	81	408	381	87,959
2001	4,091	15,445	264,872	86	419	67	90,212
2002	4,057	15,533	261,199	89	420	63	95,523
2003	3,974	15,663	253,732	89	434	63	97,035
2004	4,036	15,459	261,051	89	440	63	100,574
2005	4,094	15,302	267,523	90	447	63	103,397
2006	4,145	15,185	272,974	90	453	63	106,525
2007	4,165	15,186	274,281	90	463	63	109,010
2008	4,187	15,238	274,770	91	473	63	111,680
2009	4,200	15,275	274,939	91	483	63	113,748
2010	4,214	15,313	275,194	92	493	63	116,262
2011	4,231	15,372	275,212	92	503	63	118,609
2012	4,246	15,377	276,133	93	512	63	120,845

*Average No.of Customers is the annual average of the twelve month values.
**GWH Col. (16)=Col. (4) + Col. (7) + Col. (10) + Col. (13) + Col. (14) + Col. (15).

Schedule 2.3
History and Forecast of Energy Consumption
And Number of Customers by Customer Class

(1)	(17)	(18)	(19)	(20)	(21)
Year	Sales for Resale GWH	Utility Use & Losses GWH	Net* Energy For Load GWH	Average ** No. of Other Customers	Total Average*** Number of Customers
1993	958	4,988	75,776	3,086	3,352,110
1994	1,400	5,367	80,376	2,560	3,422,187
1995	1,437	6,276	83,961	2,460	3,488,796
1996	1,353	5,984	84,671	2,480	3,550,748
1997	1,228	5,770	86,853	2,520	3,615,485
1998	1,326	6,205	92,662	2,584	3,680,470
1999	953	5,829	91,458	2,605	3,756,009
2000	970	7,059	95,989	2,694	3,848,401
2001	970	7,222	98,404	2,722	3,935,281
2002	1,233	7,443	104,199	2,792	4,019,805
2003	1,422	7,243	105,700	2,832	4,095,628
2004	1,441	7,510	109,525	2,865	4,168,421
2005	1,456	7,711	112,565	2,906	4,241,326
2006	1,474	7,942	115,942	2,941	4,315,007
2007	1,459	7,960	118,430	3,002	4,385,245
2008	1,092	8,126	120,899	3,061	4,455,713
2009	1,092	8,275	123,115	3,120	4,521,322
2010	1,092	8,456	125,811	3,178	4,587,137
2011	1,092	8,625	128,327	3,234	4,652,864
2012	1,092	8,787	130,724	3,289	4,717,877

* GWH Col. (19) = Col. (16) + Col. (17) + Col. (18)

** Average Number of Customers is the annual average of the twelve month values.

*** Total Col. (21) = Col. (5) + Col. (8) + Col. (11) + Col. (20)

Schedule 3.1
History and Forecast of Summer Peak Demand: Base Case

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Wholesale	Retail	Interruptible	Res. Load Management	Residential Conservation	C/I Load Management	C/I Conservation	Net Firm Demand
1993	15,266	397	14,869	0	311	182	320	79	14,635
1994	15,179	409	14,770	0	392	220	354	125	14,433
1995	16,172	435	15,737	0	466	259	391	193	15,315
1996	16,064	364	15,700	0	531	339	414	296	15,119
1997	16,613	380	16,233	0	615	440	432	341	15,566
1998	17,897	426	17,471	0	656	480	441	359	16,800
1999	17,615	169	17,446	0	722	565	450	397	16,443
2000	17,808	161	17,647	0	767	626	456	432	16,585
2001	18,754	169	18,585	0	798	673	483	463	17,473
2002	19,219	261	18,958	0	826	733	484	499	17,909
2003	19,773	225	19,548	0	796	43	569	22	18,343
2004	20,297	227	20,070	0	802	84	582	42	18,787
2005	20,799	230	20,569	0	809	126	592	62	19,210
2006	21,331	231	21,100	0	814	170	600	83	19,664
2007	21,851	234	21,617	0	819	214	608	103	20,107
2008	22,289	159	22,130	0	824	259	616	122	20,468
2009	22,784	159	22,625	0	828	306	622	141	20,888
2010	23,294	159	23,135	0	830	321	623	148	21,372
2011	23,783	159	23,624	0	830	321	623	148	21,861
2012	24,279	159	24,120	0	830	321	623	148	22,357

Historical Values (1993 - 2002):

Cols. (2) - (4) are actual values for historical summer peaks. As such, they incorporate the effects of conservation (Cols. (7&9)), and may incorporate the effects of load control if load control was operated on these peak days. Therefore, Col. (2) represents the actual Net Firm Demand.
Cols. (5) - (9) represent actual DSM capabilities starting from January 1988.
Note that the values for FPL's former Interruptible Rate are incorporated into Col. (8), which also includes GS-LC, CDR and GSD-LC.
Col. (10) represents a HYPOTHETICAL "Net Firm Demand" if the load control values had definitely been exercised on the peak. Col. (10) is derived by the formula:Col. (10) =Col.(2) - Col.(6) - Col.(8).

Projected Values (2003 - 2012):

Cols. (2) - (4) represent FPL's forecasted peak w/o incremental conservation or cumulative load control. The effects of conservation implemented prior to 2002 are incorporated into the forecast.
Cols. (5) - (9) represent all incremental conservation and cumulative load control. These values are projected August values and are based on projections with a 1/2002 starting point.
Col. (10) represents a 'Net Firm Demand" which accounts for all of the incremental conservation and assumes all of the load control is implemented on the peak. Col. (10) is derived by using the formula: Col. (10) = Col. (2) - Col. (5) - Col. (6) - Col. (7) - Col. (8) - Col. (9).

Schedule 3.2
History and Forecast of Winter Peak Demand:Base Case

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Firm Wholesale	Retail	Interruptible	Res. Load Management	Residential Conservation	C/I Load Management	C/I Conservation	Net Firm Demand
1993/94	12,594	278	12,316	0	317	231	342	67	11,935
1994/95	16,563	635	15,928	0	393	265	360	93	15,810
1995/96	18,096	698	17,398	0	459	310	406	143	17,231
1996/97	16,490	626	15,864	0	731	368	418	154	15,341
1997/98	13,060	239	12,821	0	823	403	429	168	11,807
1998/99	16,802	149	16,653	0	1,218	438	417	182	15,167
1999/00	17,057	142	16,915	0	1,296	469	441	193	15,320
2000/01	18,199	150	18,049	0	972	493	448	201	16,779
2001/02	17,597	145	17,452	0	1,081	534	457	242	16,060
2002/03	20,190	246	19,944	0	1,116	581	453	288	18,621
2003/04	20,081	206	19,875	0	932	80	534	15	18,520
2004/05	20,583	208	20,375	0	939	114	540	22	18,968
2005/06	21,100	209	20,891	0	946	149	546	29	19,430
2006/07	21,605	212	21,393	0	952	183	551	37	19,882
2007/08	22,046	137	21,909	0	958	218	556	44	20,270
2008/09	22,539	137	22,402	0	964	252	561	51	20,712
2009/10	23,026	137	22,889	0	968	284	564	57	21,153
2010/11	23,522	137	23,385	0	968	284	564	57	21,649
2011/12	24,024	137	23,887	0	968	284	564	57	22,151
2012/13	24,535	137	24,398	0	968	284	564	57	22,663

Historical Values (1993/94 - 2002/03):

Cols. (2) - (4) are actual values for historical winter peaks. As such, they incorporate the effects of conservation (Cols. (7&9)), and may incorporate the effects of load control if load control was operated on these peak days. Therefore, Col. (2) represents the actual Net Firm Demand.
Cols. (5) - (9) represent actual DSM capabilities starting from January 1988.
Note that the values for FPL's former Interruptible Rate are incorporated into Col. (8), which also includes GS-LC, CDR and GSD - LC.
Col. (10) represents a HYPOTHETICAL "Net Firm Demand" if the load control values had definitely been exercised on the peak. Col. (10) is derived by the formula: Col. (10) = Col. (2) - Col. (6) - Col. (8).

Projected Values (2003/04 - 2012/13):

Cols. (2) - (4) represent FPL's forecasted peak w/o incremental conservation or cumulative load control. The effects of conservation implemented prior to 2002 are incorporated into the forecast.
Cols. (5) - (9) represent all incremental conservation and cumulative load control. These values are projected January values and are based on projections with a 1/2002 starting point.
Col. (10) represents a 'Net Firm Demand" which accounts for all of the incremental conservation and assumes all of the load control is implemented on the peak. Col. (10) is derived by using the formula: Col. (10) = Col. (2) - Col. (5) - Col. (6) - Col. (7) - Col. (8) - Col. (9).

Schedule 3.3
History and Forecast of Annual Net Energy for Load - GWH: Base Case

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Year	Total	Residential Conservation	C/I Conservation	Retail	Sales for Resale GWH	Utility Use & Losses	Net Energy For Load	Load Factor(%)
1993	76,632	553	303	75,674	958	4,988	75,776	56.7%
1994	81,493	661	456	80,093	1,400	5,367	80,376	60.4%
1995	85,415	777	677	83,978	1,437	6,276	83,961	59.3%
1996	86,708	971	1,039	85,355	1,353	5,984	84,698	60.0%
1997	89,240	1,213	1,174	88,012	1,228	5,770	86,853	59.7%
1998	95,316	1,374	1,279	93,990	1,326	6,205	92,663	59.1%
1999	94,361	1,542	1,362	93,408	953	5,829	91,458	59.3%
2000	99,094	1,674	1,431	98,123	970	7,059	95,989	61.5%
2001	101,736	1,789	1,542	100,765	970	7,222	98,404	59.9%
2002	107,754	1,917	1,637	106,520	1,233	7,443	104,199	61.9%
2003	105,700	53	17	104,278	1,422	7,243	105,630	61.0%
2004	109,525	145	52	108,084	1,441	7,510	109,328	61.6%
2005	112,565	238	88	111,108	1,456	7,711	112,239	61.8%
2006	115,942	334	124	114,468	1,474	7,942	115,484	62.0%
2007	118,430	430	159	116,970	1,459	7,960	117,841	61.9%
2008	120,899	529	193	119,807	1,092	8,126	120,177	61.9%
2009	123,115	629	225	122,023	1,092	8,275	122,261	61.7%
2010	125,811	671	240	124,719	1,092	8,456	124,900	61.7%
2011	128,327	671	240	127,235	1,092	8,625	127,416	61.6%
2012	130,724	671	240	129,631	1,092	8,787	129,813	61.5%

Historical Values (1993 - 2002):

Col. (2) represents derived "Total Net Energy For Load w/o DSM". The values are calculated using the formula: Cols. (2) =(3) + (4) + (8).
Cols. (3) & (4) are DSM values starting in January, 1988 through 2002 which contributed to the values in Cols. (5) - (9).
Cols. (5) & (6) are a breakdown of Net Energy For Load in Col (2) into Retail and Wholesale .
Col. (9) is calculated using Col. (8) from this page and Col. (2), "Total", from Schedule 3.1. Col. (9) = ((Col. (8)*1000) / ((Col.(2) * 8760)

Projected Values (2003 - 2012):

Col. (2) represents Net Energy for Load w/o DSM values. The values are calculated using the formula: Cols. (2) =(3) + (4) + (8).
Cols. (3) - (4) are forecasted values of the reduction on sales from incremental conservation.
Cols. (5) & (6) are a breakdown of Net Energy For Load in Col (2) , into Wholesale and Retail .
Col. (9) is calculated using Col. (2) from this page and Col. (2), "Total", from Schedule 3.1. Col. (9) = ((Col. (2)*1000) / ((Col. (2) * 8760)

Schedule 4
Previous Year Actual and Two-Year Forecast of
Retail Peak Demand and Net Energy for Load (NEL) by Month

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	2002 ACTUAL		2003* FORECAST		2004* FORECAST	
Month	Total Peak Demand MW	NEL GWH	Total Peak Demand MW	NEL GWH	Total Peak Demand MW	NEL GWH
JAN	17,597	7,588	20,190	8,248	20,081	7,959
FEB	13,851	6,524	16,828	6,878	16,737	7,959
MAR	15,459	7,866	15,538	7,735	15,454	8,000
APR	16,862	8,570	16,398	8,125	16,833	8,358
MAY	18,067	9,019	18,128	8,991	18,609	9,221
JUN	18,574	9,262	18,999	9,845	19,503	10,193
JUL	19,084	9,660	19,337	10,310	19,849	10,636
AUG	19,219	10,412	19,773	10,431	20,297	10,825
SEP	19,152	10,330	19,180	10,178	19,689	10,503
OCT	18,172	9,574	17,838	9,004	18,311	9,339
NOV	17,588	8,101	16,928	8,030	16,837	8,351
DEC	14,221	7,294	17,271	7,924	17,178	8,181
TOTALS		104,199		105,700		109,525

* Forecasted Peaks & NEL do not include the impacts of cumulative load management and incremental conservation.

CHAPTER III

Projection of Incremental Resource Additions

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III. Projection of incremental Resource Additions

III.A FPL's Resource Planning:

FPL developed an integrated resource planning (IRP) process in the early 1990's and has since utilized the process to determine when new resources are needed, what the magnitude of the needed resources are, and what type of resources should be added. The timing and type of potential new power plants, the primary subjects of this document, are determined as part of the IRP process work. This section discusses how FPL applied this process in its 2002 and early 2003 planning work.

Four Fundamental Steps of FPL's Resource Planning:

There are 4 fundamental "steps" to FPL's resource planning. These steps can be described as follows:

Step 1: Determine the magnitude and timing of FPL's new resource needs;

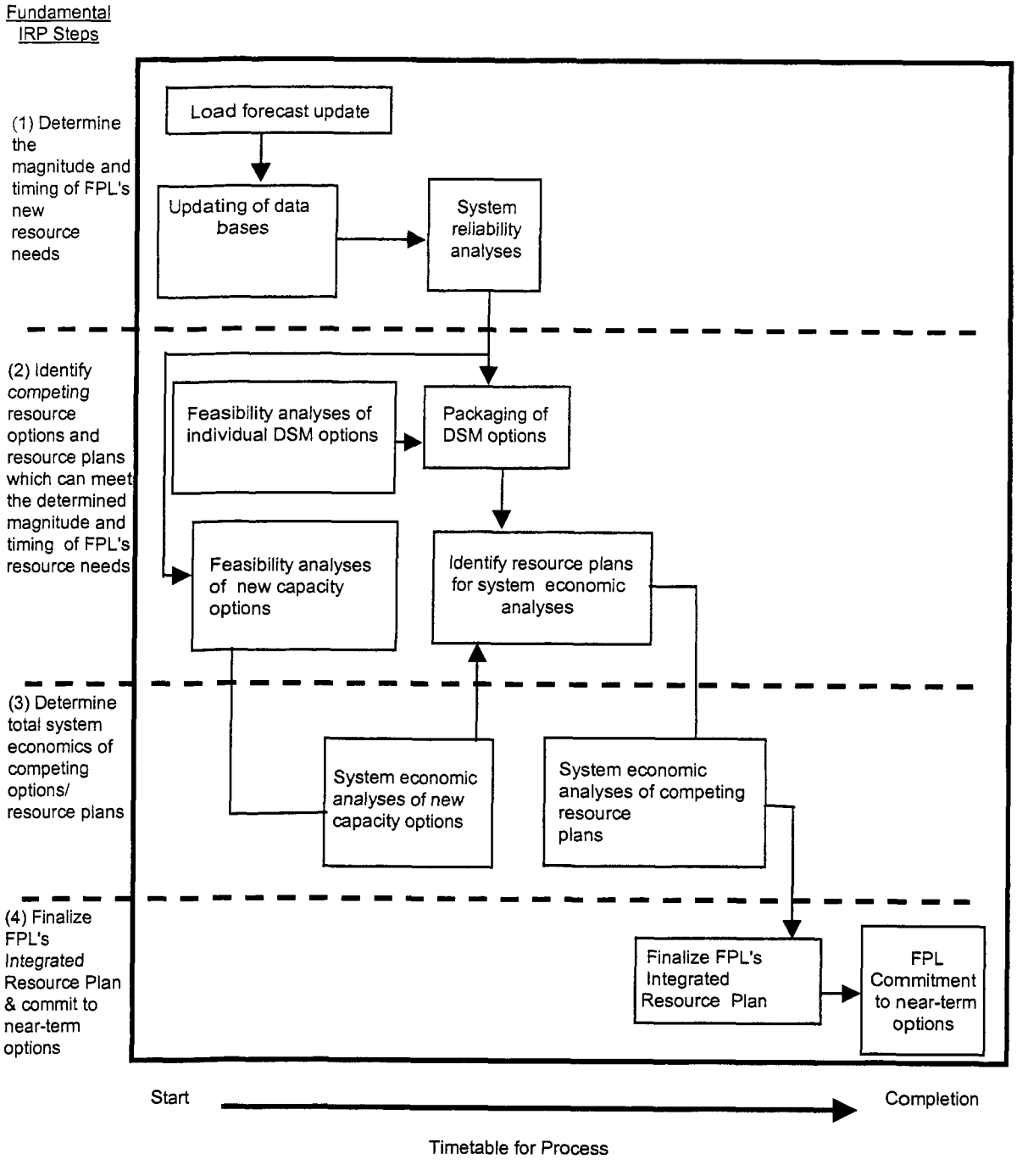
Step 2: Identify which resource options and resource plans can meet the determined magnitude and timing of FPL's resource needs (i.e., identify competing options and resource plans;

Step 3: Determine the economics for the total utility system with each of the competing options and resource plans; and,

Step 4: Select a resource plan and commit, as needed, to near-term options.

Figure III.A.1 graphically outlines the 4 steps.

Overview of FPL's IRP Process



(Normal time period: approx. 6-7 months)

Figure III.A.1

Step 1: Determine the Magnitude and Timing of FPL's New Resource Needs:

The first of these four resource planning steps – determining the magnitude and timing of FPL's resource needs – is essentially a determination of how many megawatts (MW) of load reduction, new capacity additions, or a combination of both load reduction and new capacity additions are needed. Also determined in this step is when the MW are needed to meet FPL's planning criteria. This step is often referred to as a reliability assessment for the utility system.

Step 1 starts with an updated load forecast. Several databases are also updated in this first fundamental step, not only with the new information regarding forecasted loads, but also with other information which is used in many of the fundamental steps in resource planning. Examples of this new information include: delivered fuel price projections, current financial and economic assumptions, and power plant capability and reliability assumptions. During its recent IRP work, FPL utilized four assumptions regarding near-term construction capacity additions, short-term, firm capacity purchase additions, long-term DSM implementation, and the projected extension or renegotiation of the UPS contracts.

The first of these assumptions is based on FPL's announced plans to add near-term capacity through various construction projects. These construction projects include the repowering of an existing unit and the addition of several new units. FPL committed in 1998 to repower both existing steam units at its Fort Myers plant site and two of the three existing steam units at its Sanford plant site. The Fort Myers repowering work is completed, as is the repowering work of one of the Sanford units. The repowering of the other Sanford unit (Unit # 4) will be completed by mid-2003. This Sanford repowering was a "given" in FPL's resource planning work.

Another part of FPL's construction capacity addition assumption was its previously announced decision to add two new CT's during 2003 at FPL's existing Fort Myers site. FPL's resource planning work assumed that this capacity addition would also be a "given".

The final part of FPL's construction capacity addition assumption was the addition of a new combined cycle (CC) unit at Manatee and the conversion of two existing CT's at Martin into a new combined cycle unit. Both additions are scheduled for

mid-2005. Both capacity additions were approved by the Florida Public Service Commission in November 2002 after comparing them to 134 competing bids that were received in response to two Requests for Proposals (RFP's) that solicited bids for meeting FPL's 2005/2006 capacity needs.

The second of these assumptions involves short-term, firm capacity purchase additions. FPL decided through its 2000 resource planning work to secure an amount of purchase capacity for the next few years through short-term, firm capacity purchases. These firm capacity purchases are from a combination of utility and independent power producers. The total capacity and duration of these purchases have changed somewhat from what was presented in last year's Site Plan. These changes are due to two factors: new information regarding transmission limitations for several of the new capacity purchases, and a decision to secure additional short-term purchase capacity for 2004 due to the termination of one of the previously signed short-term purchases. The annual total capacity values for these purchases are presented in Table I.D.1. These purchase amounts were also assumed as a "given" in FPL's resource planning work.

The third of these assumptions involves DSM. Since 1994, FPL's resource planning work has used the DSM MW called for in FPL's approved DSM goals as a "given" in its analyses. This was again the case in FPL's most recent planning work, as its approved DSM goals through the year 2009 were taken as a "given".

The fourth of these assumptions is a projected extension or renegotiation of the UPS purchases that are currently scheduled to end in 2010. No final decision has been reached on this matter, but FPL has initiated discussions with Southern Company regarding a possible extension or renegotiation of these purchases. The inclusion, for planning purposes, of the assumption that these coal-by-wire purchases will continue beyond the current expiration date reflects an interest in maintaining/enhancing fuel diversity in FPL's system.

The first place in which these assumptions and much of the other updated information and assumptions are used is the first fundamental step: the determination of the magnitude and the timing of FPL's resource needs. This determination is accomplished by system reliability analyses which are typically based on a dual planning criteria of a minimum peak period reserve margin of 15% (FPL applies this to both Summer and Winter peaks) and a maximum loss-of-load

probability (LOLP) of 0.1 day per year. Both of these criteria are commonly used throughout the utility industry. The reserve margin criterion increases from 15% to 20% starting in mid-2004 due to a voluntary agreement reached among FPL, FPC, and TECO, and accepted by the FPSC in the FPSC's Docket No. 981890-EU.

Historically, two types of methodologies, deterministic and probabilistic, have been employed in system reliability analysis. The calculation of excess firm capacity at the annual system peaks (reserve margin) is the most common method, and this relatively simple deterministic calculation can be performed on a spreadsheet. It provides an indication of how well a generating system can meet its native load during peak periods. However, deterministic methods do not take into account probabilistic-related elements such as: unit numbers and sizes (i.e., two 50 MW units which can be counted on to run 90% of the time are more valuable in regard to utility system reliability than is one 100 MW unit which can also be counted on to run 90% of the time); and the value of being part of an interconnected system.

Therefore, probabilistic methodologies have been used to provide additional information on the reliability of a generating system. There are a number of probabilistic methods that are being used to perform system reliability analyses. Of these, the most widely used is loss-of-load probability or LOLP. Simply stated, LOLP is an index of how well a generating system may be able to meet its demand (i.e., a measure of how often load may exceed available resources). In contrast to reserve margin, the calculation of LOLP looks at the daily peak demands for each year, while taking into consideration such probabilistic events as the unavailability of individual generators due to scheduled maintenance or forced outages.

LOLP is expressed in units of the "number of times per year" that the system demand could not be served. The standard for LOLP accepted throughout the industry is a maximum of 0.1 day per year. This analysis requires a more complicated calculation methodology than does the reserve margin analysis. LOLP analyses are typically carried out using the Tie Line Assistance and Generation Reliability (TIGER) model.

The end result of the first fundamental step of resource planning is a projection of how many new MW of resources are needed to meet both reserve margin and LOLP criteria, and thus maintain system reliability, and of when the MW are needed. This information is used in the second fundamental step: identifying

resource options and resource plans that can meet the determined magnitude and timing of FPL's resource needs.

Step 2: Identify Resource Options and Plans Which can Meet the Determined Magnitude and Timing of FPL's Resource Needs:

The initial activities associated with this second fundamental step of resource planning generally proceed concurrently with the activities associated with Step 1. During Step 2, feasibility analysis of new capacity options are carried out to determine which new capacity options appear to be the most competitive on FPL's system. These analyses also establish capacity size (MW) values, projected construction/permitting schedules, and operating parameters and costs.

The individual new capacity options are then "packaged" into different resource plans which are designed to meet the system reliability criteria. In other words, resource plans are created by combining individual resource options so that the timing and magnitude of FPL's new resource needs are met. The creation of these competing resource plans is typically carried out using dynamic programming techniques. For planning purposes, only FPL construction options were included in FPL's most recent planning analyses.

At the conclusion of the second fundamental resource planning step, a number of different combinations of new resource options (i.e., resource plans) of a magnitude and timing necessary to meet FPL's resource needs were identified. These resource plans were then compared on an economic basis.

Step 3: Determining the Total System Economics:

At the completion of fundamental steps 1 & 2, the most viable new resource options have been identified, and these resource options have been combined into a number of resource plans which meet the magnitude and timing of FPL's resource needs. The stage is set for comparing the system economics of these resource plans. FPL combines the resource options into resource plans using the EGEAS (Electric Generation Expansion Analysis System) computer model from the Electric Power Research Institute (EPRI) and Stone & Webster Management Consultants, Inc. The EGEAS model is also used to perform the basic economic analyses of the resource plans.

The basic economic analyses of the competing resource plans focus on total system economics. The standard basis for comparing the economics of competing resource plans is their relative impact on FPL's electricity rate levels, with the intent of minimizing FPL's leveled system average rate (i.e., a Rate Impact Measure or RIM methodology). However, in cases such as existed for FPL's most recent planning work in which the DSM contribution was taken as a "given" and the only competing options were new generating units, comparisons of competing resource plans' impacts on electricity rates and on system revenue requirements are equivalent. Consequently, the competing options and plans were evaluated on a present value system revenue requirement basis.

The basic economic analyses carried out with the EGEAS model focus on the capital and operating costs of new capacity options plus the impact these new capacity options have on FPL's system fuel costs.

At the conclusion of the analyses carried out in Step 3, a determination of FPL's preferred resource plan was made.

Step 4: Finalizing FPL's Current Resource Plan

The results of the previous three fundamental steps activities were evaluated by FPL management and a decision was made as to what FPL's current resource plan would be. This plan is presented in the following section.

III.B Incremental Resource Additions

FPL's projected incremental generation capacity additions/changes for 2003 through 2012 are depicted in Table III.B.1 (The planned DSM additions are shown separately in Table III.C.1). These capacity additions/changes will result from a variety of actions including: changes to existing units (which are frequently achieved as a result of plant component replacements during major overhauls), changes in the amounts of purchased power being delivered under existing contracts as per the contract schedules or by entering into new purchase contracts, repowering of an existing steam unit, projected construction of new units, and conversion of CT's into a CC unit.

As shown in Table III.B.1, the bulk of the capacity additions are made up of the following items: a completion of the repowering of FPL's Sanford Unit # 4 that is projected to be completed by the Summer, 2003; the construction of two new CT's by mid – 2003 at FPL's existing Fort Myers site; the addition of one or more new short-term purchases for 2004 that replaces a previous purchase agreement; the conversion of two CT's into a larger CC unit in 2005 at FPL's Martin site; the addition of a new CC unit, also in 2005, at FPL's Manatee site; and the construction of four additional CC units in the 2007 through 2012 time frame. Sites for these four CC units that are currently projected to be added in the 2007 through 2012 timeframe have not yet been selected.

Projected Capacity Changes and Reserve Margins for FPL [1]			
		Net Capacity Changes (MW)	
		Winter [2]	Summer [3]
2003	Sanford Repowering # 4: Second Phase [4]	---	957
	Combustion Turbines (2) Fort Myers [5]	---	298
	Purchases [6]	1,097	(140)
	Changes to existing Units	31	(32)
2004	Combustion Turbines (2) Fort Myers [5]	366	---
	Purchases [6]	(156)	44
	New Short-Term Purchase [7]	---	213
	Changes to existing Units	72	283
	Sanford Repowering # 4: Second Phase [4]	1,036	---
2005	Changes to existing QF's	(10)	(10)
	Purchases [6]	(6)	(523)
	Manatee Unit #3 Combined Cycle [8]	---	1,107
	New Short-Term Purchase [7]	---	(213)
	Conversion of MR #8 CT's to CC [8]	(363)	783
2006	Manatee Unit #3 Combined Cycle [8]	1,201	---
	Conversion of MR #8 CT's to CC [8]	1,198	---
	Changes to existing QF's	(133)	(133)
	Purchases [6]	(520)	---
2007	Purchases [6]	---	(474)
	Unsited Combined Cycle # 1 [8]	---	1,107
2008	Purchases [6]	(474)	---
	Unsited Combined Cycle # 1 [8]	1,209	---
	Unsited Combined Cycle # 2 [8]	---	1,107
2009	Unsited Combined Cycle # 2 [8]	1,209	---
	Changes to existing QF's	---	(51)
2010	Unsited Combined Cycle # 3 [8]	---	1,107
	Changes to existing QF's	(51)	(44)
2011	Unsited Combined Cycle # 3 [8]	1,209	---
	Changes to existing QF's	(89)	(45)
2012	Unsited Combined Cycle # 4 [8]	---	1,107
	TOTALS =	6,827	6,449

(1) Additional information about these resulting reserve margins and capacity changes are found on Schedules 7 & 8 respectively.

