ORIGINAL

Florida Power & Light Company, P.O. Box 029100, Miami, FL 33102

FPL

April 1, 2004

VIA HAND DELIVERY

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

040000-PU

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COMMISSION CLERK

Re: 2004 – 2013 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 2004 - 2013 Ten-Year Power Plant Site Plan.

If you have any questions, please do not hesitate to contact me at (305) 552-4332 or John Hepokoski at (305) 552-4159.

Sincerely,

Anne M. Grealy

Anne M. Grealy
Director, Regulatory Affairs

AUS
CAF
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Ten Year Power Plant Site Plan
2004 - 2013

FPL

FPL

Ten Year Power Plant Site Plan

2004-2013

Submitted To:

Florida Public
Service Commission

Miami, Florida
April, 2004

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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 2003 and that were completed in the first quarter of 2004. The forecasted information presented in this plan addresses the 2004 – 2013 time frame.

Site Plans are long-term planning documents and should be viewed in this context. A Site Plan contains tentative information 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 needed as part of the Florida site certification process, or through other proceedings and filings.

This document is organized in the following manner:

Executive Summary

The Executive Summary provides a review of the major findings and conclusions presented in the Site Plan.

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

This chapter presents FPL's load forecasting methodology, and its forecast of seasonal peaks and annual energy usage.

Chapter III – Projection of Incremental Resource Additions

This chapter discusses FPL's integrated resource planning (IRP) process and outlines FPL's projected resource additions, particularly new capacity resources, as determined in FPL's IRP work in 2003 and early 2004.

Chapter IV – Environmental and Land Use Information

This chapter presents 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 specific information included in a Site Plan filing.

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

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Executive Summary

Florida Power & Light Company's (FPL) 2004 Ten - Year Power Plant Site Plan (Site Plan) summarizes FPL's analysis of and plan to address a need for increased electric generation capability. This plan is part of FPL's efforts to meet projected incremental resource needs for the 2004 – 2013 time period.

FPL's integrated resource planning process has identified continued load growth in the FPL service territory in the next ten years. As a result, FPL's total generation capability is expected to significantly increase in response to this need during the 2004 – 2013 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 includes FPL's planned changes to existing generation units (due to unit overhauls, etc.), currently scheduled changes in the delivered amounts of purchased power, and the planned additions of new generating units. Although not specifically shown in this table, FPL's approved DSM Goals at the time this Site Plan was filed 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 (FPSC) docket No. 981890-EU. This docket ended with a stipulated agreement that resulted in FPL, along with Tampa Electric Company and Florida Power Corporation, changing its minimum reserve margin planning criterion from 15% to one of 20% beginning with the Summer of 2004. The following summarizes the capacity resources that are a part of FPL's 2004 Site Plan.

Based on previous actions, FPL has obtained the capacity needed over the next several years through a number of short-term, firm capacity purchases from utilities and other entities. Additional short-term, firm purchases for 2004 have been made and the balance will be completed by June 1.

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 785 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 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 FPSC on November 19, 2002, and their applications for certification under the Florida Electric Power Plan Siting Act (PPSA) were granted on April 11, 2003.

In 2007, FPL forecasts a capacity need of 1,066 MW of additional capacity. FPL developed a plan for a 1,144 MW CC unit located at FPL's existing Turkey Point plant site as its next planned generating unit. Following a review of proposals received in response to FPL's 2003 RFP (issued in August, 2003), the FPL next planned generating unit (NPGU) was chosen as the best alternative. FPL filed for FPSC approval of a Determination of Need for this unit on March 8, 2004, and an FPSC decision on this matter is expected in mid-Summer of 2004. FPL filed for PPSA certification for this unit on November 14, 2003 and expects a decision on this application in the 1st Quarter of 2005.

FPL forecasts a continued need for new capacity in the years 2008 through 2013. In response to this continued need, and to facilitate system planning efforts, FPL's current plans include the addition of two combustion turbines (CT's) in 2008 at its Midway site, a CC unit in 2009 at its Corbett site, and two additional CC units: one each year in 2011 and 2012. Sites for these two additional CC units have not yet been selected. These planned increases in electric generation capability will allow FPL to maintain system reliability and integrity at a reasonable cost.

FPL's planning efforts in the past few years have also identified two issues that continue to receive attention in FPL's ongoing resource planning work. These two issues are: 1) the growing imbalance in southeast Florida between load and generating capacity located within this region; and 2) maintaining/enhancing fuel diversity in the FPL system. The selection of the Turkey Point CC unit to meet FPL's 2007 need will help mitigate the southeast Florida imbalance. FPL's approach to these two issues is discussed throughout this document and will continue to influence FPL's on-going resource planning work.

Projected Capacity Changes and Reserve Margins for FPL [7]					
		Net Capacity Changes (MW)		FPL Reserve Margin (%)	
		Winter [2]	Summer [3]	Winter	Summer
2004	Purchases [4]	(127)	44	27%	21%
	New Short-Term Purchase [5]	—	360		
	Changes to existing Units	21	74		
2005	Purchases [4]	(16)	(60)	22%	26%
	Manatee Unit #3 Combined Cycle [6]	—	1,107		
	New Short-Term Purchase [5]	—	(360)		
	Conversion of MR #8 CT's to CC [6]	(363)	785		
2006	Manatee Unit #3 Combined Cycle [6]	1,201	—	31%	22%
	Conversion of MR #8 CT's to CC [6]	1,198	—		
	Purchases [4]	(136)	(136)		
	Changes to existing Units	(2)	(1)		
2007	Purchases [4]	—	(945)	28%	20%
	Turkey Point Combined Cycle #5 [6]	—	1,144		
	Changes to existing Units	(1)	(2)		
2008	Purchases [4]	(1,018)	—	26%	20%
	Turkey Point Combined Cycle #5 [6]	1,181	—		
	Combustion Turbines at Midway	—	324		
	Changes to existing Units	(1)	—		
2009	Combustion Turbines at Midway	362	—	26%	23%
	Purchases [4]	—	(51)		
	Combined Cycle at Corbett [6]	—	1,144		
2010	Combined Cycle at Corbett [6]	1,181	—	28%	20%
	Purchases [4]	(51)	(975)		
	New Purchase(s)	—	931		
2011	Unsited Combined Cycle # 1 [6]	—	1,144	25%	22%
	Purchases [4]	(1,020)	(45)		
	New Purchase(s)	931	—		
2012	Unsited Combined Cycle # 1 [6]	1,181	—		
	Unsited Combined Cycle # 2 [6]	—	1,144	27%	25%
2013	Unsited Combined Cycle # 2 [6]	1,181	—	30%	22%
	TOTALS =	5,702	5,627		

1) Additional information about these resulting reserve r ırgins and capacity changes are four ı ın 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) These are firm capacity purchases. See Section I.D and III.A. for more details.

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

6) 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

CHAPTER I

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 8,070,000 people. FPL served an average of 4,117,221 customer accounts in thirty-five counties during 2003. 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