(2) Winter values are values for January of year shown.

(3) Summer values are values for August of year shown.

(4) The second phase of the repowering consists of integrating the combustion turbines, heat recovery steam generators, and steam turbines.

(5) The two CT's at Fort Myers are scheduled to be in-service in the Spring of 2003. Therefore, the CT's are included in the 2003 Summer reserve margin calculation and are included in the 2004 - on reserve margin for Summer and Winter.

(6) These are firm capacity purchases. See Section I.D and III.A. for more details.

(7) Negotiations are currently underway between FPL and several parties to secure this short - term capacity.

(8) All new combined cycle units are scheduled to be in-service in June of the year shown. Consequently, they are included in the Summer reserve margin calculation for the in-service year and in both the Summer and Winter reserve margin calculations for subsequent years.

Table III.B.1

III.C Other Results of FPL's Recent Planning Work

In the course of FPL's 2002 and early 2003 planning efforts, two issues were identified that are now receiving attention in FPL's on-going resource planing work. Those two issues are: 1) the need to address the growing imbalance in Southeast Florida between regional load and generating capacity located within this region; and 2) the desire to maintain/enhance fuel diversity in the FPL system.

In regard to the first issue, currently there exists a significant imbalance between the very high peak load in the Southeast Florida region of FPL's service territory and the installed generating capacity in that region. Because of the continuing load growth in this region, the imbalance between generation and load will increase significantly during the next few years unless additional generation is sited in the Southeast Florida region.

If a majority of the generation capacity additions required to meet FPL system needs for 2007 and 2008 are not sited in Southeast Florida, FPL expects that in 2009 and 2010 it will have to either add generating capacity within this region, or add substantial amounts of transmission facilities that are likely to be costly to bring power generated outside the region into Southeast Florida in order to continue to reliably serve this load. At present, FPL believes that adding generation capacity within the region is the preferred approach.

The second issue, the desire to maintain/enhance fuel diversity in the FPL system, is not explicitly reflected in the resource plan presented in this Site Plan. The plan to meet capacity needs beyond 2007, reflected in the Tables and Schedules of this document, consists of the construction of three additional CC units in the 2008 through 2012 time frame at sites yet to be selected. However, these resources additions are subject to change.

FPL intends to identify and evaluate alternatives that would enhance fuel diversity in its capacity resource mix. These alternatives include: extending and/or expanding existing solid fuel-based power purchases such as the UPS contract, building new solid fuel-based generation capacity in FPL's system, obtaining access to non-traditional sources of natural gas, such as through suppliers who deliver natural gas to Florida from international sources of production, and

maintaining the ability to utilize fuel oil at FPL's existing units. Therefore, the new gas-fired CC units currently shown as capacity additions for 2008, 2010, and 2012 are subject to change in the future as FPL evaluates the feasibility and cost-effectiveness of various alternatives to enhance fuel diversity.

FPL believes that the earliest that one of these alternatives to enhance fuel diversity, adding new solid fuel-based generating capacity, could be permitted and built in Florida is 2009. In addition, FPL believes it is more likely that such a unit would be sited at some site north of the Southeast Florida region due to permitting and fuel transportation considerations.

As a result, FPL believes that the time and location aspects of these two issues will likely result in an approach in which FPL attempts to address the Southeast Florida imbalance first when it finalizes plans for meeting its 2007 and/or 2008 need. Such an approach would accomplish two things. First, it would address the immediate concern regarding this growing regional imbalance. Second, to the extent the 2007 and/or 2008 capacity additions effectively address the Southeast Florida imbalance concern, solid fuel-based capacity additions north of the Southeast Florida region would be more feasible and cost-effective.

FPL's approach to these two issues will be developed through on-going resource planning work.

III.D Demand Side Management (DSM)

1. FPL's Current DSM Programs

FPL's currently approved DSM programs are summarized as follows:

Residential Conservation Service: This is an energy audit program designed to assist residential customers in understanding how to make their homes more energy-efficient through the installation of conservation measures/practices.

Residential Building Envelope: This program encourages the installation of energy-efficient ceiling insulation in residential dwellings that utilize whole-house electric air conditioning.

Duct System Testing and Repair: This program encourages demand and energy conservation through the identification of air leaks in whole-house air conditioning duct systems and by the repair of these leaks by qualified contractors.

Residential Air Conditioning: This is a program to encourage customers to purchase higher efficiency central cooling and heating equipment.

Residential Load Management (On-Call): This program offers load control of major appliances/household equipment to residential customers in exchange for monthly electric bill credits.

New Construction (BuildSmart): This program encourages the design and construction of energy-efficient homes that cost-effectively reduce coincident peak demand and energy consumption.

Business Energy Evaluation: This program encourages energy efficiency in both new and existing commercial and industrial facilities by identifying DSM opportunities and providing recommendations to the customer.

Commercial/Industrial Heating, Ventilating, and Air Conditioning: This program encourages the use of high-efficiency heating, ventilation, and air conditioning (HVAC) systems in commercial/industrial facilities.

Commercial/Industrial Efficient Lighting: This program encourages the installation of energy-efficient lighting measures in commercial/industrial facilities.

Business Custom Incentive: This program encourages commercial/industrial customers to implement unique energy conservation measures or projects not covered by other FPL programs.

Commercial/Industrial Load Control: This program reduces peak demand by controlling customer loads of 200 kW or greater during periods of extreme demand or capacity shortages in exchange for monthly electric bill credits. (This program was closed to new participants in 2000).

Commercial/Industrial Demand Reduction: This program (which started in 2002) is similar to the Commercial/Industrial Load Control mentioned above by continuing the objective to reduce peak demand by controlling customer loads of 200 kW or greater during periods of extreme demand or capacity shortages in exchange for monthly electric bill credits.

Commercial/Industrial Building Envelope: This program encourages the installation of energy-efficient building envelope measures such as window treatments and roof/ceiling insulation for commercial/industrial facilities.

Business On Call: This program offers load control of central air conditioning units to both small, non-demand-billed and medium, demand-billed commercial/industrial customers in exchange for monthly electric bill credits.

2. Research and Development

FPL's DSM Plan continues to support research and development activities. Historically, FPL has performed extensive DSM research and development. FPL will continue such activities not only through its Conservation Research and Development program, but also through individual research projects. These efforts will examine a wide variety of technologies that build on prior FPL research where applicable and will expand the research to new and promising technologies as they emerge.

Conservative Research and Development Program

FPL's Conservation Research and Development Program is designed to evaluate emerging conservation technologies to determine which are worthy of pursuing for program development and approval. FPL has researched a wide variety of technologies and from that research has been able to develop new programs such as Residential New Construction, Commercial/Industrial Building Envelope, and Business On Call.

Low Income Weatherization Retrofit Project

This R&D project is investigating cost-effective methods of increasing the energy efficiency in the homes of FPL's low-income customers. The research project addresses the needs of low-income housing retrofits by providing monetary incentives to various housing authorities including weatherization agency providers (WAPS), and non-weatherization agency providers (non-WAPS). These incentives are used by the housing authorities to leverage their funds to increase the overall energy efficiency of the homes they are retrofitting. FPL either conducts a home energy survey, trains housing authority employees to perform FPL home energy surveys, accepts the National Energy Audit (NEAT) (as supplemented to capture water heating recommendations not included in the NEAT audit), or approves similar FPL approved audits conducted by weatherization providers to determine the need for energy efficient retrofit measures for each home. FPL has designed the project so as to minimize extra work for the retrofit housing authorities.

Photovoltaic Research, Development and Education Project

Photovotaic (PV) roof-tile systems are a relatively new technology which directly replaces existing roofing materials such as shingles and standing-rib roofing with PV materials. These PV materials have the same waterproofing characteristics as conventional roofing materials. This project is consistent with the Federal Government's Million Solar Roofs Initiative. However, based on FPL's research to-date, a primary hurdle to the physical installation of PV systems, whether roofing materials or flat plate modules, is the lack of awareness, understanding, and acceptance by local building officials. For the most part, these officials are unclear about how these systems work and how to address these systems as part of the building, permitting, and inspection process. This creates barriers toward the use

of this technology. As part of this project FPL will be holding workshops to address this issue.

Green Energy Project

Under this project, FPL is examining the feasibility of purchasing electric energy generated from new renewable resources including solar-powered technologies, biomass energy, landfill methane, wind energy, low impact hydroelectric energy, and/or other renewable sources. Customers who participate would then be charged higher premiums for utilizing electric energy derived from these sources.

FPL has determined that there is a level of customer acceptance and desire for a Green Power pricing program. A petition was submitted on May 3, 2002 for a declaratory statement (Docket No.020397 – EQ) asking the FPSC whether FPL may pay higher than avoided costs for energy from renewable sources devoted to a Green Power program. A favorable order was received on August 6, 2002. FPL is continuing its development of this project.

Real-Time Pricing

Although not part of FPL's approved DSM Plan, FPL continues to research new conservation/efficiency options such as real-time pricing. This option is an experimental service offering for large C/I customers that is designed to evaluate customer load response to hourly, marginal cost-based energy prices provided on a day-ahead basis.

On Call Pilot

In March 2003, FPL received FPSC Commission approval to perform a pilot for its On Call program. Under the pilot FPL will offer to new participants a residential load control service similar to the On Call Program at a reduced incentive level. The offering of this pilot will allow FPL to test its market research data and gauge whether FPL can repackage its current residential load control service, minimize customer attrition, achieve current goals for residential load control, and, ultimately, change On Call incentive levels without damaging system reliability.

FPL will begin implementing the pilot in April 2003 and it will last up to 3 years.

3. FPL's DSM MW Goals

FPL's DSM implementation plan is designed to meet currently approved DSM goals for through 2009. The combined total residential and commercial/industrial Summer MW reduction values from FPL's DSM goals for 2000 – 2009 are presented in Table III. D.1. FPL's DSM efforts through 2002 have resulted in a cumulative Summer peak reduction of approximately 2,923 MW at the meter.

FPL's Summer MW Reduction Goals for DSM
(At the Meter)

Year	Goal Cumulative Summer MW
2000	122
2001	200
2002	269
2003	339
2004	410
2005	484
2006	554
2007	625
2008	697
2009	765

Table III.D.1

III.E Generation Additions From Independent Power Producers

As previously mentioned in Section III.A, FPL recently entered into a number of new short-term, firm capacity purchases that extend through early 2007. The capacity supplied by these purchases are summarized in Table I.D.1. The vast majority of the capacity from these purchases is from independent power producers.

Tables I.B.1 and Table I.B.2 present the previously contracted cogeneration/small power production facilities which are addressed in FPL's resource planning.

III.F Transmission Plan

The transmission plan will allow for the reliable delivery of the required capacity and energy for FPL's retail and wholesale customers. The following table presents FPL's proposed future additions of 230 kV and 500 kV bulk transmission lines irrespective of whether they directly correspond to proposed generating facilities or whether they must be certified under the Transmission Line Siting Act.

List of Proposed Power Lines

(1) LINE OWNERSHIP	(2) TERMINALS (To)	(3) TERMINALS (From)	(4) LINE LENGTH CKT. MILES	(5) COMMERCIAL IN-SERVICE DATE (MO/YR)	(6) NOMINAL VOLTAGE (kV)	(7) CAPACITY (MVA)
FPL	Broward	Delmar	3	Jun-03	230	514
FPL	Charlotte	Whidden #3	29	Jun-03	230	1191
FPL	Cortez	Johnson	11	Jun-03	230	596
FPL/GPC *	Duval-Kingsland	Yulee-Oneil	7	Jun-03	230	478
FPL	Cedar	Lauderdale	1	Oct-03	230	514
FPL	Collier	Orange River	9	Nov-03	230	759
FPL	Coast	Peachland	7	Dec-03	230	596
FPL	Andytown	Pennsuco	2	Jun-04	230	508
FPL	Bridge	Indiantown	10	Dec-04	230	1067
FPL	Broward-Corbett	Rainberry-Clintmoore	6	Jun-04	230	514
FPL	Dade	Overtown	11	Jun-04	230	759
FPL	Delmar	Yamato	2	Jun-04	230	514
FPL	Indiantown	Martin #2	13	Dec-04	230	1067
FPL/PGN *	Whidden	Vandola	27	Jun-04	230	799
FPL	Whidden	Charlotte #2	27	Jun-04	230	1067
FPL	Conservation	Oakland Park	13	Jun-05	230	759
FPL	Collier	Orange River	TBD	Dec-05	230	TBD

* GPC = Georgia Power Corporation
PGN = Progress Energy

Table III.F.1

In addition, there will be transmission facilities needed to connect several of FPL's committed capacity additions to the system transmission grid. These transmission facilities for the projected capacity additions at FPL's existing Fort Myers, Manatee, and Martin sites are described below. (No additional transmission facilities are needed for the repowering of Sanford Unit # 4).

Since the projected capacity additions for 2007 through 2012 are as-yet unsited, no transmission facilities information is provided. This information will be provided in future Site Plan documents once sites are selected.

III.F.1 Transmission Facilities at Fort Myers

The work required for the Fort Myers capacity expansion for two new CT units with the FPL grid is projected to be as follows:

I. Substation:

1. Build one collector bus with 2 breakers for each CT. Add another breaker to the collector bus for the station service transformer.
2. Add the two main step-up transformers (225MVA/each), one for each CT.
3. Add the station service transformer.
4. Connect the new Fort Myers collector bus to the Fort Myers 230kV switchyard.
5. Replace 4 breakers at the existing Fort Myers 230 kV switchyard.
6. Add relay and other protective equipment at Fort Myers switchyard.

II. Transmission:

1. All transmission work at Fort Myers is complete.

III.F.2 Transmission Facilities at Manatee

The work required for the new capacity addition at Manatee with the FPL grid is projected to be as follows:

I. Substation:

1. Build new collector yard containing two collector busses with 6 breakers to connect the four CT's, and one ST.
2. Construct two string busses to connect the collectors and main switchyard.
3. Add five main step-up transformers (4-225MVA, 1- 450MVA) one for each CT, and one for the ST.
4. Add two breakers in bay # 6 to connect the collector bus at the Manatee switchyard.
5. Add two breakers in bay # 5 at the Manatee switchyard to connect the other collector bus.
6. Add relays and other protective equipment.
7. Upgrade 13-230kV circuit breakers to 2 cycle Independent Pole breakers at Manatee switchyard.
8. Upgrade the existing line terminal at Johnson to 3000 Amps.
9. Expand site and relay vault for two new line terminals at Manatee switchyard.

II. Transmission:

1. Upgrade the Calusa-Charlotte 230kV transmission line to 1875 Amps.
2. Upgrade the Johnson- Manatee 230kV transmission line to 2710 Amps.
3. Upgrade the Manatee-Ringling # 3 230kV transmission line to 2710 Amps.
4. Upgrade the Charlotte-Fort Myers # 2 230kV transmission line to 1565 Amps.

III.F.3 Transmission Facilities at Martin

The work required for the incremental capacity planned to be added at Martin (convert the existing two CT's to a new four-on-one combined cycle unit) with the FPL grid is projected to be as follows:

I. Substation:

1. Build new collector yard containing one collector buss with 4 breakers each to connect the two CT's and one ST.
2. Add one station service transformer in the existing CT yard.
3. Add three main step-up transformers (2-225 MVA, 450MVA) one for each CT, and one for the ST.
4. Add two breakers in bay # 3 to connect the collector bus in the main switchyard.
5. Add relays and other protective equipment.
6. Install phase reactors and string buss in main switchyard to limit fault current.
7. Add breaker in bay # 7 (7WE) for new Indiantown # 2 transmission line. Tap existing 69kV auto-transformer off east 230kV operating bus.
8. Add breaker in Bay # 3 (3WS) at Indiantown Substation for Bridge line.
9. Create new bay 4. Add breakers 4WM, 4WS for Indiantown-Martin #2 line at Indiantown Substation.
10. Create new bay # 1 at Bridge Substation with breakers 1WW and 1WM. Add breakers 2WW and 2WE to convert station configuration from ring buss.
11. Construct one string bus to connect the collector and main switchyard.

II. Transmission:

1. Construct 230kV Martin-Indiantown # 2 transmission line.
2. Construct 230kV Indiantown – Bridge # 2 transmission line.
3. Various OHGW replacements due to increased fault current.
4. Upgrade the Ranch-Homeland 230kV transmission line to 1330 Amps.

III.G. Renewable Resources

FPL has been the leading Florida utility in examining ways to utilize renewable energy technologies to meet its customers' current and future needs. FPL has been involved since 1976 in renewable energy research and development and in facilitating the implementation of various technologies.

FPL assisted the Florida Solar Energy Center (FSEC) in the late 1970's in demonstrating the first residential solar photovoltiac (PV) system east of the Mississippi. This PV installation at FESC's Brevard County location was in operation for over 15 years and provided valuable information about PV performance capabilities on both a daily and annual basis in Florida. FPL later installed a second PV system at the FPL Flagami substation in Miami. This 10-Kilowatt (KW) system was placed into operation in 1984. (After the testing of this PV installation was completed, the system was removed in 1990 to make room for substation expansion.)

For a number of years, FPL maintained a thin-film PV test facility located at the FPL Martin Plant Site. The FPL PV test facility was used to test new thin-film PV technologies and to identify design, equipment, or procedure changes necessary to accommodate direct current electricity from PV facilities into the FPL system. Although this testing has ended, the site is now the home for PV capacity which was installed as a result of FPL's recent Green Pricing effort (which is discussed on the following page).

In terms of utilizing renewable energy sources to meet its customers' needs, FPL initiated the first and only utility-sponsored conservation program in Florida designed to facilitate the implementation of solar technologies by its customers. FPL's Conservation Water Heating Program, first implemented in 1982, offered incentive payments to customers choosing solar water heaters. Before the program was ended (due to the fact that it was not cost-effective), FPL paid incentives to approximately 48,000 customers who installed solar water heaters.

In the mid-1980's, FPL introduced another renewable energy program. FPL's Passive Home Program was created in order to broadly disseminate information about passive solar building design techniques which are most applicable in Florida's climate. As part of this program, three Florida architectural firms created

complete construction blueprints for 6 passive homes with the assistance of the FSEC and FPL. These designs and blueprints were available to customers at a low cost. During its existence, this program was popular and received a U.S. Department of Energy award for innovation. The program was eventually phased out due to a revision of the Florida Model Energy Building Code (Code). This revision was brought about in part by FPL's Passive Home Program. The revision incorporated into the Code one of the most significant passive design techniques highlighted in the program: radiant barrier insulation.

In early 1991, FPL received approval from the Florida Public Service Commission to conduct a research project to evaluate the feasibility of using small PV systems to directly power residential swimming pool pumps. This research project was completed with mixed results. Some of the performance problems identified in the test may be solvable, particularly when new pools are constructed. However, the high cost of PV, the significant percentage of sites with unacceptable shading, and various customer satisfaction issues remain as significant barriers to wide acceptance and use of this particular solar application.

More recently, FPL has analyzed the feasibility of encouraging utilization of PV in another, potentially much larger way. FPL's basic approach does not require all of its customers to bear PV's high cost, but allows customers who are interested in facilitating the use of renewable energy the means to do so. FPL's initial effort to implement this approach allowed customers to make voluntary contributions into a separate fund that FPL used to make PV purchases in bulk quantities. PV modules were then installed and delivered PV-generated electricity directly into the FPL grid. Thus, when sunlight is available, the PV-generated electricity displaces an equivalent amount of fossil fuel-generated electricity.

FPL's basic approach, which has been termed Green Pricing, was initially discussed with the FPSC in 1994. FPL's initial efforts to implement this approach were then formally presented to the FPSC as part of FPL's DSM Plan in 1995 and FPL received approval from the FPSC in 1997 to proceed. FPL initiated the effort in 1998 and received approximately $89,000 in contributions (that significantly exceeded the goal of $70,000). FPL has purchased the PV modules and installed them at FPL's Martin Plant site.

As previously discussed, FPL initiated two new renewable efforts in 2000. FPL's first new initiative in 2000 was the Green Energy Project which is a second, different attempt to implement the basic Green Pricing approach. Under this project FPL would purchase electric energy generated from new renewable sources. The project would offer to supply to FPL's electrical grid the equivalent of all, or part of, a customer's monthly kWh usage with electricity generated from these new renewable resources. Participants would be residential (and possibly commercial) customers who would pay higher ("green" rates) for electricity provided from these renewable sources. FPL issued a Request for Proposals (RFP) in 2001 to solicit proposals to potentially supply energy only (MWH) from new renewable sources.

The second effort initiated in 2000 is FPL's Photovoltaic Research, Development, and Education Project. This demonstration project's objectives are to increase the public awareness of roof tile PV technologies, provide data to determine the durability of this technology and its impact on FPL's electric system, collect demand and energy data to better understand the coincidence between PV roof tile system output and FPL's system peaks (as well as the total annual energy capabilities of roof tile PV systems), and assess the homeowner's financial benefits and costs of PV roof tile systems.

Finally, FPL has also facilitated renewable energy projects (facilities which burn bagasse, waste wood, municipal waste, etc.). Firm capacity and energy and as-available energy have been purchased by FPL from these developers. (Please refer to Tables I.B.1 and I.B.2).

III.H FPL's Fuel Mix and Fuel Price Forecasts

1. FPL's Fuel Mix

Until the mid-1980's, FPL relied primarily on a combination of oil, natural gas, and nuclear energy to generate electricity. In the early 1980's FPL began to purchase "coal-by-wire." In 1987, coal was first added to the fuel mix, through FPL's partial ownership and additional purchases from, the St. Johns River Power Park (SJRPP). This allowed FPL to meet its customers' energy needs with a more diversified mix of energy sources. Additional coal resources were added with the partial acquisition (76%) of Scherer Unit # 4 in 1989. Starting in 1997, petroleum

coke was added to the fuel mix as a blend stock with coal at the St. Johns River Power Park.

The trend in recent years has been a steady increase in the amount of natural gas that is used by FPL to provide electricity due, in part, to the introduction of highly efficient and cost-effective combined cycle generating units. Although this planning document reflects a continuation of this trend, FPL's proposed capacity additions for the years 2008 through 2012 present a plan that is subject to change. FPL's future resource planning work will increasingly focus on identifying and evaluating alternatives that would maintain/enhance FPL's long-term fuel diversity. These fuel diversity-enhancing alternatives may include: extending and/or expanding existing solid/fuel-based power purchases, the construction of, and the purchase of power from, new solid fuel-based (coal and petroleum coke) facilities; obtaining access to diversified sources of natural gas such as from suppliers of natural gas from international production areas; and preserving FPL's ability to utilize fuel oil at is existing units. The feasibility and cost-effectiveness of these, and possibly other, alternatives will be analyzed in future planning cycles.

FPL's current use of various fuels to supply energy to customers, plus a projection of this "fuel mix" through 2012 based on the resource plan presented in this document, is presented in Schedules 5, 6.1, and 6.2.

2. Fuel Price Forecasts

FPL's long-term oil price forecast assumes that worldwide demand for petroleum products will grow moderately throughout the planning horizon. Non-OPEC crude oil supply is projected to increase as new and improved drilling technology and seismic information will reduce the cost of producing crude oil and increase both recoveries from existing fields and new discoveries. However, the rate of increase in non-OPEC supply is projected to be slower than that of petroleum demand, resulting in an increase in OPEC's market share throughout the planning horizon. As OPEC gains market share, prices for petroleum products are projected to increase.

FPL's natural gas price forecast assumes that domestic demand for natural gas will grow throughout the planning horizon, primarily due to increased requirements for electric generation. Domestic natural gas production will increase as new and

improved drilling technology and seismic information will reduce the cost of finding, developing, and producing natural gas fields. The rate of increase in domestic natural gas production is assumed to be slower than that of demand nationally, with the balance being supplied by increased Canadian and liquefied natural gas (LNG) imports. As demand for natural gas in Florida grows, it is anticipated that the Florida Gas Transmission (FGT) pipeline system will be augmented/expanded. This anticipated expansion of FGT's pipeline, combined with the new Gulfstream pipeline and potential sources of non-domestic/international natural gas (such as off-shore suppliers), should result in sufficient gas for FPL's continued needs.

FPL's coal price forecast assumes an ample supply of domestic coal, and the availability of imported coal, to meet a slow, but steady increase in domestic demand in the electric generation sector over the planning horizon. The coal price forecast for FPL's existing coal plant at St. Johns River Power Park (SJRPP) and Plant Scherer assume the continuation of the existing mine-mouth and transportation contracts unit expiration, along with the purchase of spot coal, to meet generation requirements. FPL's petroleum coke price forecast assumes that the petroleum industry will continue to cokers in the U.S., as well as in the Caribbean Basin in order to maximize refinery production of light products. This trend will continue to result in sufficient availability of petroleum coke, at delivered prices significantly below delivered coal prices. To support a slow, but steady growth in the use of petroleum coke in the U.S. electric utility industry.

Schedule 5
Fuel Requirements [1/]

	Fuel Requirements	Units	Actual [2/] 2001	2002	Forecasted 2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
(1)	Nuclear	Trillion BTU	263	276	251	251	255	251	250	255	250	249	254	251
(2)	Coal	1,000 TON	3,078	3,070	3,823	3,717	3,703	3,701	3,701	3,685	3,632	3,631	3,634	3,636
(3)	Residual (FO6)- Total	1,000 BBL	40,995	29,791	28,180	31,431	24,819	22,042	19,464	14,692	10,393	7,823	8,310	6,904
(4)	Steam	1,000 BBL	40,995	29,791	28,180	31,431	24,819	22,042	19,464	14,692	10,393	7,823	8,310	6,904
(5)	Distillate (FO2)- Total	1,000 BBL	381	473	911	103	28	44	22	5	2	0	1	0
(6)	CC	1,000 BBL	75	29	772	10	0	0	0	0	0	0	0	0
(7)	CT	1,000 BBL	306	444	139	93	28	44	22	5	2	0	1	0
(8)	Steam	1,000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(9)	Natural Gas -Total	1,000 MCF	212,956	286,112	276,757	292,979	341,174	388,315	417,293	452,382	492,761	528,380	543,930	568,789
(10)	Steam	1,000 MCF	79,157	78,017	33,537	38,373	31,538	27,994	26,358	20,758	16,191	13,015	12,937	11,865
(11)	CC	1,000 MCF	109,778	195,106	240,319	251,320	308,827	359,448	390,419	430,914	476,108	515,042	530,473	556,537
(12)	CT	1,000 MCF	24,022	12,988	2,901	3,285	810	873	516	710	462	323	521	387

1/ Reflects fuel requirements for FPL only.

2/ Source: A Schedules.

Schedule 6.1
Energy Sources

	Energy Sources	Units	Actual 1/ 2001	2002	Forecasted 2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
(1)	Annual Energy Interchange 2/	GWH	7,701	10,287	10,701	10,590	10,396	10,255	10,208	10,088	9,634	9,601	9,561	9,641
(2)	Nuclear	GWH	24,070	25,295	23,870	23,848	24,280	23,869	23,766	24,331	23,795	23,688	24,173	23,924
(3)	Coal	GWH	6,267	5,977	7,287	7,102	7,073	7,068	7,072	7,044	7,013	7,006	7,016	7,018
(4)	Residual(FO6) -Total	GWH	25,802	18,708	18,133	20,224	16,014	14,221	12,570	9,516	6,734	5,068	5,376	4,469
(5)	Steam	GWH	25,802	18,708	18,133	20,224	16,014	14,221	12,570	9,516	6,734	5,068	5,376	4,469
(6)	Distillate(FO2) -Total	GWH	163	188	664	52	13	20	10	2	1	0	1	0
(7)	CC	GWH	41	18	598	7	0	0	0	0	0	0	0	0
(8)	CT	GWH	122	170	66	45	13	20	10	2	1	0	1	0
(9)	Steam	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(10)	Natural Gas -Total	GWH	24,496	34,541	37,516	39,533	46,912	53,644	57,935	63,242	69,359	74,634	76,921	80,520
(11)	Steam	GWH	7,588	7,549	3,132	3,588	2,949	2,616	2,468	1,943	1,520	1,225	1,214	1,117
(12)	CC	GWH	14,849	25,986	34,117	35,646	43,890	50,952	55,422	61,235	67,796	73,380	75,659	79,367
(13)	CT	GWH	2,060	1,006	267	299	73	76	46	65	42	30	48	35
(14)	Other 3/	GWH	9,905	9,202	7,529	8,176	7,878	6,865	6,869	6,675	6,580	5,814	5,279	5,152
	Net Energy For Load 4/	GWH	98,404	104,199	105,700	109,525	112,565	115,942	118,430	120,899	123,115	125,811	128,327	130,724

1/ Source: A Schedules

2/ The projected figures are based on estimated energy purchases from SJRPP and the Southern Companies.

3/ Represents a forecst of energy expected to be purchased from Qualifying Facilities, Independent Power Producers, etc.

4/ Net Energy For Load is also shown in Column 19 on Schedule 2.3.

Schedule 6.2
Energy % by Fuel Type

	Energy Source	Units	Actual 1/ 2001	Actual 1/ 2002	Forecasted 2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
(1)	Annual Energy Interchange 2/	%	7.8	9.9	10.1	9.7	9.2	8.8	8.6	8.3	7.8	7.6	7.5	7.4
(2)	Nuclear	%	24.5	24.3	22.6	21.8	21.6	20.6	20.1	20.1	19.3	18.8	18.8	18.3
(3)	Coal	%	6.4	5.7	6.9	6.5	6.3	6.1	6.0	5.8	5.7	5.6	5.5	5.4
(4)	Residual (FO6) -Total	%	26.2	18.0	17.2	18.5	14.2	12.3	10.6	7.9	5.5	4.0	4.2	3.4
(5)	Steam	%	26.2	18.0	17.2	18.5	14.2	12.3	10.6	7.9	5.5	4.0	4.2	3.4
(6)	Distillate (FO2) -Total	%	0.2	0.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(7)	CC	%	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(8)	CT	%	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(9)	Steam	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(10)	Natural Gas -Total	%	24.9	33.1	35.5	36.1	41.7	46.3	48.9	52.3	56.3	59.3	59.9	61.6
(11)	Steam	%	7.7	7.2	3.0	3.3	2.6	2.3	2.1	1.6	1.2	1.0	0.9	0.9
(12)	CC	%	15.1	24.9	32.3	32.5	39.0	43.9	46.8	50.6	55.1	58.3	59.0	60.7
(13)	CT	%	2.1	1.0	0.3	0.3	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0
(14)	Other 3/	%	10.1	8.8	7.1	7.5	7.0	5.9	5.8	5.5	5.3	4.6	4.1	3.9
			100	100	100	100	100	100	100	100	100	100	100	100

1/ Source: A Schedules.

2/ The projected figures are based on estimated energy purchases from SJRPP and the Southern Companies.

3/ Represents a forecast of energy expected to be purchased from Qualifying Facilities, Independent Power Producers, etc.

Schedule 7.1
Forecast of Capacity, Demand, and Scheduled Maintenance At Time Of Summer Peak

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Year	Total Installed Capacity MW	Firm Capacity Import MW	Firm Capacity Export MW	Firm QF MW	Total Capacity Available 2/ MW	Total Peak 3/ Demand MW	DSM 4/ MW	Firm Summer Peak Demand MW	Reserve Margin Before Maintenance 5/ MW	% of Peak	Scheduled Maintenance MW	Reserve Margin After Maintenance 6/ MW	% of Peak
2003	18,864	2,263	0	877	22,004	19,773	1,430	18,343	3,661	20.0	0	3,661	20.0
2004	19,147	2,520	0	877	22,544	20,297	1,510	18,787	3,757	20.0	0	3,757	20.0
2005	21,037	1,784	0	867	23,688	20,799	1,589	19,210	4,478	23.3	0	4,478	23.3
2006	21,037	1,784	0	734	23,555	21,331	1,667	19,664	3,891	19.8	0	3,891	19.8
2007	22,144	1,310	0	734	24,188	21,851	1,744	20,107	4,081	20.3	0	4,081	20.3
2008	23,251	1,310	0	734	25,295	22,289	1,821	20,468	4,827	23.6	0	4,827	23.6
2009	23,251	1,310	0	683	25,244	22,784	1,896	20,888	4,356	20.9	0	4,356	20.9
2010	24,358	1,310	0	640	26,308	23,294	1,922	21,372	4,936	23.1	0	4,936	23.1
2011	24,358	1,310	0	595	26,263	23,783	1,922	21,861	4,402	20.1	0	4,402	20.1
2012	25,465	1,310	0	595	27,370	24,279	1,922	22,357	5,013	22.4	0	5,013	22.4

1/ Capacity additions and changes projected to be in-service by June 1st are considered to be available to meet Summer peak loads which are forecasted to occur during August of the year indicated. All values are Summer net MW.

2/ Total Capacity Available=Col.(2) + Col.(3) - Col.(4) + Col.(5).

3/ These forecasted values reflect the Most Likely forecast without DSM.

4/ The MW shown represent cumulative load management capability plus incremental conservation. They are not included in total additional resources but reduce the peak load upon which Reserve Margin calculations are based.

5/ Margin (%) Before Maintenance = Col.(10) / Col.(9)

6/ Margin (%) After Maintenance =Col.(13) / Col.(9)

Schedule 7.2
Forecast of Capacity , Demand, and Scheduled
Maintenance At Time of Winter Peak

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Year	Total Installed 1/ Capability MW	Firm Capacity Import MW	Firm Capacity Export MW	Firm QF MW	Total Capacity Available 2/ MW	Total Peak 3/ Demand MW	DSM 4/ MW	Firm Winter Peak Demand MW	Reserve Margin Before Maintenance 5/ MW	% of Peak	Scheduled Maintenance MW	Reserve Margin After Maintenance 6/ MW	% of Peak
2002/03	18,780	2,475	0	877	22,132	20,190	1,497	18,693	3,439	18.4	0	3,439	18.4
2003/04	20,254	2,319	0	877	23,450	20,081	1,561	18,520	4,930	26.6	0	4,930	26.6
2004/05	19,891	2,313	0	867	23,071	20,583	1,615	18,968	4,103	21.6	0	4,103	21.6
2005/06	22,290	1,793	0	734	24,817	21,100	1,671	19,429	5,388	27.7	0	5,388	27.7
2006/07	22,290	1,793	0	734	24,817	21,605	1,723	19,882	4,935	24.8	0	4,935	24.8
2007/08	23,499	1,319	0	734	25,552	22,046	1776	20,270	5,282	26.1	0	5,282	26.1
2008/09	24,708	1,319	0	734	26,761	22,539	1,828	20,711	6,050	29.2	0	6,050	29.2
2009/10	24,708	1,319	0	683	26,710	23,026	1,873	21,153	5,557	26.3	0	5,557	26.3
2010/11	25,917	1,319	0	595	27,831	23,522	1,873	21,649	6,182	28.6	0	6,182	28.6
2011/12	25,917	1,319	0	595	27,831	24,024	1,873	22,151	5,680	25.6	0	5,680	25.6

1/ Capacity additions and changes projected to be in-service by January 1st are considered to be available to meet Winter peak loads which are forecast to occur during January of the "second" year indicated. All values are Winter net MW.

2/ Total Capacity Available = Col.(2) + Col.(3) - Col.(4) + Col.(5).

3/ These forecasted values reflect the Most Likely forecast without DSM.

4/ The MW shown represent cumulative load management capability plus incremental conservation. They are not included in total additional resources but reduce the peak load upon which Reserve Margin calculations are based.

5/ Margin (%) Before Maintenance = Col.(10) / Col.(9)

6/ Margin (%) After Maintenance = Col.(13) / Col.(9)

Schedule 8
Planned And Prospective Generating Facility Additions And Changes

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
				Fuel		Fuel Transport		Const.	Comm.	Expected	Gen. Max.	Net Capability		
Plant Name	Unit No.	Location	Unit Type	Pri.	Alt.	Pri	Alt.	Start Mo./Yr.	In-Service Mo./Yr	Retirement Mo./Yr.	Nameplate KW	Winter MW	Summer MW	Status
ADDITIONS/ CHANGES														
2003														
Fort Myers GT's		Lee County 35/43S/25E	CT	FO2	No	WA	No	Nov-02	Jan-03	Unknown	744,000	16	---	OT
Fort Myers	2	Lee County 35/43S/25E	CC	NG	No	PL	No	Nov-02	Jan-03	Unknown	402,000	6	---	OT
Sanford	5	Volusia County 16/19S/30E	CC	FO6	No	WA	No	Nov-02	Jan-03	Unknown	436,100	6	---	OT
Martin	3	Martin County 29/29S/38E	CC	NG	No	PL	No	Nov-02	Jan-03	Unknown	612,000	1	(16)	OT
Martin	4	Martin County 29/29S/38E	CC	NG	No	PL	No	Nov-02	Jan-03	Unknown	612,000	1	(16)	OT
Martin	8	Martin County 29/29S/38E	CT	NG	FO2	PL	PL	Nov-02	Jan-03	Unknown	362,000	1	---	OT
Fort Myers Combustion Turbines	13	Lee County 35/43S/25E	CT	NG	FO2	PL	PL	Apr-01	Apr-03	Unknown	190,000	---	149	OT
Fort Myers Combustion Turbines	14	Lee County 35/43S/25E	CT	NG	FO2	PL	PL	May-01	May-03	Unknown	190,000	---	149	OT
Sanford Repowering: Second Phase	4	Volusia County 16/19S/30E	CC	NG	No	PL	No	Aug-02	Jun-03	Unknown	106,600	---	957	RP
									2003 Changes/Additions Total:			**31**	**1,223**	
2004														
Fort Myers Combustion Turbines	13	Lee County 35/43S/25E	CT	NG	FO2	PL	PL	Apr-01	Apr-03	Unknown	190,000	183	---	V
Fort Myers Combustion Turbines	14	Lee County 35/43S/25E	CT	NG	FO2	PL	PL	May-01	May-03	Unknown	190,000	183	---	V
Sanford Repowering: Second Phase	4	Volusia County 16/19S/30E	CC	NG	No	PL	No	Aug-02	Jun-03	Unknown	106,600	1,036	---	RP
Turkey Point	1	Dade County 27/57S/40E	ST	FO6	NG	WA	PL	Feb-04	Apr-04	Unknown	402,500	---	3	OT
Lauderdale	4	Broward County 30/50S/42E	CC	NG	FO2	PL	PL	Nov-03	Jan-04	Unknown	521,250	2	2	OT
Port Everglades	4	City of Hollywood 23/50S/42E	ST	FO6	NG	WA	PL	Nov-03	Jan-04	Unknown	402,050	26	23	OT
Riveria	3	City of Riviera Beach 33/42S/43E	ST	FO6	NG	WA	PL	Nov-03	Jan-04	Unknown	310,420	1	1	OT
Martin	1	Martin County 29/29S/38E	ST	NG	FO6	PL	PL	Nov-03	Jan-04	Unknown	863,000	17	17	OT
Martin	2	Martin County 29/29S/38E	ST	NG	FO6	PL	PL	Nov-03	Jan-04	Unknown	863,000	15	26	OT
Martin	3	Martin County 29/29S/38E	CC	NG	No	PL	No	Apr-04	Jun-04	Unknown	612,000	---	26	OT
Martin	4	Martin County 29/29S/38E	CC	NG	No	PL	No	Apr-04	Jun-04	Unknown	612,000	---	26	OT
Martin	8	Martin County 29/29S/38E	CT	NG	FO2	PL	PL	Apr-04	Jun-04	Unknown	362,000	---	26	OT
Sanford	4	Volusia County 16/19S/30E	CC	NG	No	PL	No	Apr-04	Jun-04	Unknown	436,100		(4)	OT
Sanford	5	Volusia County 16/19S/30E	CC	NG	No	PL	No	Nov-03	Jan-04	Unknown	436,100	11	43	OT
Fort Myers	2	Lee County 35/43S/25E	CC	NG	No	WA	No	Apr-04	Jun-04	Unknown	402,000	---	46	OT
Fort Myers CT	3	Lee County 35/43S/25E	CT	NG	FO2	PL	PL	Apr-04	Jun-04	Unknown	190,000	---	26	OT
Manatee	1	Manatee County 18/33S/20E	ST	FO6	No	WA	No	Apr-04	Jun-04	Unknown	863,300	---	5	OT
Manatee	2	Manatee County 18/33S/20E	ST	FO6	No	WA	No	Apr-04	Jun-04	Unknown	863,300	---	5	OT
Fort Myers GT's		Lee County 35/43S/25E	CT	FO2	No	WA	No	Apr-04	Jun-04	Unknown	744,000	---	12	OT
									2004 Changes/Additions Total:			**1,474**	**283**	
2005														
Manatee Combined Cycle	3	Manatee County 18/33S/20E	CC	NG	FO2	PL	PL	Jun-03	Jun-05	Unknown	470,000	---	1,107	T
Martin Combined Cycle	8	Martin County 29/29S/38E	CC	NG	No	PL	No	Jun-03	Jun-05	Unknown	470,000	---	1,107	T
Martin Combustion Turbine Conv.	8A	Martin County 29/29S/38E	CT	NG	FO2	PL	PL	Jun-99	Jun-01	12/1/04	190,000	(182)	(162)	OT
Martin Combustion Turbine Conv.	8B	Martin County 29/29S/38E	CT	NG	FO2	PL	PL	Jun-99	Jun-01	12/1/04	190,000	(182)	(162)	OT
									2005 Changes/Additions Total:			**(363)**	**1,890**	

Note 1: The Winter Total MW value consists of all generation additions and changes achieved by January The Summer Total MW value consists of all generation additions and changes achieved by June. All other MW will be picked up in the following year

Note 2: Capacity additions/changes shown for 2003 reflect changes/additions from values shown in Schedule 1

Note 3: The values shown for the Sanford repowering project reflect the schedule for the repowering of Sanford Unit # 4 that was used in FPL's 2002 resource planning work.

Schedule 8

Planned And Prospective Generating Facility Additions And Changes

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
				Fuel		Fuel Transport		Const.	Comm.	Expected	Gen. Max.	Net Capability		
Plant Name	Unit No.	Location	Unit Type	Pri.	Alt.	Pri.	Alt.	Start Mo./Yr.	In-Service Mo./Yr	Retirement Mo./Yr.	Nameplate KW	Winter MW	Summer MW	Status
ADDITIONS/ CHANGES														
2006														
Manatee Combined Cycle	3	Manatee County 18/33S/20E	CC	NG	FO2	PL	PL	Jun-03	Jun-05	Unknown	470,000	1,201	---	T
Martin Combined Cycle	8	Martin County 29/29S/38E	CC	NG	FO2	PL	PL	Jun-03	Jun-05	Unknown	190,000	1,198	---	T
									2006 Changes/Additions Total:			**2,399**	**0**	
2007														
Unsited Combined Cycle Unit	1	Unknown	CC	NG	FO2	PL	PL	Jan-05	Jun-07	Unknown	470,000	---	1,107	P
									2007 Changes/Additions Total:			**0**	**1,107**	
2008														
Unsited Combined Cycle Unit	1		CC	NG	FO2	PL	PL	Jan-05	Jun-07	Unknown	470,000	1,209	---	P
Unsited Combined Cycle Unit	2	Unknown	CC	NG	FO2	PL	PL	Jan-06	Jun-08	Unknown	470,000	---	1,107	P
									2008 Changes/Additions Total:			**1,209**	**1,107**	
2009														
Unsited Combined Cycle Unit	2	Unknown	CC	NG	FO2	PL	PL	Jan-06	Jun-08	Unknown	470,000	1,209	---	P
									2009Changes/Additions Total:			**1,209**	**0**	
2010														
Unsited Combined Cycle Unit	3	Unknown	CC	NG	FO2	PL	PL	Jan-08	Jun-10	Unknown	470,000	---	1,107	P
									2010 Changes/Additions Total:			**0**	**1,107**	
2011														
Unsited Combined Cycle Unit	3	Unknown	CC	NG	FO2	PL	PL	Jan-08	Jun-10	Unknown	470,000	1,209	---	P
									2011 Changes/Additions Total:			**1,209**	**0**	
2012														
Unsited Combined Cycle Unit	4	Unknown	CC	NG	FO2	PL	PL	Jan-10	Jun-12	Unknown	470,000	---	1,107	P
									2012 Changes/Additions Total:			**0**	**1,107**	

Note 1: The Winter Total MW value consists of all generation additions and changes achieved by January. The Summer Total MW value consists of all generation additions and changes achieved by August. All other MW will be picked up in the following year. This is done for reserve margin calculation.

Schedule 9

Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** Sanford Unit 4 Repowering

(2) **Capacity**
a. Summer 567 MW Incremental (957 MW Total After Repowering)
b. Winter 652 MW Incremental (1036 MW Total After Repowering)

(3) **Technology Type:** Combined Cycle

(4) **Anticipated Construction Timing**
a. Field construction start-date: 2000
b. Commercial In-service date: 2003

(5) **Fuel**
a. Primary Fuel Natural Gas
b. Alternate Fuel None

(6) **Air Pollution and Control Strategy:** Natural Gas, Dry Low NO_x Combustors

(7) **Cooling Method:** Cooling Pond

(8) **Total Site Area:** 1,718 Acres

(9) **Construction Status:** V (Under Construction > 50% Complete)

(10) **Certification Status:** V (Under Construction > 50% Complete)

(11) **Status with Federal Agencies:** V (Under Construction > 50% Complete)

(12) **Projected Unit Performance Data:**

Planned Outage Factor (POF):	3%
Forced Outage Factor (FOF):	1%
Equivalent Availability Factor (EAF):	96%
Resulting Capacity Factor (%):	Approx. 96% (First Year)
Average Net Operating Heat Rate (ANOHR):	6,918 Btu/kWh (Base Operation)

(13) **Projected Unit Financial Data *,**,*****

Book Life (Years):		25 years
Total Installed Cost (In-Service Year $/kW):		656
Direct Construction Cost ($/kW):		
AFUDC Amount ($/kW):		
Escalation ($/kW):		
Fixed O&M ($/kW -Yr.):	(2001 $kW-Yr.)	14.41
Variable O&M ($/MWH):	(2001 $/MWH)	0.374
K Factor:		1.4637

* $/kW values are based on incremental Summer capacity.
** Note that cost values shown do not reflect the FPL system benefits which result from efficiency improvements to the existing steam capacity at the site.
*** Fixed O&M includes capital replacement.

NOTE: Total installed cost already includes escalation and AFUDC.

Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** Fort Myers Combustion Turbines No. 13 and No. 14 *

(2) **Capacity**
a. Summer 149 MW each for a total of 298 MW
b. Winter 183 MW each for a total of 366 MW

(3) **Technology Type:** Combustion Turbine

(4) **Anticipated Construction Timing**
a. Field construction start-date: 2001
b. Commercial In-service date: 2003

(5) **Fuel**
a. Primary Fuel Natural Gas
b. Alternate Fuel Distillate

(6) **Air Pollution and Control Strategy:** Natural Gas, Dry Low NOx Combustors, 0.05% S. Distillate, & Water Injection on Distillate

(7) **Cooling Method:** Air Coolers

(8) **Total Site Area:** 460 Acres

(9) **Construction Status:** V (Under Construction > 50% Complete)

(10) **Certification Status:** V (Under Construction > 50% Complete)

(11) **Status with Federal Agencies:** V (Under Construction > 50% Complete)

(12) **Projected Unit Performance Data:**

Planned Outage Factor (POF):	1%
Forced Outage Factor (FOF):	1%
Equivalent Availability Factor (EAF):	98%
Resulting Capacity Factor (%):	Approx. 25% (First Year)
Average Net Operating Heat Rate (ANOHR):	10,430 Btu/kWh (Base Operation)

(13) **Projected Unit Financial Data **,*****

Book Life (Years):		25 years
Total Installed Cost (In-Service Year $/kW):		414 per Combustion Turbine
Direct Construction Cost ($/kW):		
AFUDC Amount ($/kW):		
Escalation ($/kW):		
Fixed O&M ($/kW -Yr.):	(2001 $kW-Yr.)	0.69
Variable O&M ($/MWH):	(2001 $/MWH)	0.87
K Factor:		1.5394

* Values shown are per unit values for the two units being added.
** $/kW values are based on Summer capacity.
*** Fixed O&M includes capital replacement.

NOTE: Total installed cost already includes escalation and AFUDC.

Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** Martin Combustion Turbine Conversion to Combined Cycle

(2) **Capacity**
a. Summer 783 MW Incremental (1107 MW Total)
b. Winter 834 MW Incremental (1198 MW Total)

(3) **Technology Type:** Combined Cycle

(4) **Anticipated Construction Timing**
a. Field construction start-date: 2003
b. Commercial In-service date: 2005

(5) **Fuel**
a. Primary Fuel: Natural Gas
b. Alternate Fuel: Distillate

(6) **Air Pollution and Control Strategy:** Natural Gas, Dry Low NO_x Combustors, SCR, 0.05% S. Distillate, & Water Injection on Distillate

(7) **Cooling Method:** Cooling Pond/Tower

(8) **Total Site Area:** 11,300 Acres

(9) **Construction Status:** P (Planned)

(10) **Certification Status:** T (Regulatory Approval Received But Not Under Construction)

(11) **Status with Federal Agencies:** T (Regulatory Approval Received But Not Under Construction)

(12) **Projected Unit Performance Data ***

Planned Outage Factor (POF):	2%
Forced Outage Factor (FOF):	1%
Equivalent Availability Factor (EAF):	97%
Resulting Capacity Factor (%):	Approx. 80% (First Year Base Operation)
Average Net Operating Heat Rate (ANOHR):	6,850 Btu/kWh (Base Operation)
Base Operation 75F	100%

(13) **Projected Unit Financial Data **,*****

Book Life (Years):	25 years
Total Installed Cost (In-Service Year $/kW):	586
Direct Construction Cost ($/kW):	
AFUDC Amount ($/kW):	
Escalation ($/kW):	
Fixed O&M ($/kW -Yr.): (2001 $kW-Yr.)	9.07
Variable O&M ($/MWH): (2001 $/MWH)	0.037
K Factor:	1.5397

* Values represent an operational combined cycle unit after the conversion is completed.
** $/kW values are based on Summer incremental capacity.
*** Fixed O&M cost includes capital replacement.

NOTE: Total installed cost already includes escalation and AFUDC.

Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** Manatee Combined Cycle

(2) **Capacity**
a. Summer 1,107 MW
b. Winter 1,201 MW

(3) **Technology Type:** Combined Cycle

(4) **Anticipated Construction Timing**
a. Field construction start-date: 2003
b. Commercial In-service date: 2005

(5) **Fuel**
a. Primary Fuel: Natural Gas
b. Alternate Fuel: None

(6) **Air Pollution and Control Strategy:** Natural Gas, Dry Low NO_x Combustors, SCR

(7) **Cooling Method:** Cooling Pond

(8) **Total Site Area:** 9,500 Acres

(9) **Construction Status:** P (Planned)

(10) **Certification Status:** T (Regulatory Approval Received But Not Under Construction)

(11) **Status with Federal Agencies:** T (Regulatory Approval Received But Not Under Construction)

(12) **Projected Unit Performance Data:**

Planned Outage Factor (POF):	2%
Forced Outage Factor (FOF):	1%
Equivalent Availability Factor (EAF):	97%
Resulting Capacity Factor (%):	Approx. 71% (First Year Base Operation)
Average Net Operating Heat Rate (ANOHR):	6,850 Btu/kWh (Base Operation)
Base Operation 75F	100%

(13) **Projected Unit Financial Data *,****

Book Life (Years):	25 years
Total Installed Cost (In-Service Year $/kW):	499
Direct Construction Cost ($/kW):	
AFUDC Amount ($/kW):	
Escalation ($/kW):	
Fixed O&M ($/kW -Yr.): (2001 $kW-Yr.)	12.96
Variable O&M ($/MWH): (2001 $/MWH)	0.037
K Factor:	1.5397

* $/kW values are based on Summer capacity.
** Fixed O&M cost includes capital replacement.

NOTE: Total installed cost already includes escalation and AFUDC.

Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** Unsited Combined Cycle Unit # 1

(2) **Capacity**
a. Summer 1,107 MW
b. Winter 1,209 MW

(3) **Technology Type:** Combined Cycle

(4) **Anticipated Construction Timing**
a. Field construction start-date: 2005
b. Commercial In-service date: 2007

(5) **Fuel**
a. Primary Fuel — Natural Gas
b. Alternate Fuel — Distillate

(6) **Air Pollution and Control Strategy:** Natural Gas, Dry Low No_x Combustors, SCR 0.05% S. Distillate, & Water Injection on Distillate

(7) **Cooling Method:** Unknown

(8) **Total Site Area:** Unknown Acres

(9) **Construction Status:** P (Planned)

(10) **Certification Status:** P (Planned)

(11) **Status with Federal Agencies:** P (Planned)

(12) **Projected Unit Performance Data:**

Planned Outage Factor (POF):	2%	
Forced Outage Factor (FOF):	1%	
Equivalent Availability Factor (EAF):	97%	
Resulting Capacity Factor (%):	Approx. 70%	(First Year Base Operation)
Average Net Operating Heat Rate (ANOHR):	6,850	Btu/kWh (Base Operation)
Base Operation 75F	100%	

(13) **Projected Unit Financial Data *,****

Book Life (Years):	25 years
Total Installed Cost (In-Service Year $/kW):	571
Direct Construction Cost ($/kW):	
AFUDC Amount ($/kW):	
Escalation ($/kW):	
Fixed O&M ($/kW -Yr.): (2003 $kW-Yr.)	15.29
Variable O&M ($/MWH): (2003 $/MWH)	0.41
K Factor:	1.5397

* $/kW values are based on Summer capacity.
** Fixed O&M cost includes capital replacement.

NOTE: Total installed cost includes gas expansion, transmission interconnection and integration, escalation, and AFUDC.

Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** Unsited Combined Cycle # 2

(2) **Capacity**
a. Summer 1,107 MW
b. Winter 1,209 MW

(3) **Technology Type:** Combined Cycle

(4) **Anticipated Construction Timing**
a. Field construction start-date: 2006
b. Commercial In-service date: 2008

(5) **Fuel**
a. Primary Fuel: Natural Gas
b. Alternate Fuel: Distillate

(6) **Air Pollution and Control Strategy:** Natural Gas, Dry Low No_x Combustors, SCR 0.05% S. Distillate, & Water Injection on Distillate

(7) **Cooling Method:** Unknown

(8) **Total Site Area:** Unknown Acres

(9) **Construction Status:** P (Planned)

(10) **Certification Status:** P (Planned)

(11) **Status with Federal Agencies:** P (Planned)

(12) **Projected Unit Performance Data:**

Planned Outage Factor (POF):	2%	
Forced Outage Factor (FOF):	1%	
Equivalent Availability Factor (EAF):	97%	
Resulting Capacity Factor (%):	Approx. 70%	(First Year Base Operation)
Average Net Operating Heat Rate (ANOHR):	6,850	Btu/kWh (Base Operation)
Base Operation 75F	100%	

(13) **Projected Unit Financial Data *,****

Book Life (Years):	25 years
Total Installed Cost (In-Service Year $/kW):	581
Direct Construction Cost ($/kW):	
AFUDC Amount ($/kW):	
Escalation ($/kW):	
Fixed O&M ($/kW -Yr.): (2003 $kW-Yr.)	15.29
Variable O&M ($/MWH): (2003 $/MWH)	0.41
K Factor:	1.5397

* $/kW values are based on Summer capacity.
** Fixed O&M cost includes capital replacement.

NOTE: Total installed cost includes gas expansion, transmission interconnection and integration, escalation, and AFUDC.

Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** Unsited Combined Cycle # 3

(2) **Capacity**
a. Summer 1,107 MW
b. Winter 1,209 MW

(3) **Technology Type:** Combined Cycle

(4) ***Anticipated Construction Timing***
a. Field construction start-date: 2008
b. Commercial In-service date: 2010

(5) **Fuel**
a. Primary Fuel: Natural Gas
b. Alternate Fuel: Distillate

(6) **Air Pollution and Control Strategy:** Natural Gas, Dry Low No_x Combustors, SCR 0.05% S. Distillate, & Water Injection on Distillate

(7) **Cooling Method:** Unknown

(8) **Total Site Area:** Unknown Acres

(9) **Construction Status:** P (Planned)

(10) **Certification Status:** P (Planned)

(11) **Status with Federal Agencies:** P (Planned)

(12) **Projected Unit Performance Data:**

Planned Outage Factor (POF):	2%	
Forced Outage Factor (FOF):	1%	
Equivalent Availability Factor (EAF):	97%	
Resulting Capacity Factor (%):	Approx. 70%	(First Year Base Operation)
Average Net Operating Heat Rate (ANOHR):	6,850	Btu/kWh (Base Operation)
Base Operation 75F	100%	

(13) **Projected Unit Financial Data *,****

Book Life (Years):	25 years
Total Installed Cost (In-Service Year $/kW):	601
Direct Construction Cost ($/kW):	
AFUDC Amount ($/kW):	
Escalation ($/kW):	
Fixed O&M ($/kW -Yr.): (2003 $kW-Yr.)	15.29
Variable O&M ($/MWH): (2003 $/MWH)	0.41
K Factor:	1.5397

* $/kW values are based on Summer capacity.
** Fixed O&M cost includes capital replacement.

NOTE: Total installed cost includes gas expansion, transmission interconnection and integration, escalation, and AFUDC.

Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** Unsited Combined Cycle # 4

(2) **Capacity**
a. Summer 1,107 MW
b. Winter 1,209 MW

(3) **Technology Type:** Combined Cycle

(4) **Anticipated Construction Timing**
a. Field construction start-date: 2010
b. Commercial In-service date: 2012

(5) **Fuel**
a. Primary Fuel — Natural Gas
b. Alternate Fuel — Distillate

(6) **Air Pollution and Control Strategy:** Natural Gas, Dry Low No_x Combustors, SCR 0.05% S. Distillate, & Water Injection on Distillate

(7) **Cooling Method:** Unknown

(8) **Total Site Area:** Unknown Acres

(9) **Construction Status:** P (Planned)

(10) **Certification Status:** P (Planned)

(11) **Status with Federal Agencies:** P (Planned)

(12) **Projected Unit Performance Data:**

Planned Outage Factor (POF):	2%
Forced Outage Factor (FOF):	1%
Equivalent Availability Factor (EAF):	97%
Resulting Capacity Factor (%):	Approx. 65% (First Year Base Operation)
Average Net Operating Heat Rate (ANOHR):	6,850 Btu/kWh (Base Operation)
Base Operation 75F	100%

(13) **Projected Unit Financial Data *,****

Book Life (Years):	25 years
Total Installed Cost (In-Service Year $/kW):	621
Direct Construction Cost ($/kW):	
AFUDC Amount ($/kW):	
Escalation ($/kW):	
Fixed O&M ($/kW -Yr.): (2003 $kW-Yr.)	15.29
Variable O&M ($/MWH): (2003 $/MWH)	0.41
K Factor:	1.5397

* $/kW values are based on Summer capacity.
** Fixed O&M cost includes capital replacement.

NOTE: Total installed cost includes gas expansion, transmission interconnection and integration, escalation, and AFUDC.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Sanford Unit # 4 Repowering

The Sanford Unit # 4 transmission work has already been completed.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Fort Myers – Two New CT's

The Fort Myers transmission work is already completed.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Manatee CC

The new Manatee CC unit does not require any "new" transmission lines.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Martin CC Conversion

(1)	Point of Origin and Termination:	Martin – Indiantown #2
(2)	Number of Lines:	1
(3)	Right-of-way	FPL Owned & New acquisitions
(4)	Line Length:	12.9 miles
(5)	Voltage:	230 kV
(6)	Anticipated Construction Timing:	Start date: 10/1/03 End date: 12/31/04
(7)	Anticipated Capital Investment: (Trans. and Sub.)	$11,700,000
(8)	Substations:	Martin 230kV and Indiantown
(9)	Participation with Other Utilities:	None

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(1)	Point of Origin and Termination:	Indiantown – Bridge
(2)	Number of Lines:	1
(3)	Right-of-way	FPL Owned
(4)	Line Length:	10.0 miles
(5)	Voltage:	230 kV
(6)	Anticipated Construction Timing:	Start date: 10/1/03 End date: 12/31/04
(7)	Anticipated Capital Investment: (Trans. and Sub.)	$8,900,000
(8)	Substations:	Indiantown and Bridge
(9)	Participation with Other Utilities:	None

CHAPTER IV

Environmental and Land Use Information

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IV. Environmental and Land Use Information

IV.A Protection of the Environment

FPL operates in a sensitive, temperate/sub-tropical environment containing a number of distinct ecosystems with many endangered plant and animal species. Population growth in our service area is continuing, which heightens competition for air, land, and water resources that are necessary to meet the increased demand for generation, transmission, and distribution of electricity. At the same time, residents and tourists want unspoiled natural amenities, and the general public has an expectation that large corporations such as FPL will conduct their business in an environmentally responsible manner.

FPL has been recognized for many years as one of the leaders among utilities for our commitment to the environment. Our environmental leadership has been heralded by many outside organizations. For example, FPL was recently ranked first out of 28 major electric utilities surveyed in an environmental assessment conducted by Innovest, an independent advisory group. FPL was also awarded Edison Electric Institute's National Land Management Award for our stewardship of 25,000 acres surrounding our Turkey Point Plant. In addition, FPL won the Council for Sustainable Florida's award for our sea turtle conservation and education programs at our St. Lucie Plant. In 2001, FPL was awarded the 2001 Waste Reduction and Pollution Prevention Award from the Solid Waste Association of North America. We also received the 2001 Program Champion Award from the Environmental Protection Agency's Wastewise Program. The Florida Department of Environmental Protection named FPL a "Partner for Ecosystem Protection" for our emission-reducing "repowering" projects at our Fort Myers and Sanford Plants. In addition, FPL has been recognized by numerous federal and state agencies for our innovative endangered species programs which include such species as manatees, crocodiles, and sea turtles.

IV.B FPL's Environmental Statement

To reaffirm its commitment to conduct business in an environmentally responsible manner, FPL developed an Environmental Statement in 1992 to clearly define the Company's position. This statement reflects how FPL incorporates environmental values into all aspects of the Company's activities and serves as a framework for

new environmental initiatives throughout the Company. The FPL environmental statement further establishes a long-term direction of environmental initiatives throughout the Company. FPL's Environmental Statement is:

> It is the Company's intent to continue to conduct its business in an environmentally responsible manner. Accordingly, Florida Power & Light Company will:
>
> - Comply with the spirit and intent, as well as the letter of, environmental laws, regulations, and standards.
> - Incorporate environmental protection and stewardship as an integral part of the design, construction, operation, and maintenance of our facilities.
> - Encourage the wise use of energy to minimize the impact on the environment.
> - Communicate effectively on environmental issues.
> - Conduct periodic self-evaluations, report performance, and take appropriate actions.

IV.C Environmental Management

In order to implement the Environmental Statement, FPL established an environmental management system to direct and control the fulfillment of the organization's environmental responsibilities. A key component of the system is an Environmental Assurance Program that is discussed below. Other components include: executive management support and commitment, written environmental policies and procedures, delineation of organizational responsibilities and individual accountabilities, allocation of appropriate resources for environmental compliance management (which includes reporting and corrective action when non-compliance occurs), environmental incident/emergency response, environmental risk assessment/management, environmental regulatory development and tracking, and environmental management information systems.

IV.D Environmental Assurance Program

FPL's Environmental Assurance Program consists of activities which are designed to evaluate environmental performance, verify compliance with Company policy as

well as with legal and regulatory requirements, and communicate results to corporate management. The principal mechanism for pursuing environmental assurance is the environmental audit. An environmental audit may be defined as a management tool comprising a systematic, documented, periodic, and objective evaluation of the performance of the organization and of the specific management systems and equipment designed to protect the environment. The environmental audit's primary objectives are to: facilitate management control of environmental practices and assess compliance with existing environmental regulatory requirements and Company policies.

IV.E Environmental Communication and Facilitation

FPL is involved in many efforts to enhance environmental protection through the facilitation of environmental awareness and in public education. Some of FPL's 2002 environmental outreach activities are noted in Table IV.E.1.

Activity	*# of Participants*
Visitors to Energy Encounter	19,000
Visitors to Manatee Park	150,000
Number of "visits" to FPL's Environmental Website	80,000
Number of pieces of Environmental literature distributed	>100,000

Table IV.E.1

(All numbers are approximations.)

IV.F Preferred and Potential Sites

Based upon its projection of future resource needs, FPL has identified preferred and potential sites for future generation additions. These preferred and potential sites are discussed in separate sections below.

IV.F.1 Preferred Sites

FPL identifies four preferred sites in this Site Plan: the existing Fort Myers plant site, the existing Sanford plant site, the existing Martin plant site, and the existing Manatee plant site. These four sites are the locations for capacity additions that FPL is committed to make during the 2003-2005 period.

The four preferred sites are discussed below.

Preferred Site # 1: Fort Myers Plant, Lee County

The site is located on the 460-acre Fort Myers property. A repowering project has recently been completed at this facility. Six combustion turbines (CT's) were added that, along with heat recovery steam generating (HRSG) units and the existing steam turbines, comprise the main portion of the repowered facility. These units were completed and began commercial operation on natural gas in May 2002. Approximately 929 MW of incremental Summer capacity and 1,073 MW of incremental Winter capacity was added through the repowering. An existing bank of 12 simple cycle combustion turbine peaking units is also located at the site.

Two additional peaking simple cycle combustion turbines are under construction and are expected to begin commercial service in mid-2003. These peaking combustion turbines have dual fuel capability and are able to operate on either natural gas or distillate oil. These combustion turbines will add an additional 298 MW of Summer capability and 366 MW of Winter capability to the site.

The output capability of the existing bank of 12 CT's and the repowered unit at the site will be unaffected by the addition of the two new CT's.

The site has direct access to a four-lane highway, State Road (SR) 80, and barge access is available. The nearest town is Tice which is approximately 8 miles west of the site. The Fort Myers site has been listed as a potential or preferred site in previous FPL Site Plans.

a and b. U.S. Geological Survey (USGS) Map and Proposed Facilities Layout Map

A USGS map of the Fort Myers plant site, plus a map of the general layout of the proposed generating facilities at the site, is found at the end of this chapter.

c. Map of Site and Adjacent Areas

An overview map of the site and adjacent areas is also found at the end of this chapter. It is pertinent to note that several designations on the current South Florida Water Management District Florida Land Use, Cover, and Forms

Classification System (FLUCCS) appear to be in error or to require some clarification. For example, the freshwater marsh identified toward the western boundary of the site is actually FPL's 50-acre evaporation/percolation pond. Similarly, while there are scattered mangroves along the shore, the "Central Mangrove" area shown is not mangrove but is the FPL switchyard for that site. The "Improved Pasture" shown towards the east of the site is currently the location of a tree nursery.

d. Existing Land Uses of Site and Adjacent Areas

The land on the site is primarily dedicated to industrial use with surrounding grassy and landscaped areas. There is the previously mentioned 50-acre evaporation/percolation pond on the site. Much of the site has been recently used for direct construction activities.

FPL has recently donated an 18-acre island, located north of the plant in the Caloosahatchee River, to the United States Fish & Wildlife Service (USFWS) for the purpose of wildlife conservation. This island has been owned by FPL since the 1950's, but has never been developed. The USFWS has incorporated the island into the Caloosahatchee National Wildlife Refuge.

Lee County operates Manatee Park, (approximately 5 acres) with a manatee viewing area on FPL property to the east side of the discharge canal where it adjoins the Orange River south of SR 80. This manatee viewing area provides public viewing and education about the species.

The adjacent land uses are light commercial and retail to the east of the property and some residential areas located toward the west. Mixed scrub with some hardwoods and wetlands, plus agriculture land, can be found to the east and further to the south. The Caloosahatchee National Wildlife Refuge is located across the Caloosahatchee River, northwest of the power plant.

e. General Environmental Features On and In the Site Vicinity

1. Natural Environment

The site is adjacent to the south bank of the Caloosahatchee River near the confluence of the Orange River and the Caloosahatchee. Much of the site is no longer in its original natural condition. However, a scattering of mangroves can be found along the river shoreline. Some mixed scrub with some hardwoods and wetlands can be found to the east and further to the south. Other than the occasional congregation of manatees noted below, FPL is not aware of any significant environmental features on the site or in the vicinity.

2. Listed Species

The construction and operation of the new CT's at the site is not expected to affect any rare, endangered, or threatened species. The only known listed species associated with the site are the West Indian Manatees (Trichechus manatees: Federal - and State - listed as endangered) which are attracted to the warmed waters in the vicinity of the site discharge and can be found congregating in the area during cool weather.

The Florida Natural Areas Inventory (FNAI) reports the presence of the Eastern Indigo Snake (Drymarchons corais couperi: Federal - and State - listed as Threatened) and Tricolored Heron (Egretta triccolor: State - listed as a Species of Special Concern) within a two-mile radius of the site.

3. Natural Resources of Regional Significance Status

No Natural Resource of Regional Significance is identified on the plant site in the Southwest Florida Regional Strategic Policy Plan.

4. Other Significant Features

FPL is not aware of any other significant features of the site.

f. Design Features and Mitigation Options

The design option currently being pursued for the Fort Myers site is the addition of two stand-alone CT's. This new generation equipment will be installed on the existing facility property and will make effective use of existing transmission facilities and infrastructure although some substation and transmission line upgrades were required.

Mitigation options that have been incorporated include the use of combustion technology that is inherently low in air pollutant emissions.

g. Local Government Future Land Use Designations

The Local Government Future Land Use Plan designates the major portion of the site as Public Facilities and a small area as Resource Protection. Since there are no significant environmental resources on the site, and the "Resource Protection" designated area appears to be the location of a current tree nursery, FPL believes that this designation is in error.

h. Site Selection Criteria and Process

The Fort Myers plant has been selected as a preferred site due to consideration of various factors including system load and economics. Environmental issues were not a deciding factor since none of the existing preferred and potential sites exhibit significant environmental sensitivity or other environmental issues. All of these sites are considered ideally suitable for future expansion.

i. Water Resources

The available surface water source is the Caloosahatchee River and the available groundwater source is the sandstone aquifer.

j. Geological Features of Site and Adjacent Areas

The geology underlying the Fort Myers Plant consists of Quaternary Holocene and Pleistocene undifferentiated materials. The upper part of these

undifferentiated materials consists of fine-to-medium grained quartz sand with varying percentages of shell and clay. Hardpan frequently occurs at the base of the quartz sands. The lower section consists of shell beds with interbedded limestone. Underlying the undifferentiated materials are the Pliocene Tamiami formations, the Miocene Hawthorn formation, Oligocene Suwanee Limestone, the Eocene Crystal River and Williston formations, the Avon Park Limestone, and the Lake City Limestone.

Several stratigraphic units can be differentiated based upon shallow borings drilled on the plant property. Sand with some heterogeneous fill material related to past site construction activity covers most of the surface. It is underlain by layers of clayey sand and clay to a depth of approximately 23 feet. These units mantle a thicker clay unit with numerous shell fragments that occurs from 15 feet to about 55 feet below the surface. A silty sand with a trace of clay was encountered at 55 feet near the termination depth of one deep boring on the site.

The water table at the site occurs at levels from just under the surface to about 5 feet below grade. Locally, the surficial aquifer and surface water will generally flow toward the Caloosahatchee River. However, at the site, the intake and discharge canal will affect groundwater near the power block area. A drainage canal that borders the plant property on the west will affect groundwater flow along the western portion of the waste treatment area.

k. Projected Water Quantities For Various Uses

Facility water uses may include irrigation, potable use, etc. The total volume of these uses is estimated to be about 65 gallons per minute (gpm).

l. Water Supply Source By Type

For industrial processing, FPL anticipates that groundwater will be available. The new CT's will be air-cooled.

m. Water Conservation Strategies Under Consideration

A plan to treat and recycle equipment wash water, boiler blowdown, and equipment area runoff for use as service water would reduce ground water consumption.

n. Water Discharges and Pollution Control

Heated water discharge for the plant site as a whole will be dissipated using both the existing once-through cooling water system and a multi-cell-helper-cooling tower which will be used during the warmer months. Storm water runoff will be collected and used to recharge the surficial aquifer via a storm water management system. Design elements will be included to capture suspended sediments. Various facility permits mandate various sampling and testing activities which will provide an indication of any pollutant discharges. The facility employs a Best Management Practices (BMP) plan and Spill Prevention, Control, and Countermeasures (SPCC) plan to control the inadvertent release of pollutants.

o. Fuel Delivery, Storage, Waste Disposal, and Pollution Control

The combustion turbine-based repowering project, plus the addition of the two new CT's, required a natural gas pipeline to be installed. Florida Gas Transmission completed the permitting process and installed and operates the pipeline that serves the Fort Myers Plant. Virtually no solid waste is associated with natural gas firing.

p. Air Emissions and Control Systems

The natural gas-fired facilities at the plant site generally have air pollutant emissions that are substantially lower than emissions from the former oil-fired boilers. While several technologies are available for nitrogen oxide (NO_x) emissions control, FPL is using a dry-low-NO_x combustion turbine design. In these devices, combustion is staged in order to reduce the formation of combustion-derived oxides of nitrogen. FPL has committed to NO_x emission limits for this facility that will be among the lowest in the state. Sulfur dioxide and particulate emissions are intrinsically low due to the lack of sulfur and

solids in natural gas fuel. Carbon monoxide and volatile organic compound emissions can each be controlled via the use of efficient combustion rather than through the use of add-on control devices. CT facilities have been permitted at several locations throughout the state of Florida including near Class I areas. Dry-low-NO_x combustor systems have been repeatedly demonstrated to be the Best Available Control Technology (BACT) for the control of NO_x emissions for this technology pursuant to the requirements of the Clean Air Act.

q. Noise Emissions and Control Systems

Lee County has a noise ordinance that limits noise at receiving property lines of residential, public space, agricultural, or institutional to 66 decibels in the daytime and 55 decibels at night. FPL will undertake studies to assure that noise level associated with the new CT's comply with the Lee County noise standard.

r. Status of Applications

FPL acquired all permits needed to commence construction. Modifications to operating permits were requested in 2002 and will continue to be pursued as necessary through 2003.

Preferred Site # 2: Sanford Plant, Volusia County

The site is located on the 1,718-acre FPL Sanford property just west of Lake Monroe on the north bank of St. Johns River in Volusia County. Current facilities on the site include one steam electric generating unit with a nominal rating of 138 MW and a recently repowered natural gas-fired unit with a nominal rating of 910 MW. One other existing unit, Unit # 4, has been shut down and is in the process of being repowered using combined cycle technology. The site is within the city limits of Debary, and the community of Debary is located approximately 2 miles to the northwest. The town of Deland is approximately 4 miles west of the site. The site has direct access to a four-lane highway, State Road (SR) 17-92, and barge access is available. The Sanford site has been listed as a potential or preferred site in previous FPL Site Plans.

As mentioned above, FPL is in the process of adding new capacity at the Sanford site by replacing one existing oil-and gas-fired unit (i.e., existing Unit # 4) with advanced natural gas fired combustion turbines (CT's) and heat recovery steam generators (HRSG's). This type of steam generation replacement is commonly called repowering.

This repowering will enable FPL to produce significantly more electrical output with nearly the same environmental impact. The repowering of Unit # 4 will produce approximately 567 additional MW during Summer conditions, and approximately 652 additional MW of generation during Winter conditions, beyond the current capabilities of this unit. The existing 138 MW Unit # 3 and the recently repowered Unit # 5 will be unaffected by the repowering of Unit # 4.

a. and b. U.S. Geological Survey (USGS) Map and Proposed Facilities Layout Map

A USGS map of the Sanford plant site, plus a map of the general layout of the proposed generating facilities at the site, are found at the end of this chapter.

c. Map of Site and Adjacent Areas

An overview map of the site and adjacent areas is also found at the end of this chapter.

d. Existing Land Uses of Site and Adjacent Areas

A large part of the property is covered by the 1,100-acre closed cycle cooling pond that occupies almost the entire northern portion of the site. The remainder of the site is primarily rangeland and the power plant facilities.

The surrounding land use is largely crop land and pasture. To the east of the plant there is a small residential area and some commercial/industrial land use. There are some residential areas mixed in with the agricultural areas located between the site and the St. Johns River to the west. To the south is the St. Johns River. Residential homes and commercial/industrial businesses are located along the south side of the river.

e. General Environmental Features On and In the Site Vicinity

1. Natural Environment

Small, scattered wooded areas can be found on the site. There are two small areas of wetland marsh on the site and a few acres of wetland forest along the riverbank. There are some wooded areas on the site, primarily upland coniferous forest. Forested and non-forested wetlands can be found to the west, adjacent to the river. River and wetland areas towards the northwest are designated as part of the Wekiwa River Aquatic Preserve and Wekiwa River State Preserve.

2. Listed Species

One inactive bald eagle (Haliaeetus leucocephalus: Federal - and State - listed as Threatened) nest has been found on the site. Bald eagles have also nested in the Lake Monroe area. There are a number of other eagles nests in the vicinity of the site, primarily the St. Johns River. The Florida Natural Areas Inventory (FNAI) reports several Scrub Jay populations (Aphelocoma coerulescens: Federal - and State - listed as Threatened) located in scrub vegetation to the northwest of the site. West Indian Manatees (Trichechus manatus: Federal - and State - listed as Endangered) have also been found in this area.

3. Natural Resources of Regional Significance Status

The Wekiwa River Aquatic Preserve extends along the St. John's River in the vicinity of the plant.

4. Other Significant Features

FPL is not aware of any other significant features of the site.

f. Design Features and Mitigation Options

The design option for the Sanford Site is the repowering of one existing oil - and gas - fired boiler with natural gas fired combustion turbines (CT's) and heat recovery steam generators (HRSG's). Steam produced in the new HRSG's is directed to the existing steam turbine. Natural gas - fired facilities represent one of the cleanest, most efficient technologies currently available for capacity additions to FPL's system.

g. Local Governmental Future Land Use Designations

The site is designated as "Industrial Utilities" in the Local Government land use plan. The city is currently updating its Land Use Plan. It is expected that the name, but not the expected use designation, may change. Land use designation of the surrounding area is primarily Agricultural. There is an area of "Public Institution" around Lake Monroe to the southeast and a small area of "Mixed Use" to the west along Barwick Road.

h. Site Selection Criteria and Process

The Sanford plant has been selected as a preferred site due to consideration of various factors including system load and economics. Environmental issues were not a deciding factor since none of the existing preferred and potential sites exhibit significant environmental sensitivity or other environmental issues. All are considered permittable.

i. Water Resources

For surface water supply, the available water resource is the St. John's River and/or the on-site cooling pond, which is periodically refilled from the St. John's River. For ground water supply, the available resources are the shallow aquifer or the Floridan Aquifer.

j. Geological Features of Site and Adjacent Areas

The near-surface geology of Volusia County within the St. John's River Valley, like that of most of north central Florida, is represented by late Tertiary and Quaternary geological units. Soils in the vicinity of the plant include

unconsolidated Pleistocene to Recent sands, with intervening beds of shells and clay. These deposits from the reservoir for the surficial aquifer in the county. One of the two major structural features in the area is the Peninsula Arch that forms the backbone of the Florida Platform. The arch trends south-southeast and extends from southeast Georgia through Florida into the Great Bahamas. The geological material can be divided into an upper sequence of unconsolidated or poorly consolidated clastic sediments and a lower sequence of limestone rocks. These lower formations are part of the principle hydrologic unit referred to as the Floridan Aquifer. This aquifer, the top of which generally occurs through the region at or below 100 feet, is the major source of potable groundwater in Volusia County. Two faults, one trending north-to-south, the other trending east-to-west, intersect a number of miles north of the site. Downward displacement of the fault is hypothesized as being approximately 60 to 100 feet. The upper clastic region ranges in age from Miocene to Recent and is mostly sand but also contains discontinuous and interfingering lenses and beds of clay and silt.

k. <u>Projected Water Quantities for Various Uses</u>

FPL has estimated that 150 gallons per minute (gpm) is required for industrial processing purposes (boiler makeup, service water, etc.). Note that Unit # 4 currently takes its cooling water directly from an on-site FPL cooling pond and will continue to do so after repowering is completed. The cooling water needs for both of the repowered facilities (i.e., Unit # 4 and Unit # 5) will represent an increase over previous cooling water needs due primarily to the increased heat loading to the cooling pond that results from operating the larger repowered units more than they have been operated in the past and corresponding evaporative losses. Therefore, greater quantities of water will be used. Existing Unit # 3 will continue to use water from the St. John's River in a once-through cooling mode.

FPL evaluated alternative sources of water to meet the expected needs of the site. The existing off-site wells and the existing once - through cooling water system and cooling pond will continue to be used after the repowering project is completed, albeit the use of groundwater will decrease significantly from past usage.

l. **Water Supply Sources by Type**

The available surface water supply source is the St. John's River. The Floridan Aquifer is an available groundwater source for service water and boiler water.

m. **Water Conservation Strategies Under Consideration**

In 2000 FPL obtained a revised Consumptive Use permit from the St. John's Water Management District. This permit reduced the quantity of water that FPL has historically been permitted to withdraw from the ground in favor of additional use of surface water.

n. **Water Discharges and Pollution Control**

Heated water discharges will be dissipated using the existing once - through cooling water system of the existing cooling pond for repowered Unit # 4. Non-point source discharges are collected and reused. Treating and recycling equipment wash water, boiler blow-down, and equipment area runoff helps to minimize industrial discharges. Storm water runoff is collected and used to recharge the surficial aquifer via a stormwater management system. Design elements have been included to capture suspended sediments. Various facility permits mandate sampling and testing activities which provide indications of any pollutant discharges. The facility employs a Best Management Practices (BMP) plan and Spill Prevention, Control, and Countermeasure (SPCC) plan to control the inadvertent release of pollutants.

o. **Fuel Delivery, Storage, Waste Disposal, and Pollution Control**

The repowered facilities at the Sanford site required a larger natural gas pipeline to be installed. FPL contracted with Florida Gas Transmission Company (FGT) to permit, install, and operate this facility which is now fully operational. Virtually no waste is associated with natural gas firing.

p. Air Emissions and Control Systems

A natural gas-fired facility generally has air pollutant emissions that are substantially lower than emissions from the prior oil-fired boilers. While several technologies are available for nitrogen oxide (NO_x) emissions control, the chosen technology for the Sanford site is a dry low NO_x combustion turbine design type. In these types of devices, combustion is staged in order to reduce the formation of combustion-derived oxides of nitrogen. Sulfur dioxide and particulate emissions are intrinsically low due to the lack of sulfur and solids in natural gas fuel. Carbon monoxide and volatile organic compound emissions can each be controlled via the use of efficient combustion rather than through the use of add-on control devices. CC and CT facilities have been permitted at several locations throughout the state of Florida. Dry-low-NOx combustor systems have been repeatedly demonstrated to be the Best Available Control Technology (BACT) for the control of NO_x emissions for this technology pursuant to the requirements of the Clean Air Act.

q. Noise Emissions and Control Systems

Noise emissions from the project are not significantly different from current levels at the plant prior to repowering. FPL installed appropriate sound attenuation devices including insulation on high energy piping systems in order to ensure that sound levels do not exceed allowable levels. Similar natural gas-fired facilities (the Lauderdale plant in Broward County, the Fort Myers plant in Lee County, and the Martin plant in Martin County) have been constructed and operated without exceeding allowable noise levels.

r. Status of Applications

FPL acquired all permits needed to commence construction. Modifications to operating permits were requested in 2002 and will continue to be pursued as necessary through 2003.

Preferred Site # 3: Manatee Plant, Manatee County

The site is located in unincorporated north central Manatee County approximately 2.5 miles south of the Hillsborough-Manatee County line. It is 5 miles east of Parrish, Florida and is approximately 5 miles east of U.S. Highway 301 and 9.5 miles east of Interstate 75 (I-75). State Road (SR) 62 is about 0.5 miles south of the site. Saffold Road marks the eastern boundary of the site.

FPL's Manatee Plant occupies a portion of the approximately 9,500 acre Manatee Site which is owned wholly by FPL. The site includes a 4,000-acre cooling pond including the dike area. The existing approximately 1,620 MW (Summer) of generating capacity is made up of two steam units (Units # 1 and # 2) which have been in service since 1976 (Unit # 1) and 1977 (Unit # 2). These units burn both fuel oil (residual) with a maximum sulfur content of 1 percent and natural gas. Natural gas may be fired singly or in combination with fuel oil. A recent agreement between FPL and Gulfstream Natural Gas Systems (Gulfstream) will provide two natural gas sources for these units.

Pending final approval by the Governor and Cabinet, additional generating capacity will be added to the site in 2005 to meet projected FPL system capacity needs. Four new combustion turbines (CT's), four new heat recovery steam generators (HRSG's), and a new steam turbine generator are scheduled for in-service operation beginning in June, 2005. The four new CT's, HRSG's and steam turbine will ultimately be operating in combined cycle (CC) configuration. This new CC unit will add 1,107 MW (Summer) and 1,201 MW (Winter) capability to the site. This new CC Unit will be designated as "Manatee Unit # 3".

Unit # 3 will be located west of the existing generating Units # 1 and # 2. The location of the new combined cycle Unit # 3 at the Manatee Plant site and the selection of the highly efficient combined cycle technology (firing clean natural gas) will maximize the beneficial use of the site while minimizing environmental and land use impacts otherwise associated with the development of a new generating plant of this capacity. The Manatee site has been previously listed as a preferred or potential site in previous FPL Site Plans.

a. and b. **Map of the Manatee Plant Site and Land Use**

A map indicating the Manatee plant site showing the general layout of the facilities and a map indicating the land use of the site are found at the end of this chapter.

c. **Map of Site and Adjacent Areas**

An overview map of the site and adjacent areas is also found at the end of this chapter.

d. **Existing Land Uses of Site and Adjacent Areas**

A major portion of the site consists of a 4,000 acre cooling pond. Manatee Units # 1 and # 2 will not be affected by the addition of Unit # 3. The area for Unit # 3 is expected to comprise approximately 73 acres. The site and surrounding land uses are almost exclusively agriculture with the exception of the Willow Shores residential area located northwest of the Manatee Plant site. Individual homes are located in the larger of two out parcels within the Manatee Plant site along SR 62 at the northeast corner of the site. The vast majority of the Manatee Plant site has been redesignated from Agricultural/Rural to Major Public/Semi Public (1) (P/SP) land use category by the Manatee County Commission on November 19, 2002 with the approval of Ordinance 02-13. Electric generating plants are specifically allowed in the P/SP category in accordance with the Manatee County Local Government Comprehensive Plan and Land Development Regulation Act, Chapter 163, Part II, Florida Statutes (FS).

e. **General Environmental Features On and In the Site Vicinity**

1. **Natural Environment**

There are no incorporated areas within 5 miles of the Manatee Plant site. Unincorporated communities in the area include Willow, located about 2 miles north of the Manatee Plant; Parrish, located about 5 miles southwest of the plant; and, in Hillsborough County, Sundance, located 3 miles northwest of the plant; Sun City Center, located 7

miles north of the plant; and Wimauma, located 8 miles northeast of the plant.

The Manatee Plant site includes areas of improved pasture with forested land southeast of the project area. This forested area is comprised of flat woods and oak habitat. The western side of the Manatee Plant site is currently used for row crops (tomato farm). There are also wetlands to the southeast containing wet pine flat woods mixed with dry pine flat woods. There will not be any disturbance of existing wetlands associated with this project.

2. **Listed Species**

Construction and operation of the new Unit # 3 at the site is not expected to affect any rare, endangered, or threatened species. The majority of the site is cleared, grassed, and periodically mowed. The project area has been significantly altered by the construction and operation of the existing plant facilities, and, as a result, wildlife utilization of this area is expected to be minimal. Common wading birds utilizing the plant site outside of the project area include the great blue heron, little blue heron, great egret, snowy egret, and the white ibis. Typical mammals found in the habitats surrounding the project area are common bobcat, raccoon, deer, ferel hog, opossum, armadillo, skunk and gray squirrel. Avian species observed in the vicinity of the project include bald eagles, a variety of songbirds, red-shouldered hawks, and marsh hawks.

3. **Natural Resources of Regional Significance Status**

There are no county, State or Federally designated areas located within one mile of the plant site. The construction and operation of Manatee Unit # 3 is not expected to have any adverse impacts on parks, recreation areas, or environmentally sensitive lands that are associated with the Little Manatee River within a 5-mile radius of the project site. These lands include: Little Manatee River State Recreation Area, Little Manatee River State Canoe Trail, Florida Gulf Coast Railroad Museum, Cockroach Bay Aquatic Preserve, Critical

Manatee Habitat, South Hillsborough Wildlife Corridor, Hillsborough County ELAPP Parcels, and SOR-Little Manatee River.

4. **Other Significant Features**

FPL is not aware of any other significant features of the site.

f. Design Features and Mitigation Options

The design option, Manatee Unit # 3, is the addition of four new combustion turbines and HRSG's and one new steam turbine generator in combined cycle mode in a 4x1 configuration. Manatee Unit # 3 is scheduled to begin operation in mid – 2005. Natural gas, delivered via pipeline, will be the sole fuel for this unit.

Mitigation options being planned for Manatee Unit # 3 include the capture and reuse of plant process water and rainwater. In addition, other mitigating options include the use of combustion technology that is very efficient and low in air pollutant emissions, combined with pollution control technology (dry-low NO_x burners and selected catalytic reduction equipment).

g. Local Government Future Land Use Designations

As mentioned above, the Local Government Future Land Use Plan is consistent with the existing Designated uses of the Manatee Plant Site as major portions of the site are designated as Major Public/Semi Public (1) – P/PS/. Electric generating plants are specifically allowed in this land use category.

h. Site Selection Criteria and Process

The Manatee site has been selected as a preferred site due to consideration of various factors including system load and economics. Also, the at – the – time projected availability of a natural gas pipeline that will be available to Unit # 3 (as well as Units # 1 and # 2) in the near future was also a major factor in the selection of the Manatee site for the new 4x1 CC unit. Environmental issues were not a deciding factor since none of the existing preferred and potential

sites exhibit significant environmental sensitivity or other environmental issues. All of these sites are considered permittable.

i. **Water Resources**

The available surface water source is the Little Manatee River which supplies makeup water for the 4,000-acre cooling pond. Plant process and service water requirements are currently supplied by the cooling pond. There are three wells in the Floridan Aquifer that are reserved for standby purposes.

j. **Geological Features of Site and Adjacent Areas**

Manatee County has three physiographic provinces: the Gulf Coast Lowlands, the DeSoto Plains, and the Polk Upland. The Manatee Plant is situated on the boundary of the DeSoto Plains and the Gulf Coast Lowland provinces. The geology underlying the Manatee Plant consists of unconsolidated sediments comprised of sand, clay silt, marl shell, limestone, and phosphorite (terrace deposits) from the Pleistocene age to recent. Undifferentiated deposits comprised of sand and clay are generally described to be less than 25 feet thick. Underlying the differentiated materials are the Miocene Hawthorn Formation, the Tampa Member, the Suwanee Limestone of the Oligocene age, the Ocala Limestone of the Eocene Age, the Avon Park Formation, the Oldsmar Formation of the Eocene age, and the Cedar Key Formation of the Paleocene age.

The major hydrogeologic units that exist in the vicinity of the site include, in descending order: the surficial aquifer system, the intermediate aquifer system, and the Upper Floridian aquifer. The surficial aquifer system is generally unconfined in Manatee County and consists of Quarternary deposits of predominately marine and nonmarine quartz sand, clayey sand, shell, shelly marl, phosphorite, and occasional stringersmarl and limestone. In the vicinity of the site the surficial sediments are approximately 25 feet thick.

k. **Projected Water Quantities for Various Uses**

The estimated additional quantity of water for industrial processing is estimated to be 150 gpm (gallons per minute) plant process and service water.

FPL operates on-site water treatment systems for each of these uses. Water quantities for other uses such as irrigation and potable water are estimated to be approximately 5 gpm.

l. Water Supply Sources by Type

Manatee Unit # 3 will utilize the existing on-site cooling pond as its source of cooling water. The cooling pond operates as a "closed cycle" system; any makeup water is provided from the Little Manatee River to replace net evaporation and seepage losses from the pond. These makeup needs are within the existing agreement between FPL and the Southwest Florida Water Management District (SWFWMD). There are three wells currently on reserve (stand-by) that are in the Floridan Aquifer. FPL is currently evaluating alternative water sources for use at the Manatee Plant site.

m. Water Conservation Strategies Under Consideration

Available water including non-contact storm water, treated industrial wastewater, treated sanitary wastewater, and recovered service water are captured and returned to the cooling pond. Storm water from the equipment areas is also treated and returned to the cooling pond.

n. Water Discharges and Pollution Control

The Manatee Plant utilizes a Best Management Practices (BMP) plan, Spill Prevention, Control, and Countermeasure (SPCC) plan to assist in the control of inadvertent release of pollutants. Storm water runoff will be collected and routed to detention ponds. Construction activities will be managed so that equipment maintenance and fueling are performed in designated areas so that, in the event of a spill or release of any contaminant, impacts to any surface water or the cooling pond are minimized.

o. Fuel Delivery, Storage, Waste Disposal, and Pollution Control

The site is already serviced by fuel delivery services and facilities for residual, low sulfur (1 percent) fuel oil and, most recently, natural gas as an alternate fuel for existing Units # 1 and # 2. The Unit # 3 addition will be solely fueled by

natural gas that could be supplied by either Gulfstream or FGT as previously discussed.

p. Air Emissions and Control Systems

The addition of natural gas as a permitted fuel for existing Units # 1 and # 2 is expected to lower overall emissions during periods when natural gas, instead of fuel oil, is used. In addition, a NO_x reduction technology, reburn, has been approved for installation on Units # 1 and # 2 within the next several years.

The use of clean fuels and combustion controls will minimize air emissions from Unit # 3 and ensure compliance with applicable emission limiting standards. Using clean fuels minimizes emissions of sulfur dioxide (SO_2), particulate matter, and other fuel-bound contaminates. Combustion controls similarly minimize the formation of carbon monoxide and volatile organic compounds. NO_x emissions will be controlled using dry-low NO_x combustion technology and selective catalytic reduction (SCR). These design alternatives constitute the Best Available Control Technology for air emissions, and minimize such emissions while balancing economic, environmental, and energy impacts. Manatee Unit # 3 will incorporate features that will make it one of the most efficient and cleanest power plants in the State of Florida.

q. Noise Emissions and Control Systems

Noise emissions from the project are not anticipated to be significantly different from the current levels at the existing plant. Similar natural gas-fired facilities in Broward and Martin Counties have been constructed and operated without exceeding allowable noise levels.

r. Status of Applications

FPL filed the Site Certification Application (SCA) for the Manatee Plant Unit # 3 with the Florida Department of Environmental Protection (FDEP) on February 20, 2002 and received a positive recommendation from the Administrative Law Judge (ALJ) for the project on February 19, 2003.

Preferred Site # 4: Martin Plant, Martin County

The Martin site is located approximately 40 miles northwest of West Palm Beach, 5 miles east of Lake Okeechobee, and 7 miles northwest of Indiantown in Martin County, Florida. The site is bounded on the west by the Florida East Coast Railway (FEC) and the adjacent South Florida Water Management District (SFWMD) L-65 Canal, on the south by the St. Lucie Canal (C-44 or Okeechobee Waterway), and on the northeast by SR 710 and the adjacent CSX Railroad. The Martin site was identified in 1987 as a preferred location for development of coal gasification/combined cycle electric generation facilities and subsequent FPL Site Plans have continued to identify this site as a preferred site.

The existing 2,850 MW (Summer) of generating capacity at FPL's Martin site occupies a portion of the approximately 11,300 acres that are wholly owned by FPL. The generating capacity is made up of two steam units (Units # 1 and # 2), plus two combined cycle units (Units # 3 and # 4), and two combustion turbine units (Units # 8a and # 8b). The site includes a 6,800-acre cooling pond (6,500 acres of water surface and 300 acres of dike area) and approximately 300 acres for the existing power plant units and related facilities.

Additional generating capacity was added to the site in 2001 in the form of two combustion turbines (CT's) that operate in simple cycle mode using natural gas. Pending final project approval by the Governor and Cabinet, these two CT's will be converted into a four-on-one (4X1) combined cycle (CC) unit with the addition of two new CTs, four new Heat Recovery Steam Generators (HRSGs), and a new steam turbine generator. The resulting CC unit will be known as Martin Unit # 8. It is estimated to be in service in mid-2005 adding approximately 800 MW of capacity.

a. and b. U.S. Geological Survey (USGS) Map and Proposed Facilities Layout

A USGS map of the Martin plant site, plus a map of the general layout of the proposed generating facilities at the site, are found at the end of this chapter.

c. Map of Site and Adjacent Areas

An overview map of the site and adjacent areas is also found at the end of this chapter.

d. Existing Land Uses of Site and Adjacent Areas

A major portion of the site consists of a 6,800-acre cooling pond. The existing power plant facilities are located on approximately 300 acres. To the east of the power plant there is an area of mixed pine flat wood with a scattering of small wetlands. To the north of the cooling pond there is a 1,200-acre area which has been set aside as a mitigation area. There is a peninsula of wetland forest on the West Side of the reservoir, that is named the Barley Barber Swamp. The Barley Barber Swap encompasses 400 acres and is preserved as a natural area. There is also a 10-kilowatt (kW) photovoltaic energy facility at the south end of this site.

e. General Environment Features On and In the Site Vicinity

1. Natural Environment

As noted above, the Barley Barber Swamp is located on the site. There is also a 1,200-acre mitigation area in the northern area of the site where wetlands and uplands have been restored. Along the south and west sides of the cooling pond is an area where the vegetation has been maintained in its natural state in order to serve as a wildlife corridor. There are pine flat woods and small-scattered wetlands to the east of the plant.

2. Listed Species

Construction and operation of a new unit at the site is not expected to affect any rare, endangered, or threatened species. There are two active Bald Eagle (*Haliaeetus leucocephalus*: Federal - and State - listed as Threatened) nests that have been on the site for many years. The Florida Natural Areas Inventory (FNAI) database notes a record of Eastern Indigo Snakes (*Drymachon coralis coupert*, which

are Federal - and State - listed as threatened) in the Barley Barber Swamp. A number of other Bald Eagle nests and sightings of Eastern Indigo Snakes are reported by the FNAI database within a two-mile radius of the site. Infrequent sightings of Florida Panther have been made in the vicinity of the site area.

3. **Natural Resources of Regional Significance Status**

The Treasure Coast Regional Planning Council lists the "FPL Preserve", including the Barley Barber Swamp, as a Significant Regional Facility. Natural communities such as uplands and wetlands are also generically listed as Resources of Regional Significance.

4. **Other Significant Features**

FPL is not aware of any other significant features of the site.

f. Design Features and Mitigation Options

The design option is to add two new CT's and four new HRSG's and a new steam turbine that, together with the two existing CT's, will comprise Martin Unit # 8. This unit is scheduled to be in-service in mid-2005. Natural gas delivered via pipeline is the primary fuel type for this unit (with light oil serving as a backup fuel). Natural gas-fired facilities are among the cleanest, most efficient technologies currently available.

Mitigation options being considered include the capture and reuse of plant process water and rainwater, plus the use of cooling towers. The facility already encompasses several preserved areas where wildlife is abundant.

g. Local Government Future Land Use Designations

Local government future land use designation for the site is "Public Utilities". Designations for the surrounding area are primarily "Agricultural". There are also limited areas of "Agricultural Ranchette", "Industrial", and a small "Commercial" area designation. To the southeast of the property, fronting on the St. Lucie Canal, is an area designated for "Public Conservation".

h. **Site Selection Criteria Process**

The Martin plant has been selected as a preferred site due to consideration of various factors including system load and economics. Environmental issues were not a deciding factor since none of the existing preferred and potential sites exhibit significant environmental sensitivity or other environmental issues. All of these sites are considered permittable.

i. **Water Resources**

Surface water resources currently used at the Martin facility include the cooling pond which takes its water from the St. Lucie canal. The available ground water resource is the surficial aquifer system which is used as a source of potable water and for service water for Units # 1 and # 2. Both of these sources are available for use with the site expansion.

j. **Geological Features of Site and Adjacent Areas**

FPL's Martin site is underlain by approximately 13,000 feet of sedimentary rock strata. The basement complex in this area consists of Paleozoic igneous and metamorphic rocks about which little is known due to their great depth.

Overlying the basement complex to the ground surface are sedimentary rocks and deposits that are primarily marine bin origin. Below a depth of about 400 feet these rocks are predominantly limestone and dolomite. Above 400 feet the deposits are largely composed of sand, silt, or clay. The deepest formation in Martin County on which significant published data are available is the Eocene Age Avon Park. Limited information is available from wells penetrating the underlying Lake City formation. The published information on the sediments comprising the formations below the Avon Park Limestone in western Martin County is based on projections from deep wells in Okeechobee, St. Lucie, and Palm Beach Counties.

k. **Projected Water Quantities for Various Uses**

The estimated additional quantity of water required for industrial processing is 130 gallons per minute (gpm) for uses such as boiler water and service water.

FPL operates on-site water treatment systems for each of these uses. Cooling water for new Unit # 8 will be supplied by the addition of cooling towers. The two existing CT's that will be converted into combined cycle operation are currently air-cooled. Makeup water for the pond is taken from the St. Lucie canal. The current makeup water quantity to the cooling pond (approximately 4,800 gpm) is expected to be adequate for the proposed expansion. Water quantities needed for other uses such as irrigation and potable water are estimated to be approximately 5 gpm.

l. Water Supply Sources by Type

Martin Unit # 8 will utilize the existing on-site cooling pond as the source of cooling water for the cooling towers and as a heat sink for the dissipation of cooling water heat. The cooling pond operates as a "closed cycle" system in which heated water from the generating unit loses its heat as it is circulated within the pond and back around to the plant intake. Water is also collected in a seepage ditch surrounding the cooling pond and is then pumped back into the cooling pond. Makeup water to the pond is withdrawn from the St. Lucie canal as needed to replace net evaporation and seepage losses from the pond. Such needs will comply with the existing agreement between FPL and the South Florida Water Management District (SFWMD) regarding allocation of cooling water to the pond and with SFWMD's regulations for consumptive water use.

The existing water treatment system at the plant, which provides treated water for use in the Unit # 1 and # 2 boilers, as well as for the HRSG's associated with Units # 3 and # 4, will be used to provide treated water for Unit # 8.

m. Water Conservation Strategies Under Consideration

Impacts on the surficial aquifer will be reduced by changing the source of plant process water to the Floridan Aquifer upon completion of Unit # 8. In addition, the entire plant site captures and reuses process water whenever feasible and manages stormwater in such a manner so as to recharge the surficial aquifer.

n. Water Discharges and Pollution Control

Heated water discharges will be dissipated in the cooling pond. Non-point source discharges are not an issue since there are none at this facility. Industrial discharges will be minimized by treating and recycling equipment wash water, boiler blowdown water, and equipment area runoff. Storm water runoff is collected and used to recharge the surficial aquifer via a storm water management system. Design elements have been included to capture suspended sediments. Facility permits mandate various sampling and testing activities that provide indications of any pollutant discharges. The facility employs a Best Management Practices (BMP) plan and Spill Prevention, Control, and Countermeasure (SPCC) plan to control the inadvertent release of pollutants.

o. Fuel Delivery, Storage, Waste Disposal, and Pollution Control

The site is already serviced by multiple fuel delivery facilities. However, the addition of new Unit # 8 will require an enlargement of the existing natural gas pipelines, the installation of a new pipeline, or the addition of another pipeline compressor station. There are currently two natural gas supply lines into the facility, as well as an oil pipeline, which serve the existing steam boilers and combined cycle generating units. Distillate fuel oil is also received by truck and stored in above ground storage tanks. The existing natural gas line also serves CT Units # 8a and # 8b.

p. Air Emissions and Control Systems

FPL's plan for Unit # 8 is subject to "New Source Review" under Federal and State Prevention of Significant Deterioration (PSD) regulations. This review requires these units to meet New Source Performance Standards (NSPS) and that Best Available Control Technology (BACT) be selected to control emissions of those pollutants emitted in excess of applicable PSD significant emission rates. The primary purpose of BACT analysis is to minimize the allowable increases in air pollutants taking into account energy, environmental, and economic impacts. This process provides for the potential for future economic growth without significantly degrading air quality.

q. Noise Emissions and Control Systems

A field survey and impact assessment of noise expected to be caused by unit construction at the site indicated that construction noise would be below current noise levels for the residents nearest the site. Noise from the operation of the new unit will also be within allowable levels.

r. Status of Applications

A Site Certification Application (SCA) was filed in December, 1989, for the construction and operation of the Martin Coal Gasification/Combined Cycle project under the Florida Electrical Power Plant Siting Act.

On June 15, 1990, the Public Service Commission issued a Determination of Need Order for proposed Martin Units # 3 and # 4. This determination of need applied to the additional 832 MW of combined cycle generation. The Siting Board issued a Land Use Order on June 27, 1990. The Certification Hearing was held on November 5-7, 1990. On February 12, 1991, the Governor and Cabinet, serving as the Siting Board, approved the construction and operation of natural gas-fired combined cycle Units # 3 and # 4 and determined that the Martin Site has capacity to accommodate additional combined cycle units fueled by natural gas or fuel oil.

Since the initial certification in 1991, the certification was modified five times through 1999 to provide authorization for items such as CT testing, increasing the cooling pond elevation, incorporating changes from other permits, and incorporating a custom fuel monitoring program. For the addition of the two simple cycle CT's mentioned above, FPL obtained a sixth modification to the existing site certification in August 2000.

In order to convert these two CT's from simple cycle to (4X1) CC configuration (Unit # 8), a seventh modification to the Site Certification is required. FPL filed the SCA on February 1, 2002 with the Florida Department of Environmental Protection (FDEP). A positive recommendation from the Administrative Law Judge for the project was received in early March of 2003. The certification process is expected to be completed with Governor and Cabinet's final review near the end of May 2003.

IV.F.2 Potential Sites

Five (5) sites are currently identified as potential sites for future generation additions to meet FPL's 2007 – on capacity needs.[2] These sites have been identified as "potential sites" due to considerations of location to FPL load centers, space, infrastructure, and/or accessibility to fuel and transmission facilities. These sites are suitable for different capacity levels and technologies.

Each of these potential sites offers advantages and disadvantages relative to engineering considerations and/or costs associated with the construction and operation of feasible technologies. In addition, each potential site has different characteristics that could require further definition and attention. For purposes of estimating water usage amounts, it is assumed that a natural gas-fired CC unit would be the technology of choice for any capacity additions at the sites.

Permits are presently considered to be obtainable for all of these sites, assuming measures can be taken to mitigate any particular site-specific environmental concerns that may arise. No significant environmental constraints are currently known for any of these five sites. The potential sites briefly discussed below are presented in alphabetical order. At this time FPL considers each site to be equally viable.

Potential Site # 1: Cape Canaveral Plant, Brevard County

This site is located on the FPL Cape Canaveral Plant property in unincorporated Brevard County. The city of Port St. Johns is located less than a mile away. The site has direct access to a four-lane highway (US 1). A rail line is located near the plant. The existing facility consists of two 400 MW (approximate) steam boiler type generating units.

a. U.S. Geological Survey (USGS) Map

A USGS map of the Cape Canaveral property site is found at the end of this chapter.

[2] As has been described in previous FPL Plant Site Plans, FPL also considers a number of other sites as possible sites for future generation additions. These include the remainder of FPL's existing generation sites.

b. and c. Land Uses and Environmental Features

This site is located on the Indian River. The land is primarily dedicated to industrial use with surrounding grassy areas and a few acres of remnant pine forest. The land adjacent to the site is dedicated to light commercial and residential use. There are no significant environmental features on the site.

d. and e. Water Quantities and Supply Sources

FPL projects that an increase of up to 260 gallons per minute (gpm) would be required for industrial processing use (boiler makeup, service water, etc.) It is expected that industrial cooling water needs could be met using the current 550,000 gpm once-through cooling water quantity. For industrial processing, FPL would use existing on-site wells or local gray water.

Potential Site # 2: Midway Substation Property, St. Lucie County

The site is located on the 122-acre Midway Substation property. Current facilities on the site include an electric substation. The site has direct access to a two-lane highway, State Road (SR) 712 and a nearby entrance to I-95. The City of Port St. Lucie is immediately east and west of the Midway site. The City of Ft. Pierce is approximately 9 miles northeast of the site.

a. U.S. Geological Survey (USGS) Map

A USGS map is provided of the Midway site area is provided at the end of this chapter.

b. and c. Land Uses and Environmental Features

The land on the site is currently dedicated to industrial and agricultural use. Much of the site is currently not being used. Developed portions of the adjacent properties are primarily agricultural (orange groves and cattle grazing). Undeveloped portions include mixed scrub with some hardwoods and wetlands.

d. and e. Water Quantities and Supply Sources

No surface water source is available at this site. The water source would either be groundwater from the shallow aquifer or a local source of gray water. It is estimated that 150 gallons per minute (gpm) will be needed for industrial processing water for uses such an inlet air cooling, No_x control during light oil firing and for service water. Other facility water uses may include irrigation, potable use, etc. The total volume of these uses is estimated to be about 5 gpm.

Also, as part of the Everglades Restoration Project, a 500-acre retention pond (Ten Mile Creek Project) is scheduled to be completed near the proposed Midway site in mid-2004. It is possible that some water from this storage facility could be utilized for cooling to supplement ground water usage.

Potential Site # 3: Port Everglades Plant, Broward County

This site is located on the 94-acre FPL Port Everglades plant site in Port Everglades, Broward County. The site has convenient access to State Road (SR) 84 and Interstate 595. A rail line is located near the plant. The existing plant consists of four steam boiler generating units: two 200 MW (approximate) and two 400 MW (approximate) sized units. The four steam boilers are capable of firing residual fuel oil, natural gas, or a combination of both. The site also is home to twelve simple cycle gas turbine (GT) peaking units of 30 MW (approximate) each. The GT's are part of the Gas Turbine Power Park that is made up of 24 GT's at the Lauderdale Plant site and the twelve GTs at the Port Everglades site. The GT's are capable of firing either natural gas or liquid fuel.

a. U.S. Geological Survey (USGS) Map

A map of the Port Everglades plant site is found at the end of this chapter.

b. and c. Land Uses and Environmental Features

The land on this site is primarily industrial. The adjacent land uses are port facilities and associated industrial activities, oil storage, cruise ships, and light commercial.

d. and e. Water Resources and Supply Sources

FPL estimates that up to 130 gallons per minute (gpm) of industrial processing water would be required for uses such as boiler makeup, fogger usage, and service water. FPL expects to use the existing municipal water supply for industrial process and makeup water. Cooling water would be drawn from the intercoastal waterway and cooling towers would be constructed.

Potential Site # 4: Riviera Plant, Palm Beach County

This site is located on the FPL Riviera Plant property in Riviera Beach, Palm Beach County. The site has direct access to a four-lane highway, US 1, and barge access is available. A rail line is located near the plant. The facility currently houses two operational 300 MW (approximate) steam boiler generating units and one retired 50 MW generating unit.

a. U.S. Geological Survey

A USGS map of the Riviera plant site is found at the end of this chapter.

b. and c. Land Uses and Environmental Features

The land on the site is primarily covered by the existing generation facilities with some open maintained grass areas. There is a small manatee viewing area on the site, which is operated seasonally by FPL. Adjacent land uses include port facilities and associated industrial activities, as well as light commercial and residential development. The site is located on the Intracoastal Waterway near the Lake Worth Inlet.

d. and e. Water Quantities and Supply Sources

Additional industrial processing water needs are estimated to be up to 40 gallons per minute (gpm). Industrial cooling water needs are estimated to be up to 54,000 gpm using the existing once-through cooling water system. The existing municipal water supply would be used for industrial processing water if

additional generating capacity is placed at Riviera. For once-through cooling water, FPL would continue to use Lake Worth as a source of water.

Potential Site # 5: Turkey Point Plant, Dade County

The Turkey Point Plant site is located on the West Side of Biscayne Bay 25 miles south of Miami. The site is directly on the shoreline of Biscayne Bay and is geographically located approximately 9 miles east of Florida City on Palm Drive. Access to the plant site is limited due to the nuclear units located there. The land surrounding the site is owned by FPL and acts as a buffer zone. The site is comprised of the nuclear and fossil plants, the cooling canals, an FPL-maintained natural wildlife refuge, and wetlands that have been set aside as an Everglades Mitigation Bank.

Units # 1 and # 2 are fossil fuel generating plants with approximate generating capacity of 400 MW each. Unit 1 was completed in 1967 and Unit # 2 in 1968. Turkey Point also has five diesel peaking units that in total produce approximately 12 MW. These units are primarily used to provide emergency power, but occasionally run during the Summer to provide power during peak load demands.

a. U.S. Geological Survey (USGS) Map

A USGS map of the Turkey Point plant site, is found at the end of this chapter.

b. and c. Land Uses of Site and Environmental Features

A major portion of the site consists of a self-contained cooling canal system that supplies water to condense steam used by the existing units' turbine generators. The canal system consists of 36 interconnected canals each five miles long, 200 feet wide and four feet deep. The remaining developed area of the site is where the two fossil steam generating units and 5 diesel generators are located. Adjacent to the fossil plant are the two nuclear generating units. To the south, wetlands have been set aside as part of the Everglades

Mitigation Bank in an effort to restore these areas to historical plant communities and hydrological function.

d. and e. Water Resources and Supply Sources

The additional quantity of water for industrial processing is estimated to be 150 gpm for plant process and service water. Water for this type of use would be supplied by a county water system. The current plant water treatment system, which provides treated water for use in Units # 1 and # 2 boilers, would likely be expanded.

Water for cooling would likely by supplied by the existing closed loop cooling canal system, although reclaimed water from a nearby publicly owned treatment works could possibly be utilized, if available. Cooling towers may also be used.

Environmental and Land Use Information:

Supplemental Information

Preferred Site: Fort Myers

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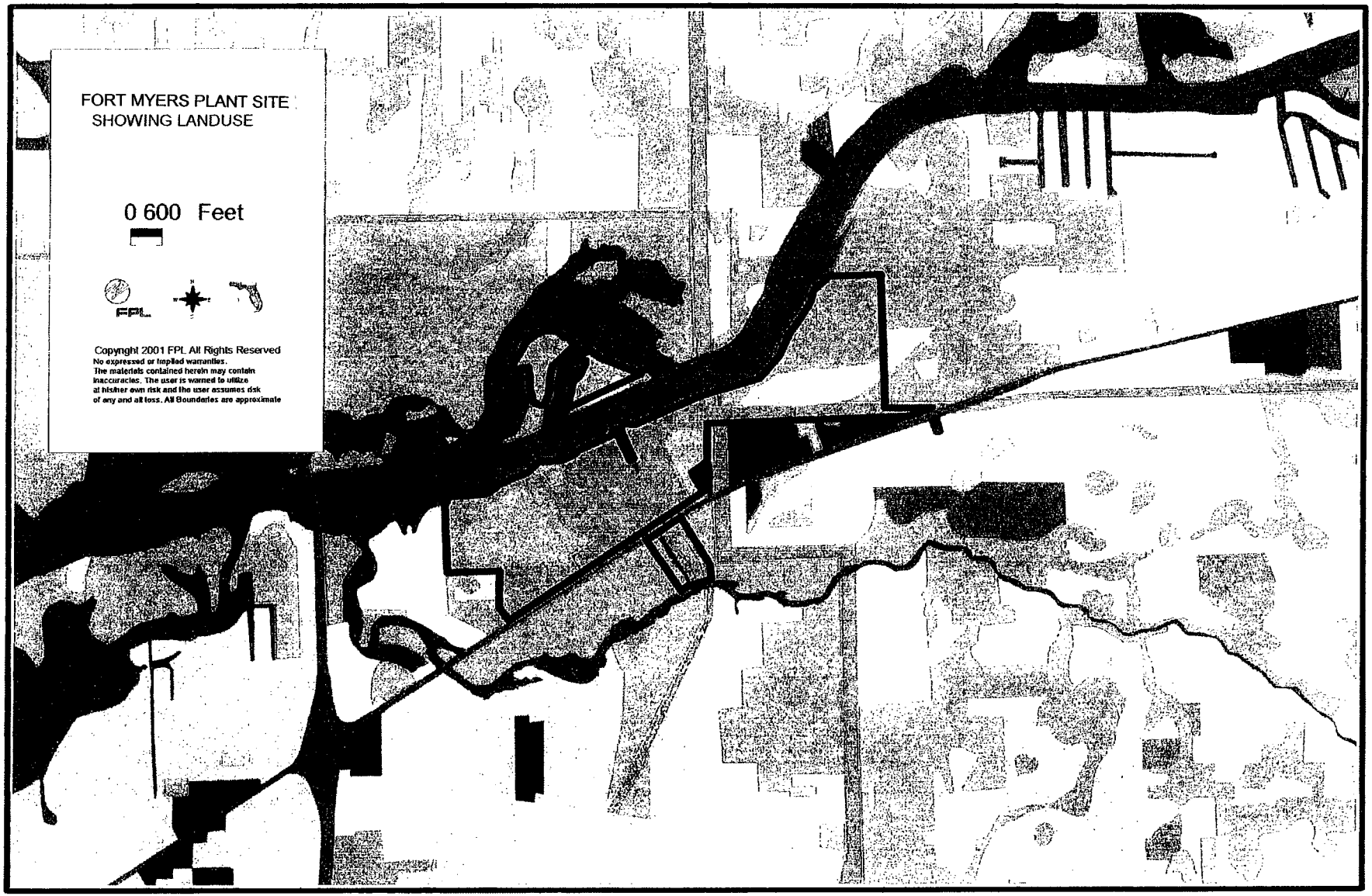
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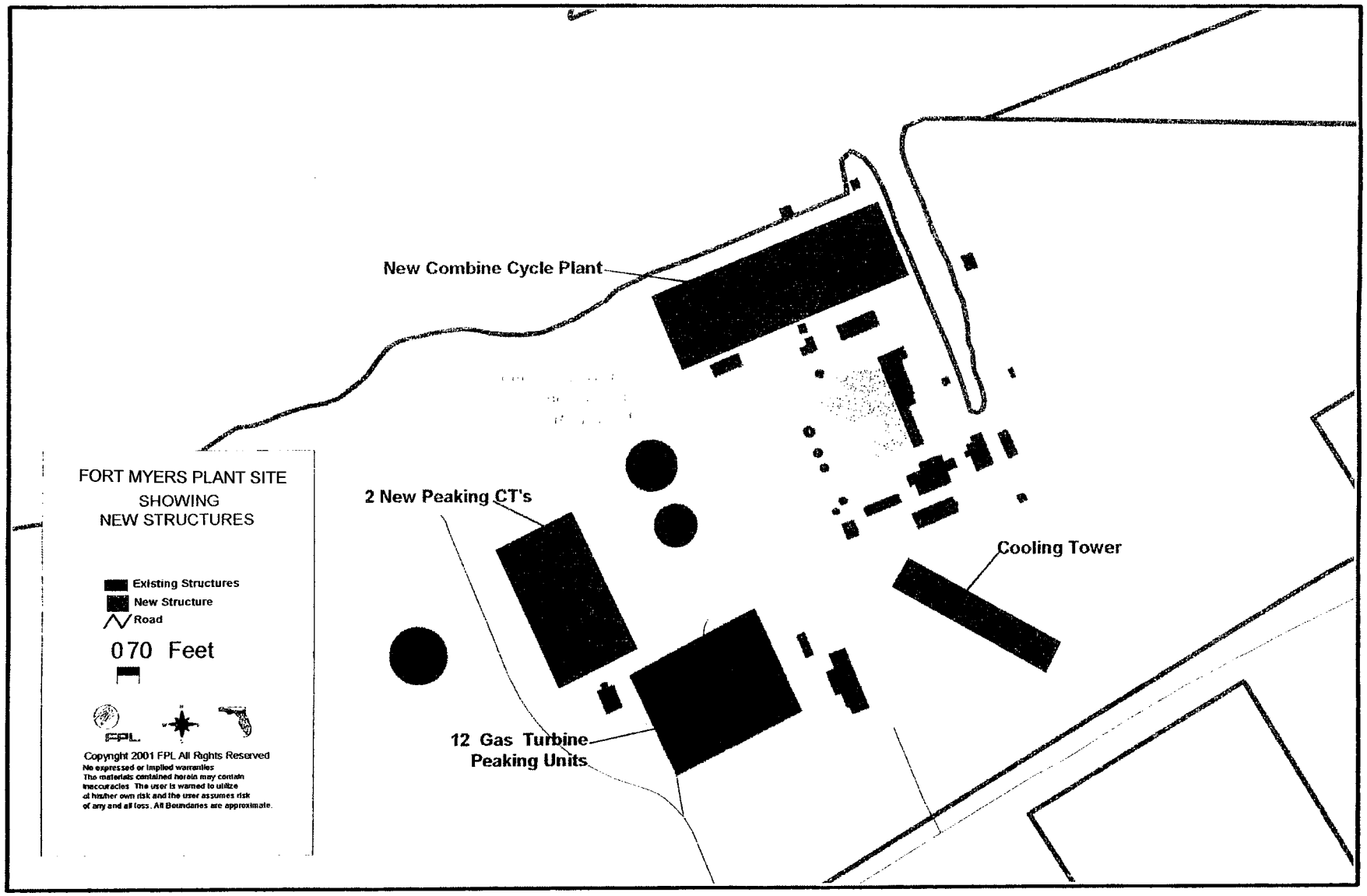
LEGEND FOR LANDUSE MAPS

Plant Site Boundary

Level 3 Landuse Categories 1995

- Residential Low Density
- Residential Medium Density
- Residential High Density
- Commercial and Services
- Industrial
- Extractive
- Institutional
- Recreational
- Open Land
- Cropland and Pastureland
- Tree Crops
- Feeding Operations
- Nurseries and Vineyards
- Specialty Farms
- Other Open Lands <Rural>
- Herbaceous
- Shrub and Brushland
- Mixed Rangeland
- Upland Coniferous Forests
- Upland Hardwood Forests
- Tree Plantations
- Streams and Waterways
- Lakes
- Reservoirs
- Bays and Estuaries
- Major Springs
- Slough Waters
- Oceans Seas and Gulfs
- Wetland Hardwood Forests
- Wetland Coniferous Forests
- Wetland Forested Mixed
- Vegetated Non-Forested Wetlands
- Non-Vegetated
- Wetland Shrub
- Beaches OtherThan Swimming Beaches
- Sand Other Than Beaches
- Exposed Rock
- Disturbed Lands
- Riverine Sandbars
- Transportation
- Communications
- Utilities
- Vegetation-Sea Grass


New Combine Cycle Plant
2 New Peaking CT's
Cooling Tower
12 Gas Turbine
Peaking Units
FORT MYERS PLANT SITE
SHOWING
NEW STRUCTURES
Existing Structures
New Structure
Road
070 Feet
FPL
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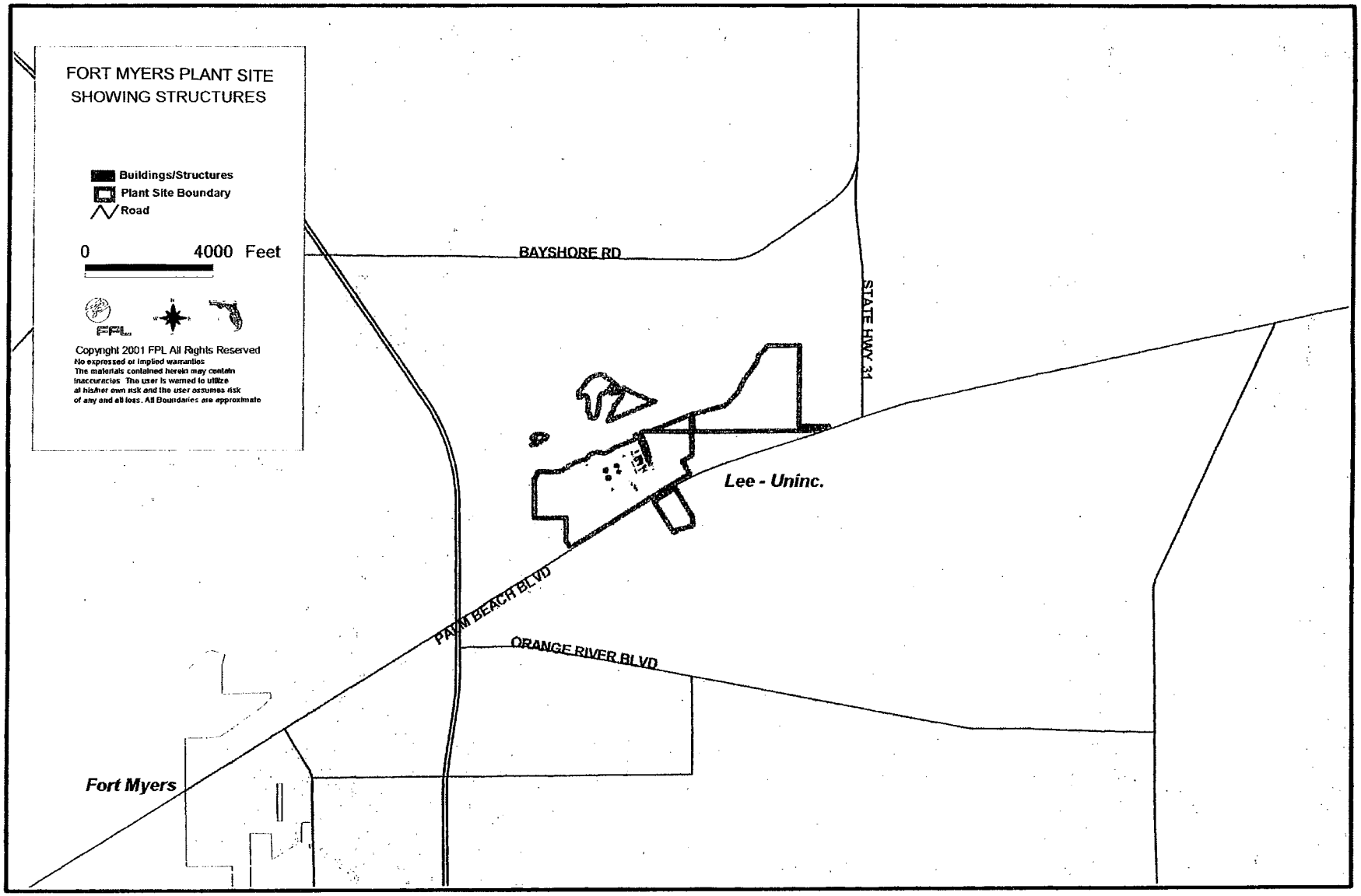
FORT MYERS PLANT SITE
SHOWING STRUCTURES
Buildings/Structures
Plant Site Boundary
Road
0
4000 Feet
FPL
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No expressed or implied warranties
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BAYSHORE RD
STATE HWY 31
Lee - Uninc.
PALM BEACH BLVD
ORANGE RIVER BLVD
Fort Myers

Environmental and Land Use Information:

Supplemental Information

Preferred Site: Sanford

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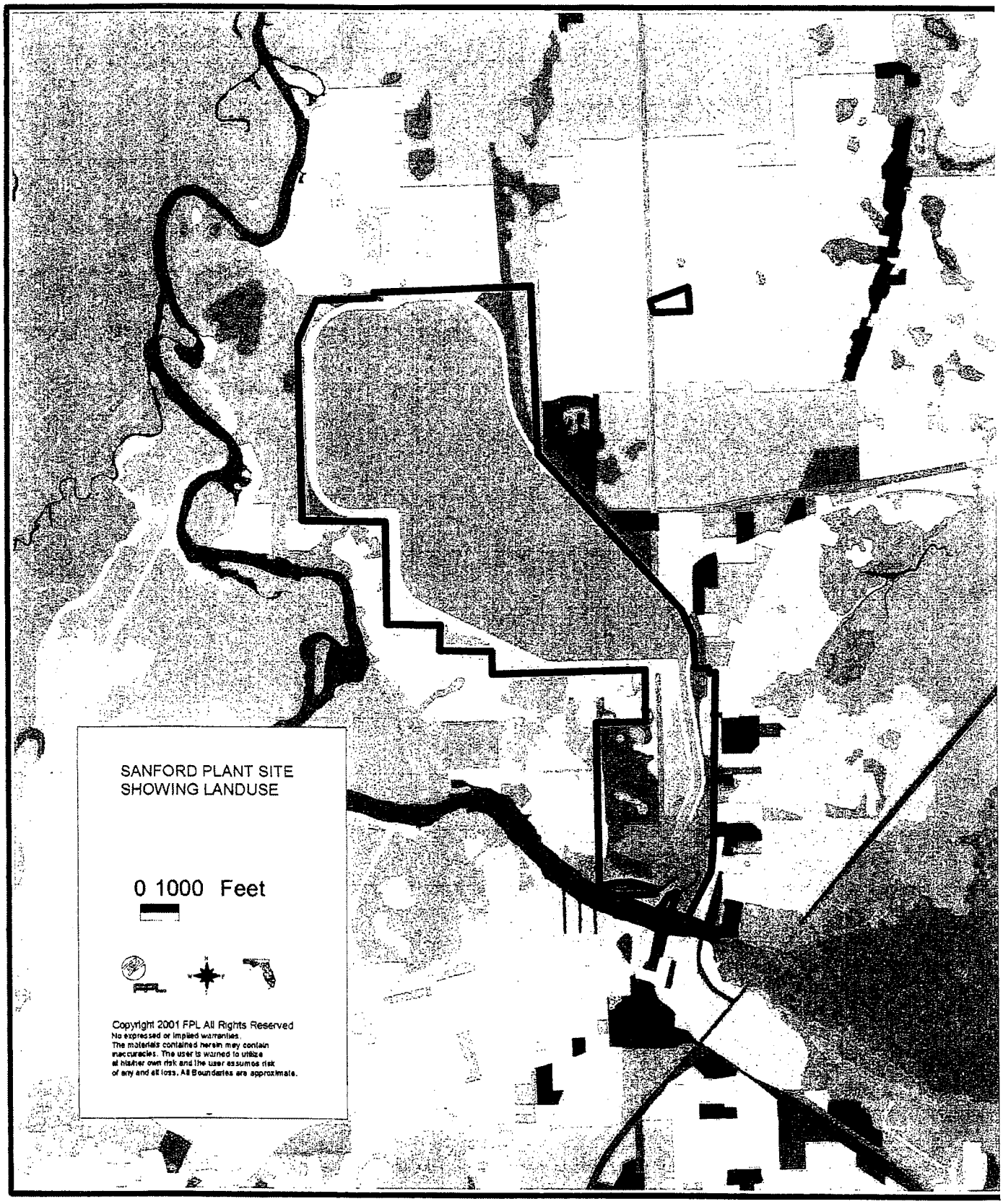
SANFORD PLANT SITE
SHOWING LANDUSE
0 1000 Feet
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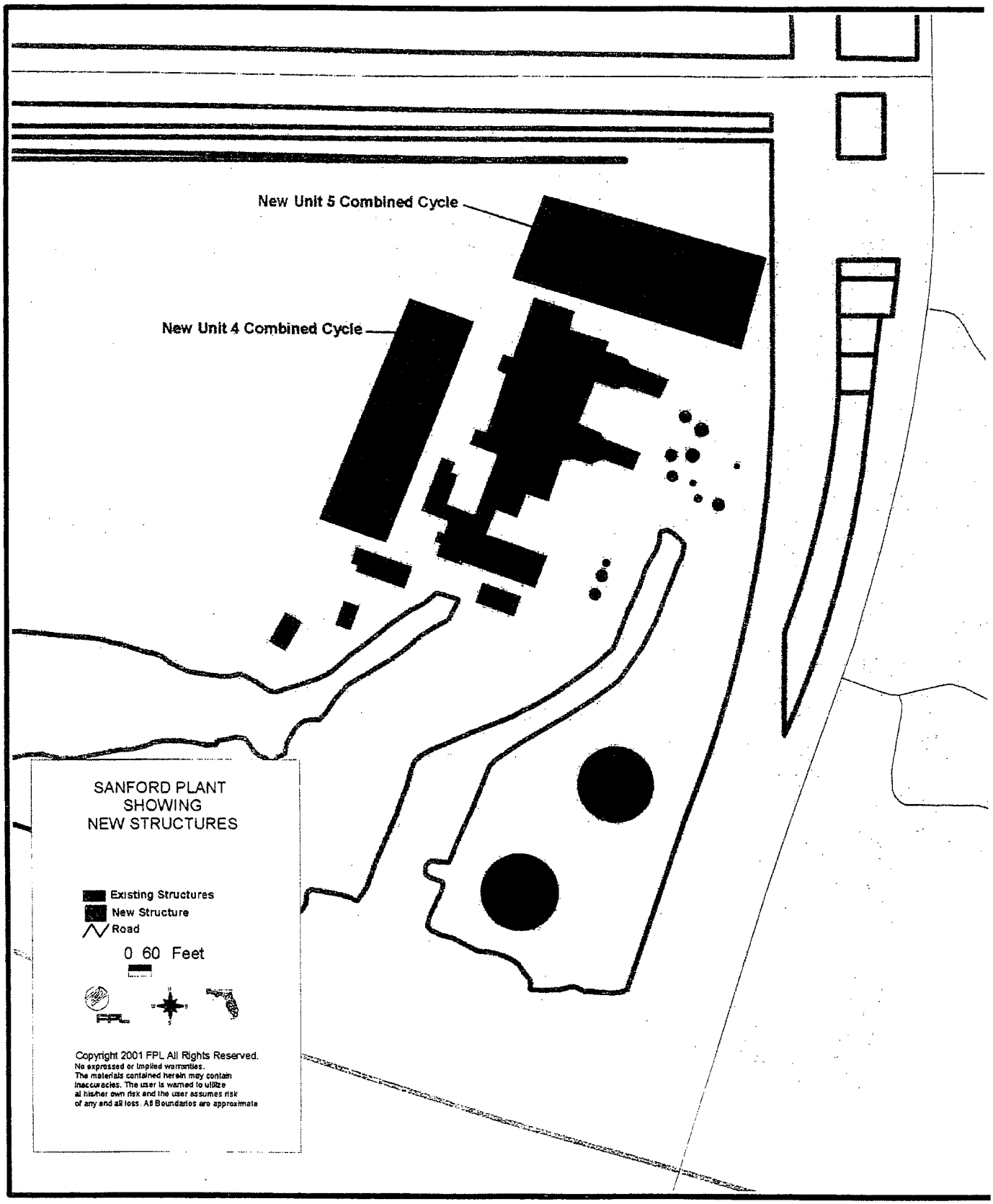
LEGEND FOR LANDUSE MAPS

Plant Site Boundary

Level 3 Landuse Categories 1995

- Residential Low Density
- Residential Medium Density
- Residential High Density
- Commercial and Services
- Industrial
- Extractive
- Institutional
- Recreational
- Open Land
- Cropland and Pastureland
- Tree Crops
- Feeding Operations
- Nurseries and Vineyards
- Specialty Farms
- Other Open Lands <Rural>
- Herbaceous
- Shrub and Brushland
- Mixed Rangeland
- Upland Coniferous Forests
- Upland Hardwood Forests
- Tree Plantations
- Streams and Waterways
- Lakes
- Reservoirs
- Bays and Estuaries
- Major Springs
- Slough Waters
- Oceans Seas and Gulfs
- Wetland Hardwood Forests
- Wetland Coniferous Forests
- Wetland Forested Mixed
- Vegetated Non-Forested Wetlands
- Non-Vegetated
- Wetland Shrub
- Beaches OtherThan Swimming Beaches
- Sand Other Than Beaches
- Exposed Rock
- Disturbed Lands
- Riverine Sandbars
- Transportation
- Communications
- Utilities
- Vegetation-Sea Grass


New Unit 5 Combined Cycle
New Unit 4 Combined Cycle
SANFORD PLANT
SHOWING
NEW STRUCTURES
Existing Structures
New Structure
Road
0 60 Feet
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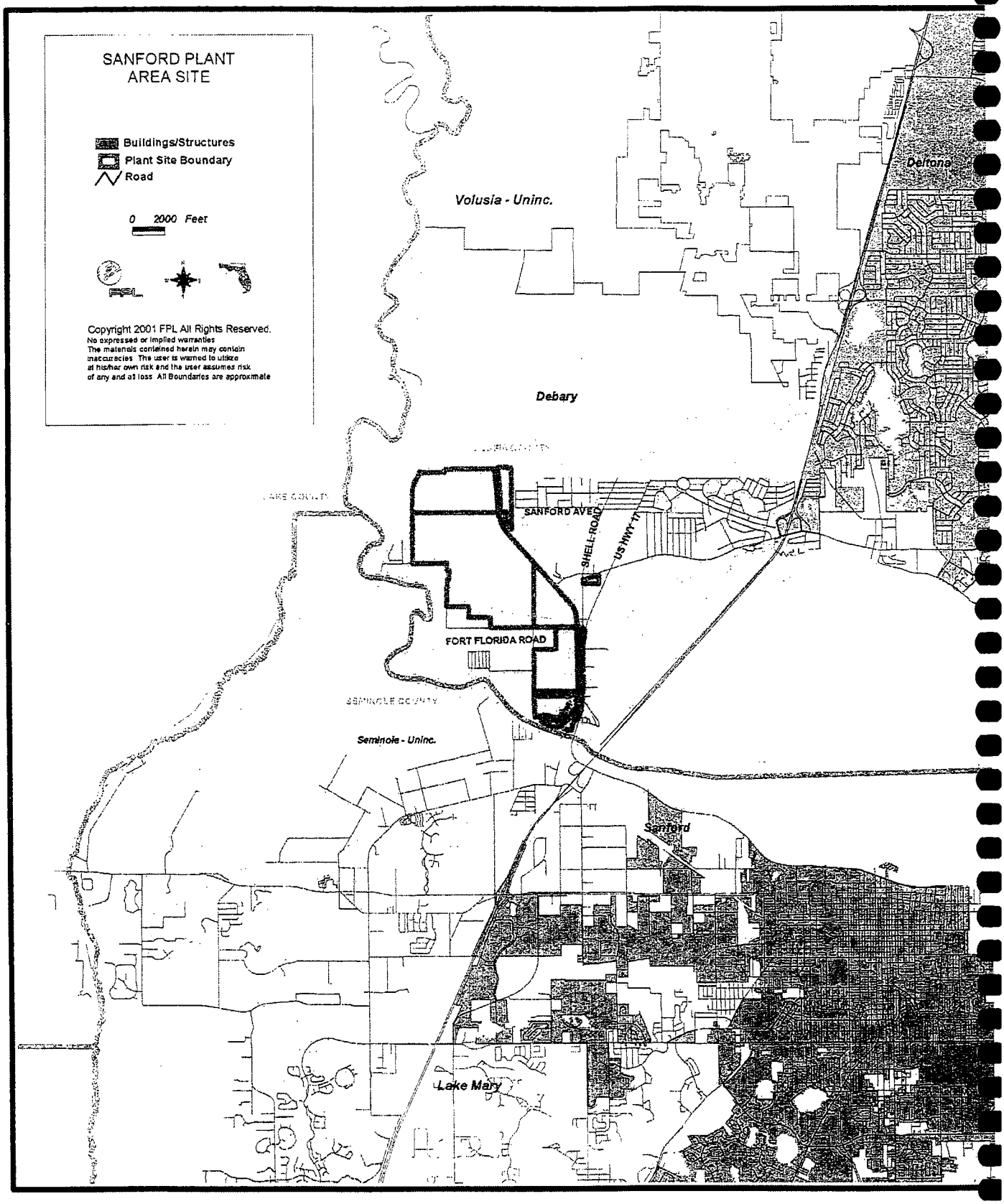
SANFORD PLANT
AREA SITE
Buildings/Structures
Plant Site Boundary
Road
0 2000 Feet
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The materials contained herein may contain
inaccuracies The user is warned to utilize
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of any and all loss All Boundaries are approximate
Volusia - Uninc.
Debary
Deltona
SANFORD AVE
SHELL ROAD
US HWY 17
FORT FLORIDA ROAD
Seminole - Uninc.
Sanford
Lake Mary

Environmental and Land Use Information:

Supplemental Information

Preferred Site: Manatee

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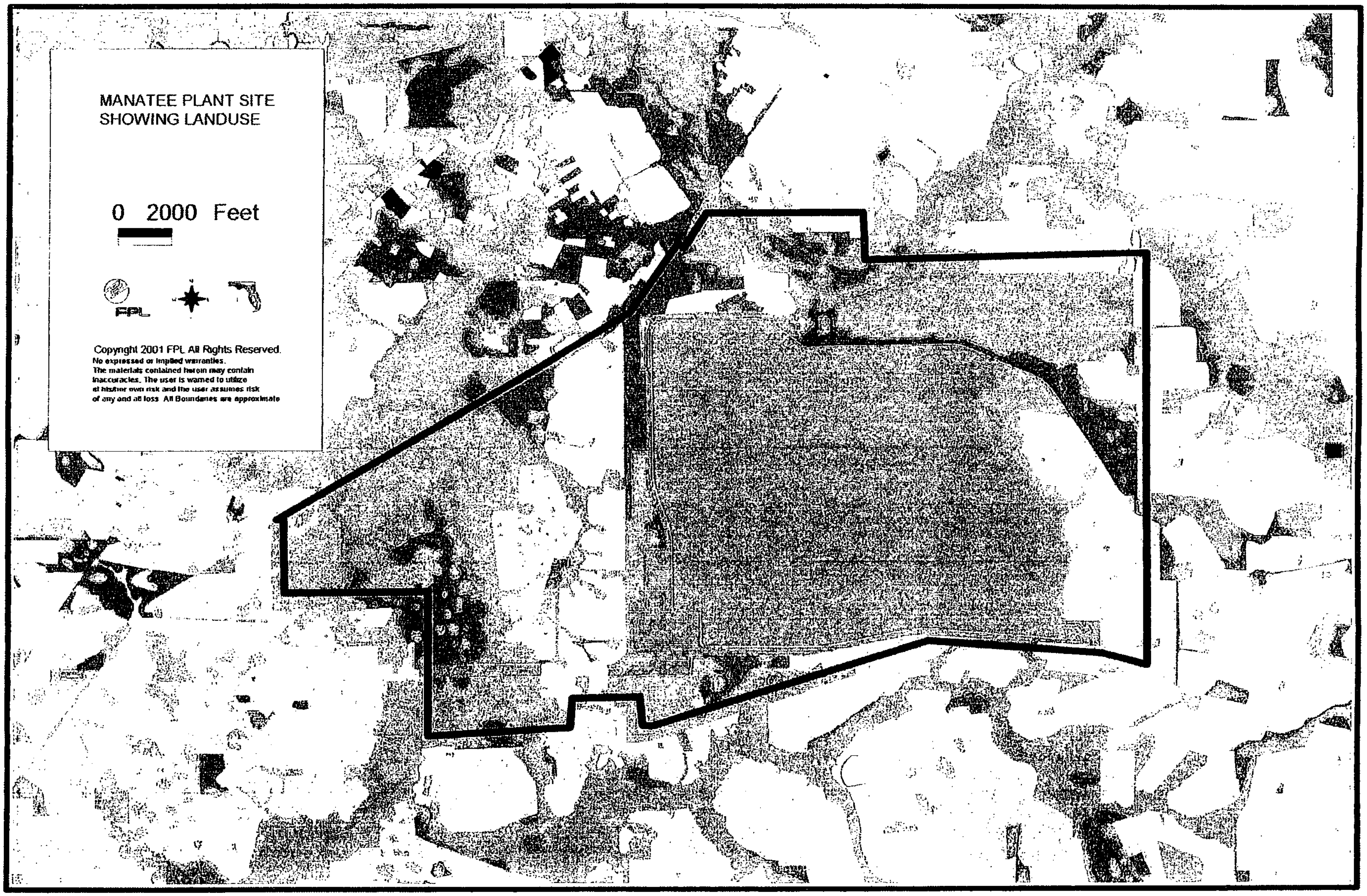
MANATEE PLANT SITE
SHOWING LANDUSE
0 2000 Feet
FPL
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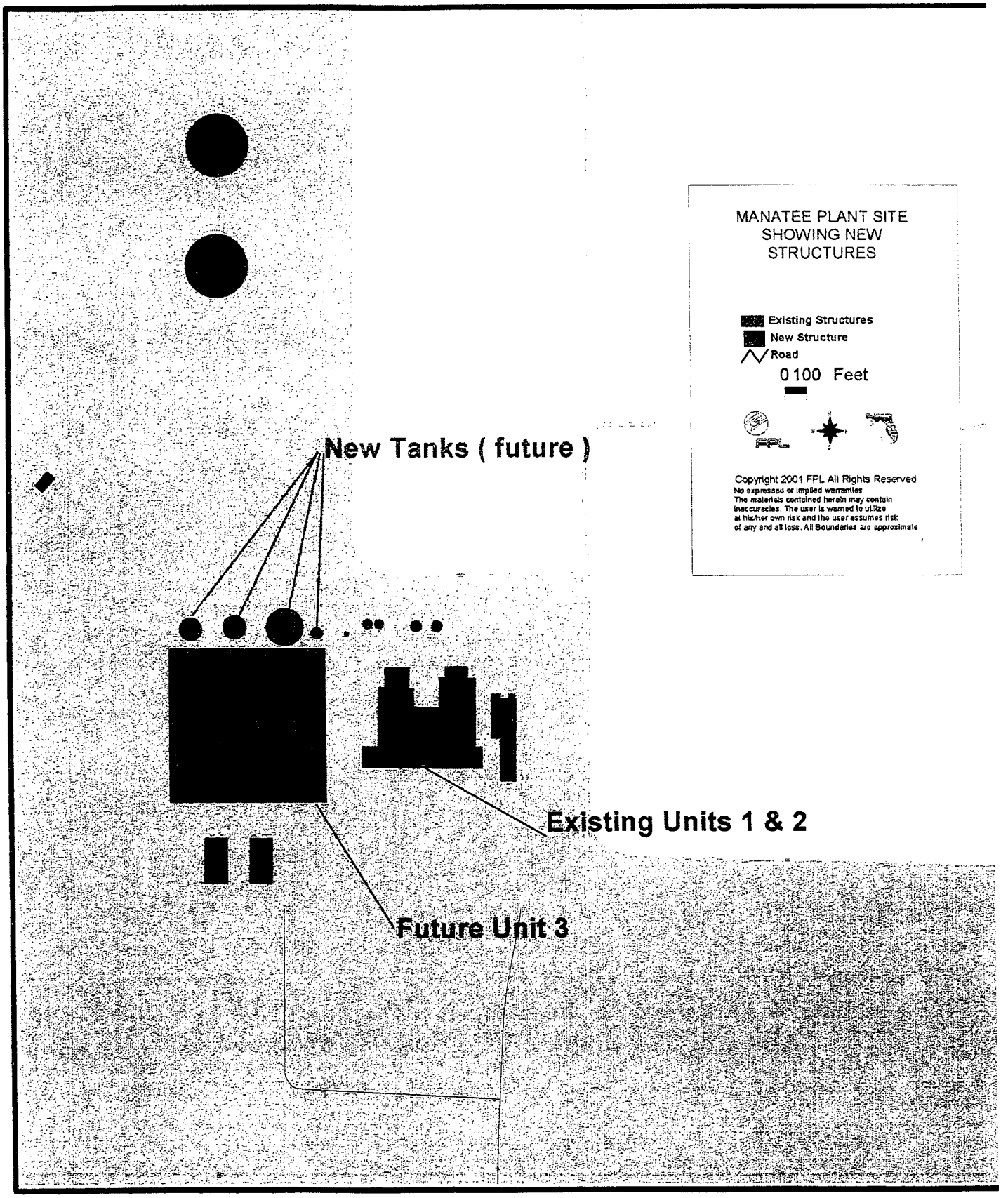
LEGEND FOR LANDUSE MAPS

Plant Site Boundary

Level 3 Landuse Categories 1995

- Residential Low Density
- Residential Medium Density
- Residential High Density
- Commercial and Services
- Industrial
- Extractive
- Institutional
- Recreational
- Open Land
- Cropland and Pastureland
- Tree Crops
- Feeding Operations
- Nurseries and Vineyards
- Specialty Farms
- Other Open Lands <Rural>
- Herbaceous
- Shrub and Brushland
- Mixed Rangeland
- Upland Coniferous Forests
- Upland Hardwood Forests
- Tree Plantations
- Streams and Waterways
- Lakes
- Reservoirs
- Bays and Estuaries
- Major Springs
- Slough Waters
- Oceans Seas and Gulfs
- Wetland Hardwood Forests
- Wetland Coniferous Forests
- Wetland Forested Mixed
- Vegetated Non-Forested Wetlands
- Non-Vegetated
- Wetland Shrub
- Beaches OtherThan Swimming Beaches
- Sand Other Than Beaches
- Exposed Rock
- Disturbed Lands
- Riverine Sandbars
- Transportation
- Communications
- Utilities
- Vegetation-Sea Grass


MANATEE PLANT SITE
SHOWING NEW
STRUCTURES
Existing Structures
New Structure
Road
0 100 Feet
FPL
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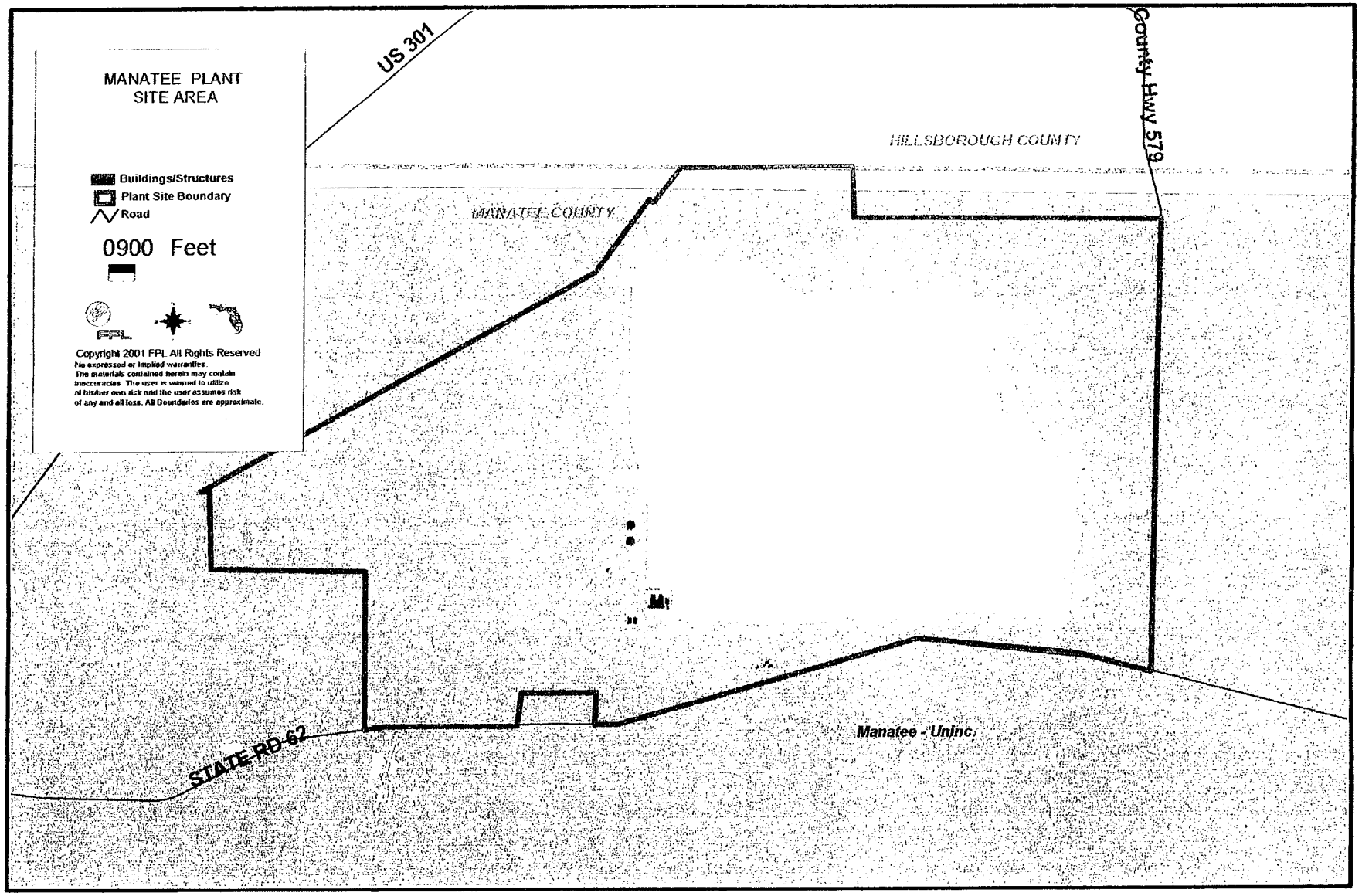
New Tanks (future)
Existing Units 1 & 2
Future Unit 3


MANATEE PLANT
SITE AREA
Buildings/Structures
Plant Site Boundary
Road
0900 Feet
FPL
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US 301
HILLSBOROUGH COUNTY
County Hwy 579
MANATEE COUNTY
STATE RD 62
Manatee - Unine.

Environmental and Land Use Information:

Supplemental Information

Preferred Site: Martin

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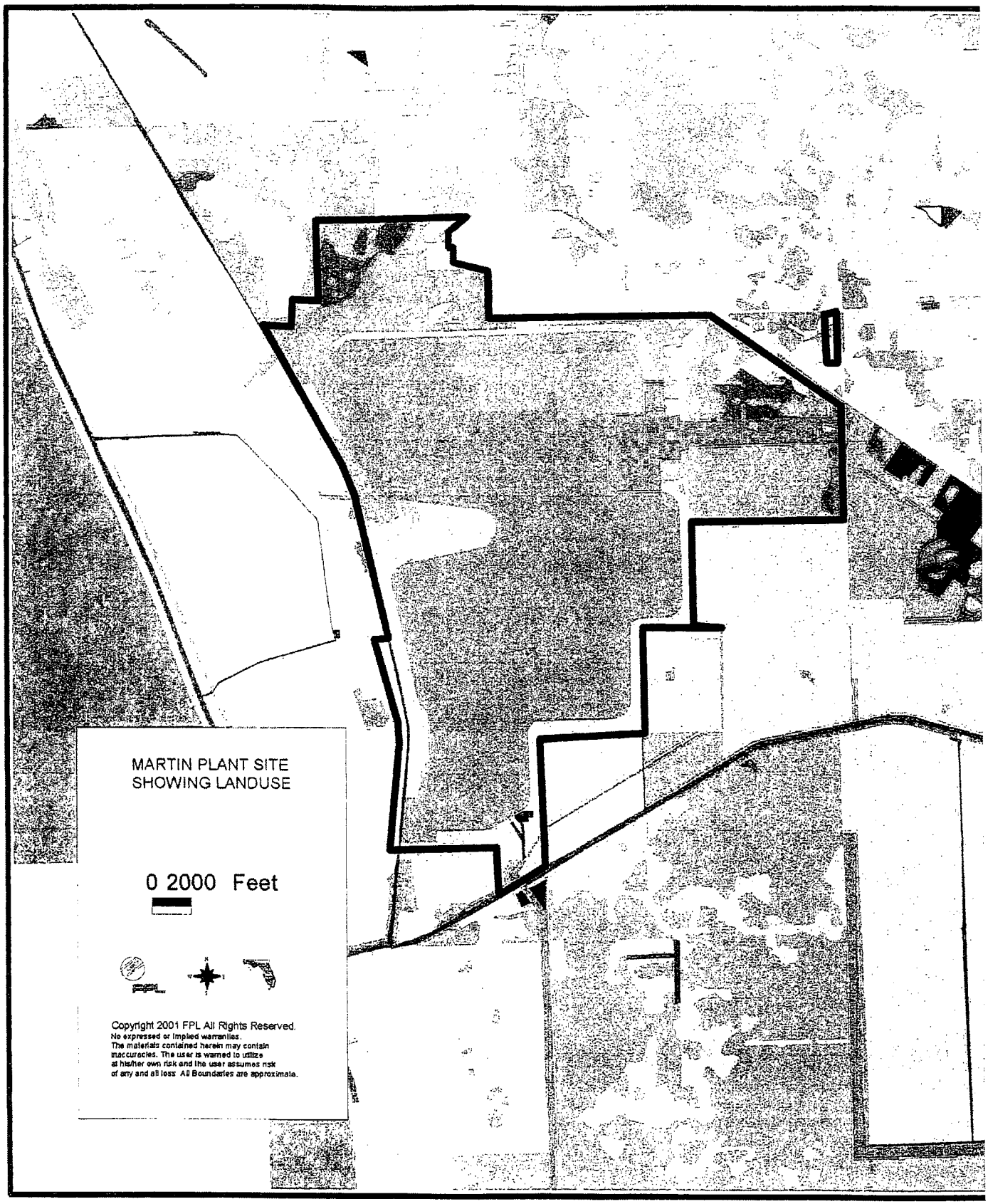
MARTIN PLANT SITE
SHOWING LANDUSE
0 2000 Feet
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LEGEND FOR LANDUSE MAPS

Plant Site Boundary

Level 3 Landuse Categories 1995

- Residential Low Density
- Residential Medium Density
- Residential High Density
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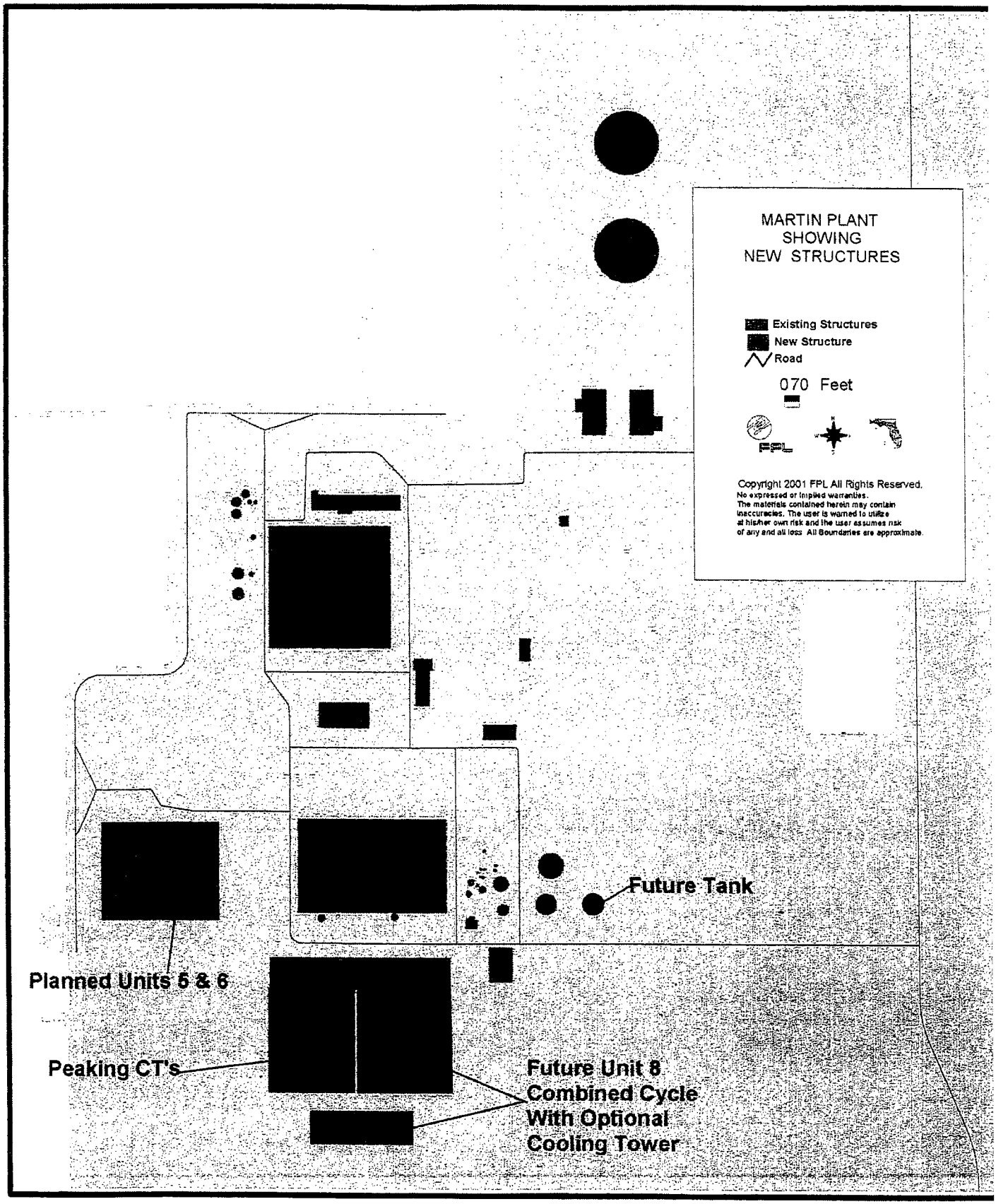
- Cropland and Pastureland
- Tree Crops
- Feeding Operations
- Nurseries and Vineyards
- Specialty Farms
- Other Open Lands <Rural>
- Herbaceous
- Shrub and Brushland
- Mixed Rangeland
- Upland Coniferous Forests
- Upland Hardwood Forests
- Tree Plantations
- Streams and Waterways
- Lakes
- Reservoirs
- Bays and Estuaries
- Major Springs
- Slough Waters
- Oceans Seas and Gulfs
- Wetland Hardwood Forests
- Wetland Coniferous Forests
- Wetland Forested Mixed
- Vegetated Non-Forested Wetlands
- Non-Vegetated
- Wetland Shrub
- Beaches OtherThan Swimming Beaches
- Sand Other Than Beaches
- Exposed Rock
- Disturbed Lands
- Riverine Sandbars
- Transportation
- Communications
- Utilities
- Vegetation-Sea Grass


MARTIN PLANT
SHOWING
NEW STRUCTURES
Existing Structures
New Structure
Road
070 Feet
FPL
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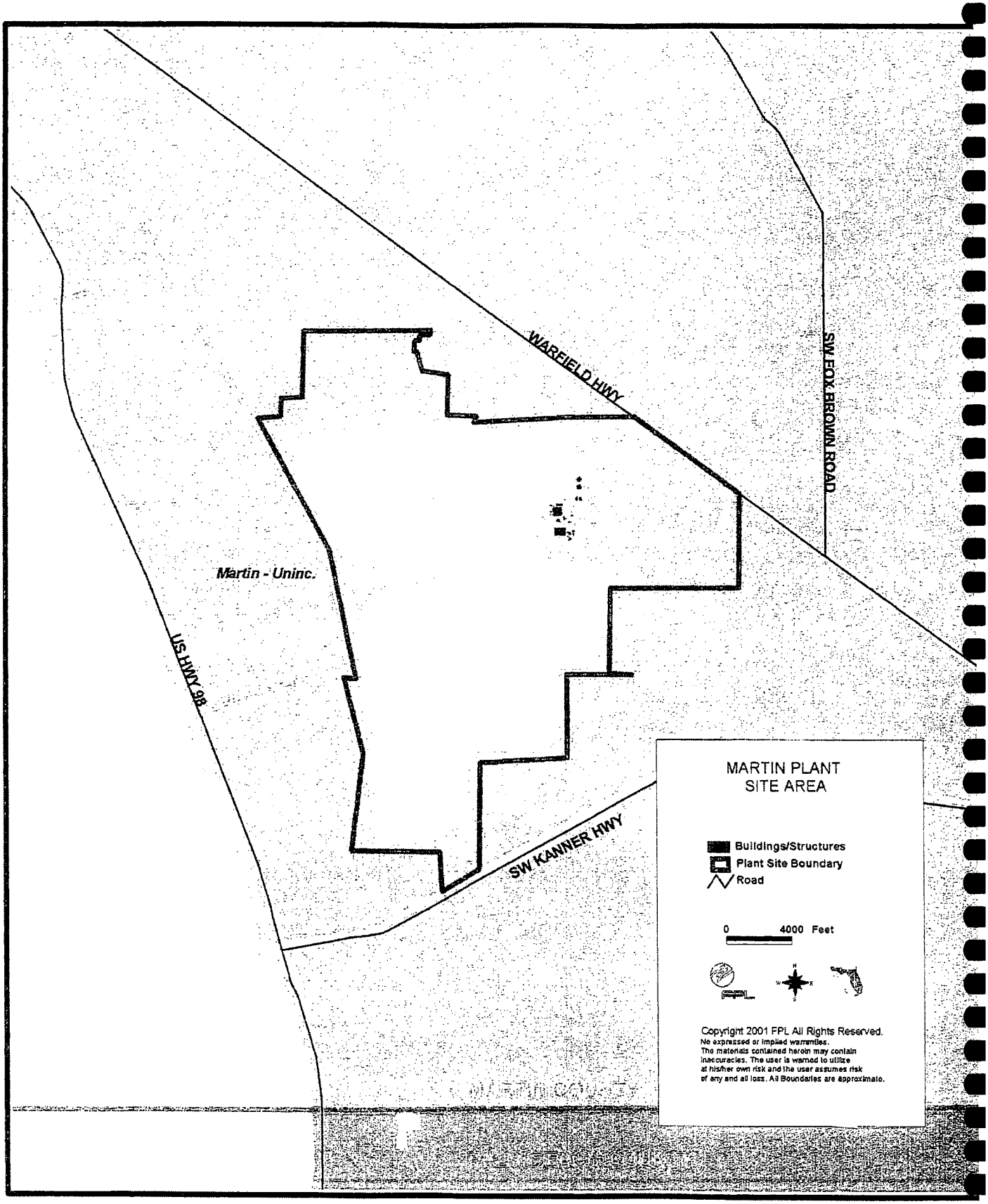
Future Tank
Planned Units 5 & 6
Peaking CT's
Future Unit 8
Combined Cycle
With Optional
Cooling Tower


WARFIELD HWY
SW FOX BROWN ROAD
Martin - Uninc.
US HWY 98
SW KANNER HWY
MARTIN PLANT
SITE AREA
Buildings/Structures
Plant Site Boundary
Road
0
4000 Feet
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Environmental and Land Use Information:

Supplemental Information

Potential Site: Cape Canaveral

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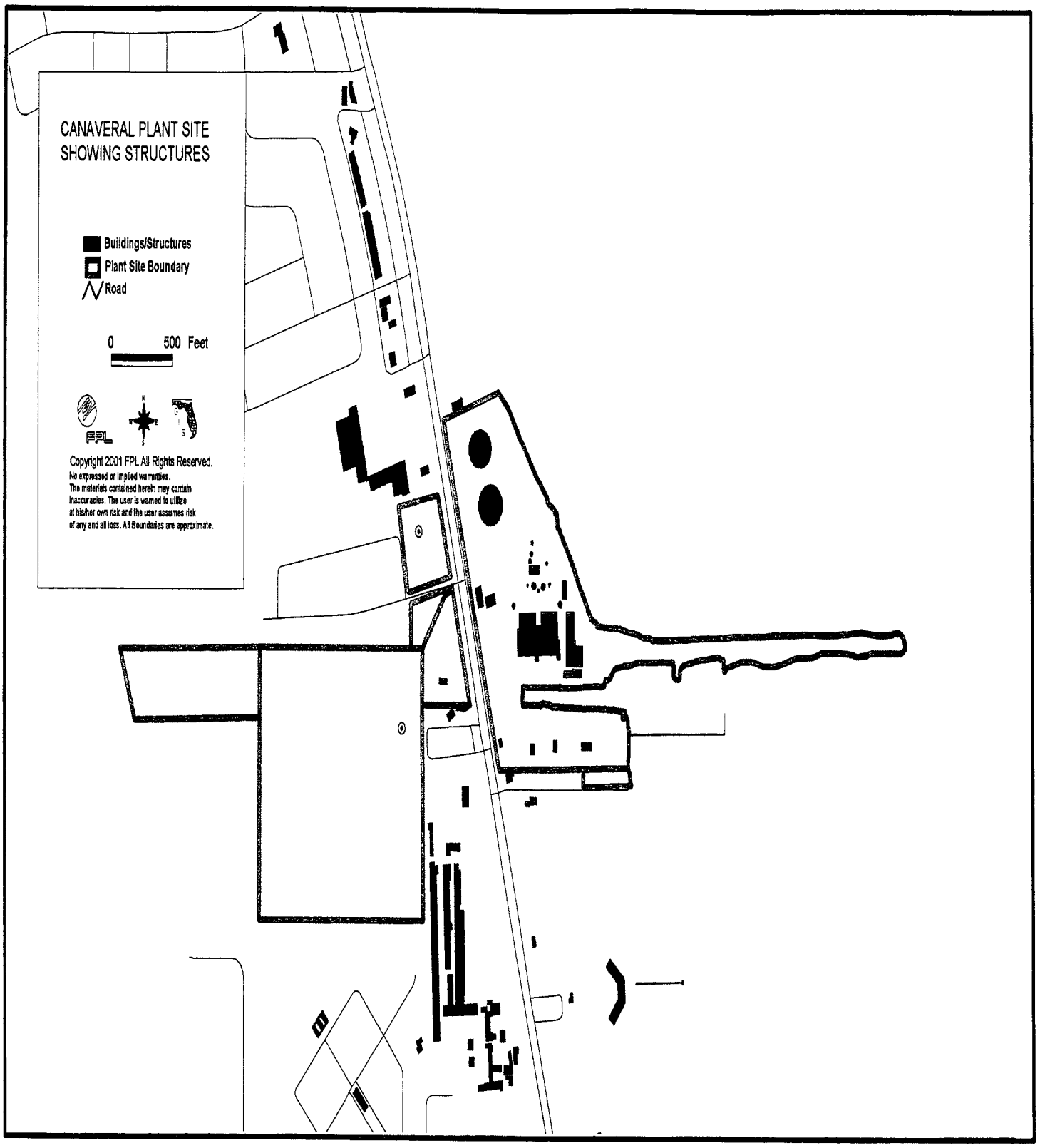
CANAVERAL PLANT SITE
SHOWING STRUCTURES
Buildings/Structures
Plant Site Boundary
Road
0
500 Feet
FPL
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Environmental and Land Use Information:

Supplemental Information

Potential Site: Midway

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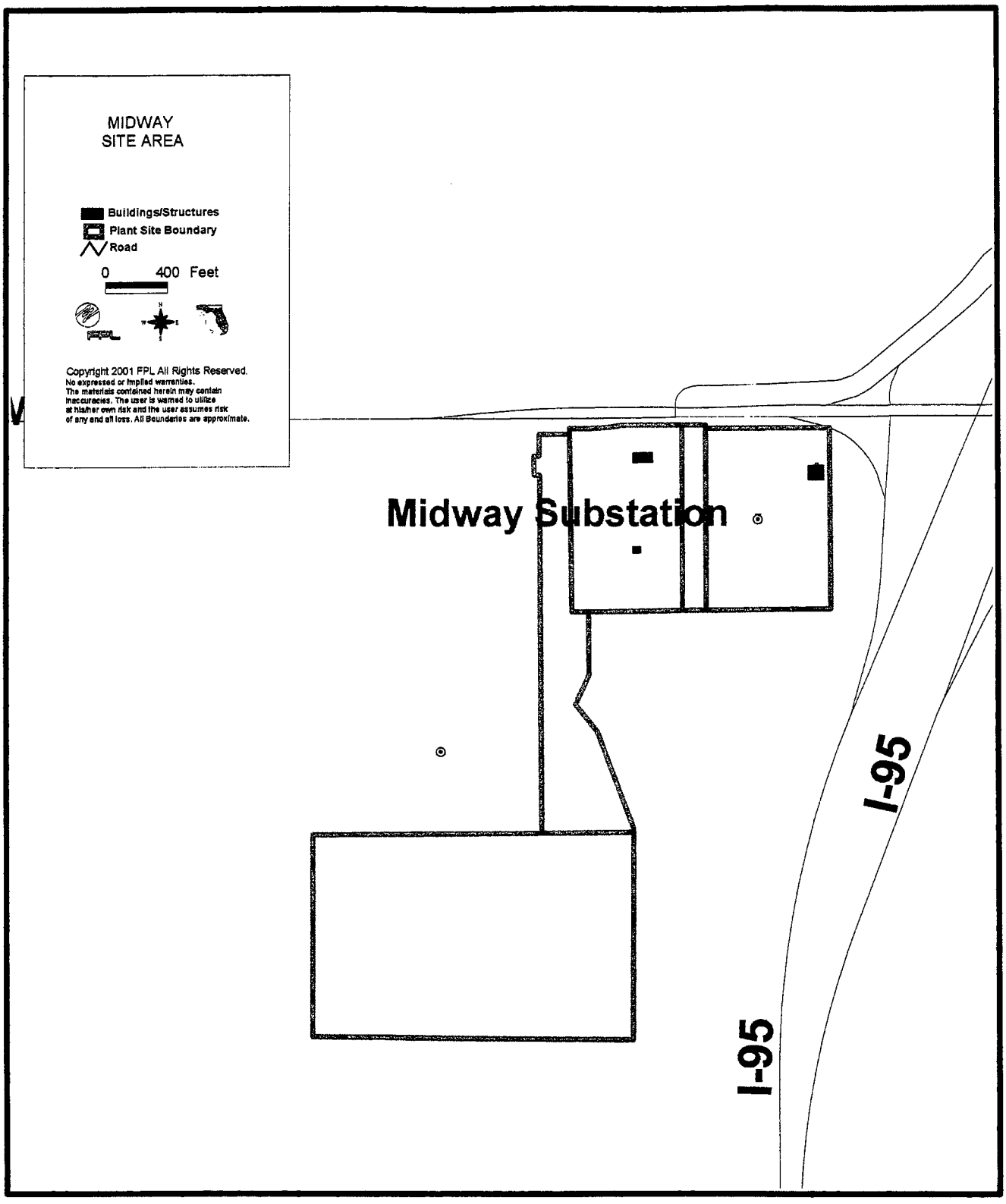
MIDWAY
SITE AREA
Buildings/Structures
Plant Site Boundary
Road
0 400 Feet
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Midway Substation
I-95
I-95

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Environmental and Land Use Information:

Supplemental Information

Potential Site: Port Everglades

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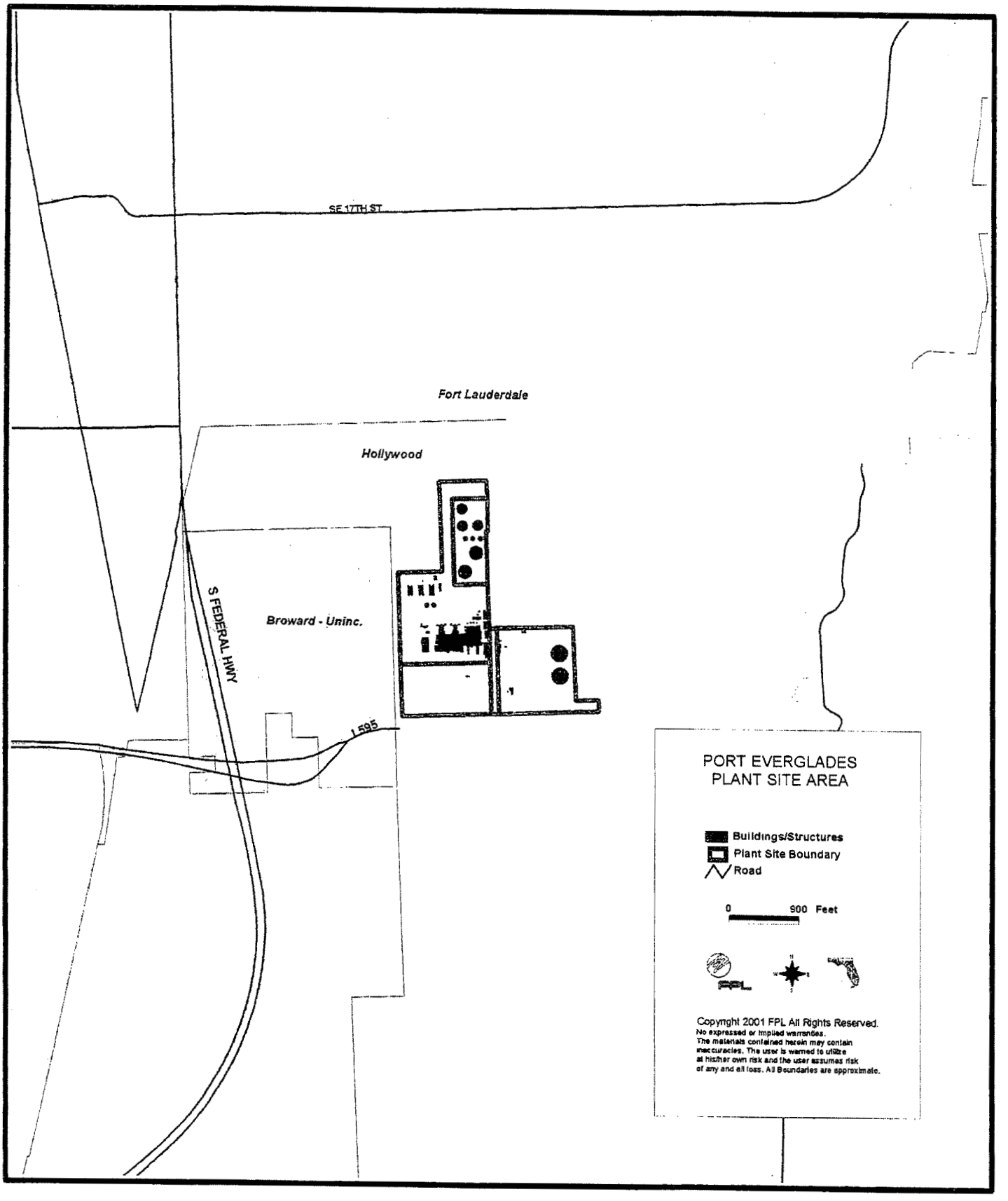
SE 17TH ST
Fort Lauderdale
Hollywood
Broward - Uninc.
S FEDERAL HWY
I 595
PORT EVERGLADES
PLANT SITE AREA
Buildings/Structures
Plant Site Boundary
Road
0
900 Feet
FPL
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Environmental and Land Use Information:

Supplemental Information

Potential Site: Riviera Plant

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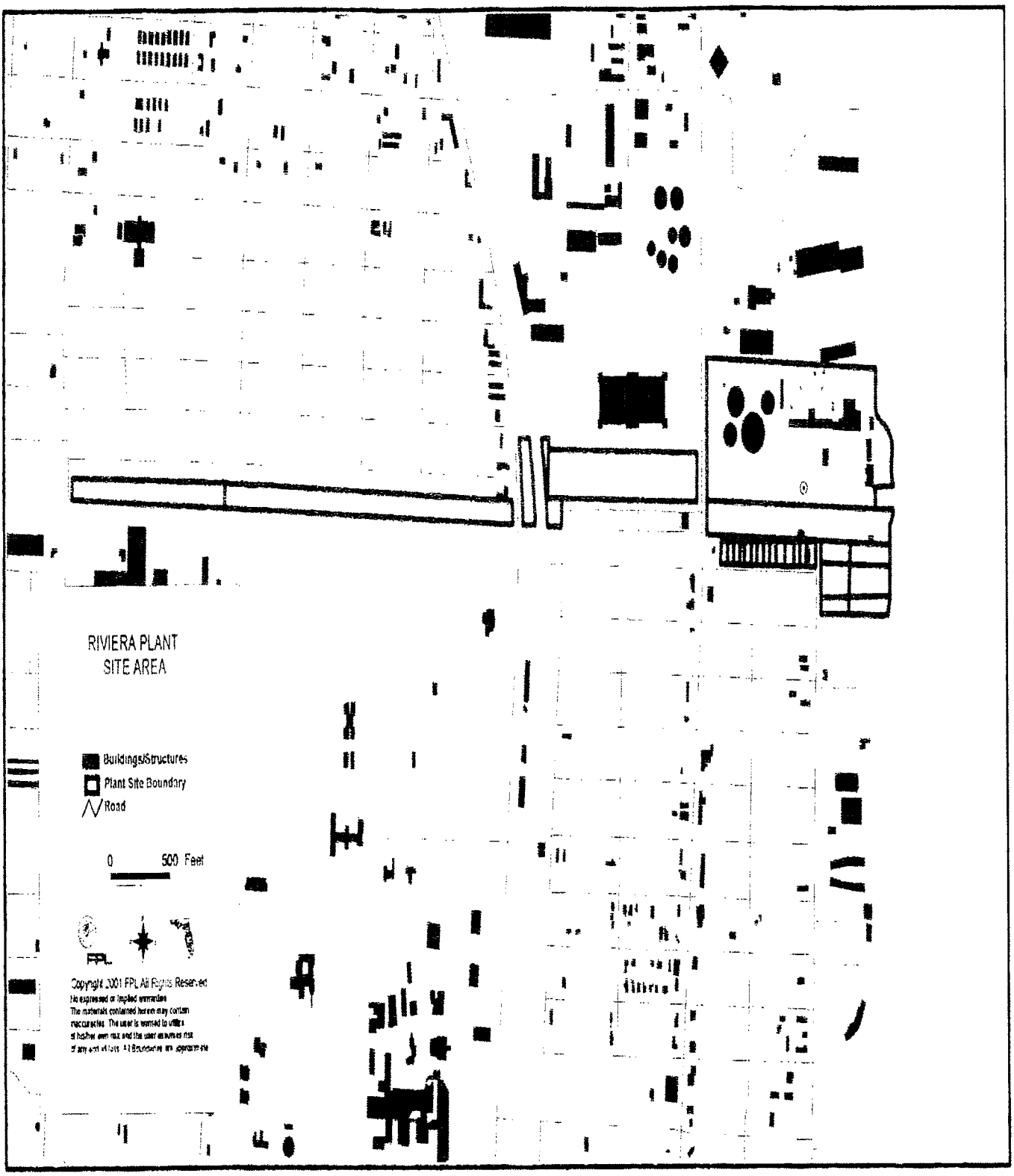
RIVIERA PLANT
SITE AREA
Buildings/Structures
Plant Site Boundary
Road
0
500 Feet
FPL
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Environmental and Land Use Information:

Supplemental Information

Potential Site: Turkey Point

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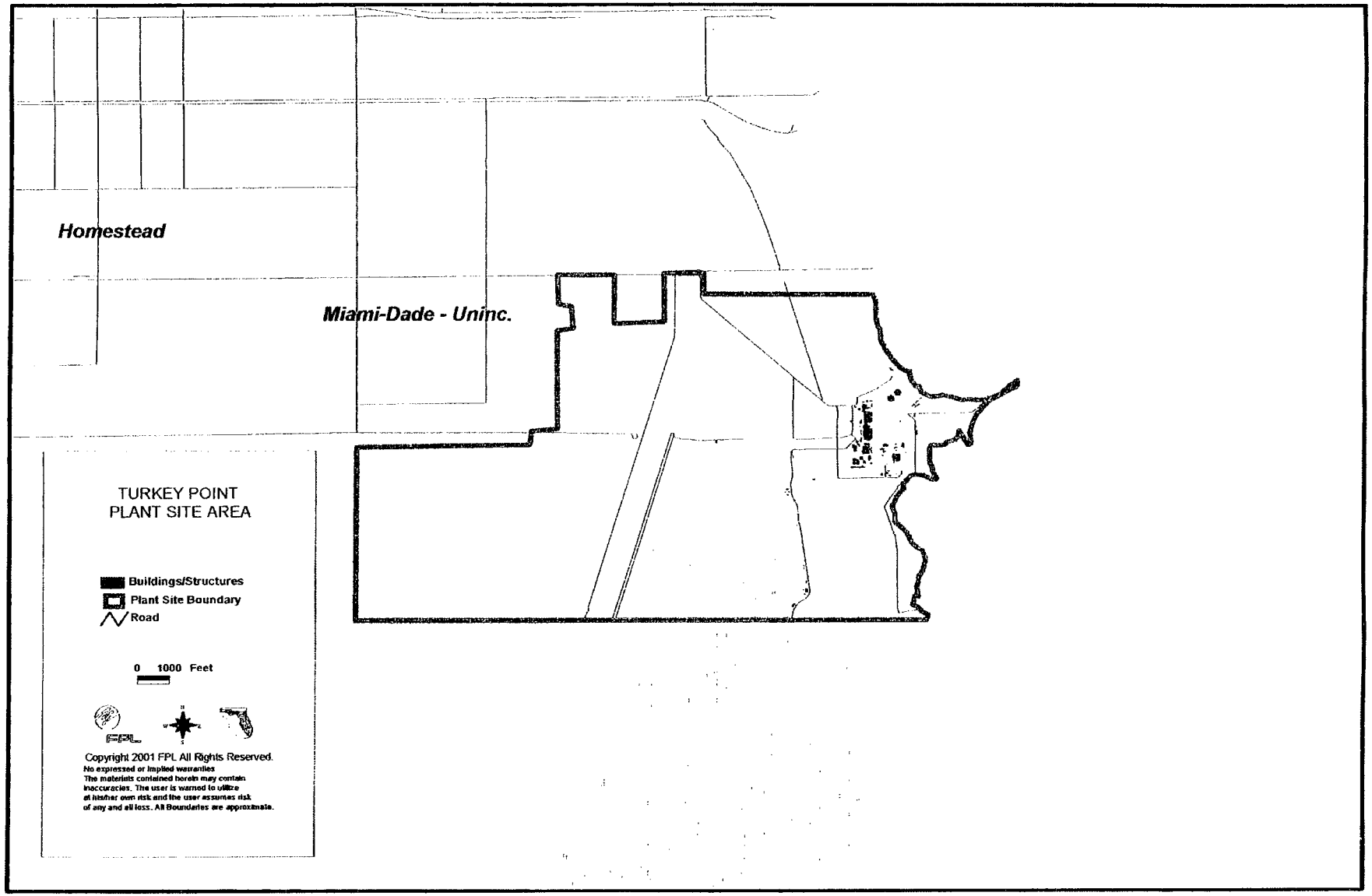
Homestead
Miami-Dade - Uninc.
TURKEY POINT
PLANT SITE AREA
Buildings/Structures
Plant Site Boundary
Road
0 1000 Feet
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of any and all loss. All Boundaries are approximate.

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CHAPTER V

Other Planning Assumptions & Information

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Introduction

The Florida Public Service Commission (FPSC), in Docket No. 960111-EU, specified certain information that was to be included in an electric utility's Ten-Year Power Plant Site Plan filing. Among this specified information was a group of 12 items listed under a heading entitled "Other Planning Assumptions and Information". These 12 items basically concern specific aspects of a utility's resource planning work. The FPSC requested a discussion or a description of each of these items.

These 12 items are addressed individually below as separate "Discussion Items".

Discussion Item # 1: Describe how any transmission constraints were modeled and explain the impacts on the plan. Discuss any plans for alleviating any transmission constraints.

FPL's resource planning work considers two types of transmission constraints. External constraints deal with FPL's ties to its neighboring systems. Internal constraints deal with the flow of electricity within the FPL system.

The external constraints are important since they affect the development of assumptions for the amount of external assistance which is available and the amount and price of economy energy purchases. Therefore, these external constraints are incorporated both in the reliability analysis and economic analysis aspects of resource planning. The amount of external assistance which is assumed to be available is based on the projected transfer capability to FPL from outside its system as well as historical levels of available assistance. In its reliability analyses, FPL models this amount of external assistance as an additional generator within FPL's system which provides capacity in all but the peak load months. The assumed amount and price of economy energy are based on historical values and projections from production costing models.

Internal transmission constraints or limitations are addressed by identifying potential geographic locations for potential new units that may not adversely impact, or that may even alleviate, such constraints and limitations and in developing the costs for siting new units at different locations. Both site-and system-related transmission costs are developed for each different unit/unit location option or groups of options.

FPL's annual transmission planning work determines transmission additions needed to address constraints and to maintain/enhance system reliability. FPL's transmission plans are presented in Section III.E.

Discussion Item # 2: Discuss the extent to which the overall economics of the plan were analyzed. Discuss how the plan is determined to be cost-effective. Discuss any changes in the generation expansion plan as a result of sensitivity tests to the base case load forecast.

As discussed in Chapter III of this document, FPL typically performs economic analyses of competing resource plans using the EGEAS (Electric Generation Expansion Analysis System) computer model from the Electric Power Research Institute (EPRI) and Stone and Webster Management Consultants, Inc. The resource plan reflected in this document emerged as the resource plan with the least impact on FPL's levelized system average electric rates (i.e., a Rate Impact Measure or RIM approach) and on the present value of revenue requirements for the FPL system.[3]

No sensitivity case analyses based on different load forecasts were carried out during FPL 's most recent planning work. This is due to the fact that the most economical options are combined cycle (CC) units. If higher – than – projected loads begin to appear, the combustion turbine components of any of the CC options could be placed in service early in simple cycle mode. FPL believed that this fact qualitatively enabled it to be able to address higher – than – projected loads.

[3] FPL's basic approach in its resource planning work is to base decisions on a lowest electric rate basis. However, when DSM levels are considered a "given" in the analysis, the lowest rate basis and the lowest system revenue requirements basis are identical. In such cases (as in FPL's current resource planning work), FPL evaluates options on the simpler – to – calculate (but equivalent) lowest system revenue requirements basis.

Discussion Item # 3: Explain and discuss the assumptions used to derive the base case fuel forecast. Explain the extent to which the utility tested the sensitivity of the base case plan to high and low fuel price scenarios. If high and low fuel price sensitivities were performed, explain the changes made to the base case fuel price forecast to generate the sensitivities. If high and low fuel price scenarios were performed as part of the planning process, discuss the resulting changes, if any, in the generation expansion plan under the high and low fuel price scenario. If high and low fuel price sensitivities were not evaluated, describe how the base case plan is tested for sensitivity to varying fuel prices.

The basic assumptions FPL used in deriving its base case or "Most Likely" fuel price forecast are discussed in Chapter III of this document.

In its most recent planning work, FPL did not test the sensitivity of its resource plan to a "Low Price" fuel forecast in conjunction with a "High Load" forecast. All of the options considered in the IRP analysis were gas-fired units, so any change in the fuel costs projections would have affected these options in essentially the same way. Consequently, FPL did not believe that a fuel price sensitivity case was needed.

Discussion Item # 4: Describe how the sensitivity of the plan was tested with respect to holding the differential between oil/gas and coal constant over the planning horizon.

For the same reason given in response to Discussion Item #3, FPL did not conduct a "constant fuel differential" sensitivity analysis in its most recent planning work.

Discussion Item # 5: Describe how generating unit performance was modeled in the planning process.

The performance of existing generating units on FPL's system was modeled using current projections for scheduled outages, unplanned outages, and capacity output ratings and heat rate information. Schedule 1 and Schedule 8 present the current and projected capacity output ratings of FPL's existing units. The values used for outages and heat rates are generally consistent with the values FPL has used in planning studies in recent years.

In regard to new unit performance, FPL utilized current projections for the capital costs, fixed and variable operating & maintenance costs, capital replacement costs, construction schedules, heat rates, and capacity ratings for all construction options which were considered in the resource planning work. A summary of this information for the new capacity options FPL projects to add over the planing horizon is presented on the Schedule 9 forms.

Discussion Item # 6: Describe and discuss the financial assumptions used in the planning process. Discuss how the sensitivity of the plan was tested with respect to varying financial assumptions.

The key financial assumptions used in FPL's most recent resource planning work were 45% debt and 55% equity FPL capital structure, projected debt cost of 7.4%, and an equity return of 11.7%. These assumptions resulted in a weighted average cost of capital of 9.8% and an after-tax discount rate of 8.5%. In its recent planning work, FPL did not test the sensitivity of its resource plan to varying financial assumptions. The reason for this is that FPL's planning work focused on FPL construction options only that were generally very similar in design and varied only by site. Consequently, varying financial assumptions would have resulted in little/no change in the analysis results.

Discussion Item # 7: Describe in detail the electric utility's Integrated Resource Planning process. Discuss whether the optimization was based on revenue requirements, rates, or total resource cost.

FPL's integrated resource planning (IRP) process is described in detail in Chapter III of this document.

The standard basis for comparing the economics of competing resource plans in FPL's basic IRP process is the impact of the plans on FPL's electricity rate levels with the intent of minimizing FPL's levelized system average rate (i.e., a Rate Impact Measure or RIM approach). However, in its most recent planning work FPL utilized a net present value of system revenue requirements as the basis for comparing options and plans. (As discussed in response to Discussion Item # 2, both the electricity rate basis and the system revenue requirement basis are identical when DSM levels are unchanged between competing plans. Such was the case in FPL's recent planning work.)

Discussion Item # 8: Define and discuss the electric utility's generation and transmission reliability criteria.

FPL uses two generation reliability criteria in its resource planning work. One of these is a minimum 15% Summer and Winter reserve margin for years up to mid – 2004 that changes to a minimum 20% Summer and Winter reserve margin for the mid – 2004 – on time period. The other reliability criterion is a maximum of 0.1 days per year loss-of-load-probability (LOLP). These reliability criteria are discussed in Chapter III of this document.

In regard to transmission reliability, FPL has adopted transmission planning criteria that are consistent with the planning criteria established by the Florida Reliability Coordinating Council (FRCC). The FRCC has adopted transmission planning criteria that are consistent with the planning criteria established by the North American Electric Reliability Council (NERC) in its *Planning Standards*. FPL has applied these planning criteria in a manner consistent with prudent utility practice. The *NERC Planning Standards* are available on the internet (http://www.nerc.com/~filez/pss-psg.html).

In addition, FPL has developed a Facility Connection Requirements (FCR) document as well as a Facility Rating Methodology document that are also available on the internet (http://www.floasis.siemens-asp.com/oasis/fpl/info.htm).

Thermal ratings for specific transmission lines or transformers are found in the load flow cases that are available on the internet (http://www.floasis.siemens- asp.com/oasis/fpl/info.htm).

The normal voltage criteria for FPL stations is given below:

Voltage Level (kV)	Vmin (p.u.)	Vmax (p.u.)
69, 115, 138, 500	0.95	1.05
230	0.95	1.06

There may have been isolated cases for which FPL may have determined it prudent to deviate from the general criteria stated above. The overall potential impact on customers, the probability of an outage actually occurring, as well as other factors may have influenced the decision in such cases.

Discussion Item # 9: Discuss how the electric utility verifies the durability of energy savings for its DSM programs.

The impact of FPL's DSM Programs on demand and energy consumption are revised periodically. Engineering models, calibrated with field-metered data, are updated when significant efficiency changes occur in the marketplace. Participation trends are tracked for all of the FPL programs in order to adjust impacts each year for changes in the mix of efficiency measures being installed by program participants.

Survey data is collected from non-participants in order to establish the baseline efficiency. Participant data is compared against non-participant data to establish the demand and energy saving benefits of the utility program versus what would be installed in the absence of the program. Finally, FPL is careful to claim only program savings for the average life of the installed efficiency measure. For these DSM measures which involve the utilization of load management, FPL conducts periodic tests of the load control equipment to ensure that it is functioning correctly.

Discussion Item # 10: Discuss how strategic concerns are incorporated in the planning process.

Among the strategic or non-price factors FPL typically considers when choosing between resource options are the following: (1) fuel diversity; (2) technology risk; and (3) environmental risk.

Fuel diversity relates to two concepts, the diversity of sources of fuel (e.g., coal vs. oil vs. natural gas), and the diversity of supply for a single fuel source (for example alternative pipeline suppliers for natural gas). All other factors being equal, supply options that increase diversity in fuel source and/or supply would be favored over those that do not.

Technology risk is an assessment of the relative maturity of competing technologies, For example, a prototype technology which has not achieved general commercial acceptance has a higher risk than a technology in wide use and, therefore, is less desirable.

Environmental risk is an assessment of the relative environmental acceptability of competing technologies. Technologies which might be regarded as more acceptable from an environmental perspective (e.g., natural gas-fired options) might be considered more favorably.

All of these factors play a part in FPL's planning and decisions, including its decisions to construct capacity or to purchase power.

Discussion Item # 11: Describe the procurement process the electric utility intends to utilize to acquire the additional supply-side resources identified in the electric utility's ten-year site plan.

As has been previously discussed, the near – term elements of FPL's capacity additions include the repowering of one of its Sanford plants, the addition of new combustion turbines (CT's) at Fort Myers, and a number of firm capacity, short-term purchases. The incremental capacity from the repowering project comes from the addition of new CT's and heat recovery steam generators (HRSG's). FPL acquired the repowering-related CT's, plus the other new CT's for Fort Myers, and the HRSG's through a bid process which combined cost and performance considerations. The firm capacity short-term purchases were acquired through negotiations.

The 2005 capacity addition decision was arrived at after evaluating 134 bids received in response to two capacity Request for Proposals (RFP) issued by FPL in mid-2001 and mid-2002. The decision to construct new combined cycle units at FPL's existing Martin and Manatee sites was subsequently approved by the Florida Public Service Commission in late 2002.

The later (2007 – on) capacity additions are likely to be subject to a capacity solicitation process similar to the Request for Proposal (RFP) process that led to the selection of Martin Unit # 8 and Manatee Unit # 3. Identification of these self – build options in FPL's Site Plan is not an indication that FPL has prejudged any capacity solicitation it may conduct. It is merely a recognition of what currently appears to be FPL's best, most cost-effective self – build options at this time. FPL reserves the right to refine its planning analyses and to identify other self – build options. Such refined analyses have the potential to yield a variety of self – build options, some of which might not require an RFP. If an RFP is issued for supply – side resources, FPL reserve the right to choose the best alternative for its customers, even if that option is not an FPL self – build option.

Discussion Item # 12: Provide the transmission construction and upgrade plans for electric utility system lines that must be certified under the Transmission Line Siting Act (403.52 – 403.536, F. S.) during the planning horizon. Also, provide the rationale for any new or upgraded line.

FPL's latest Transmission/Substation Expansion Plan for years 2002-2012 published in December, 2002 includes a new transmission line that is planned which would need to be certified under the Transmission Line Siting Act (403.52 – 403.536, F.S.). The new line will connect FPL's Orange River Substation to the Collier Substation. The construction of this line is necessary to serve existing and future customers in the Collier and Lee areas in a reliable and effective manner.

Additionally, contained in FPL's latest Transmission/Substation Expansion Plan for years 2002-2012 published in December, 2002 is a section entitled "Transmission System Long-Range Projects: 2008-2012. These projects are at this time only potential long-range transmission projects and are subject to change. The siting of future generation additions could have an impact on the necessity of such transmission projects. These proposed potential projects are not yet budgeted projects, are in the preliminary stages of consideration, and are based upon current assumptions that will be monitored and adjusted in future planning assessments. No determination has been made with regard to these potential long-range projects as to whether they will need to be certified under the Transmission Line Siting Act (403.52 – 403.536, F.S.).

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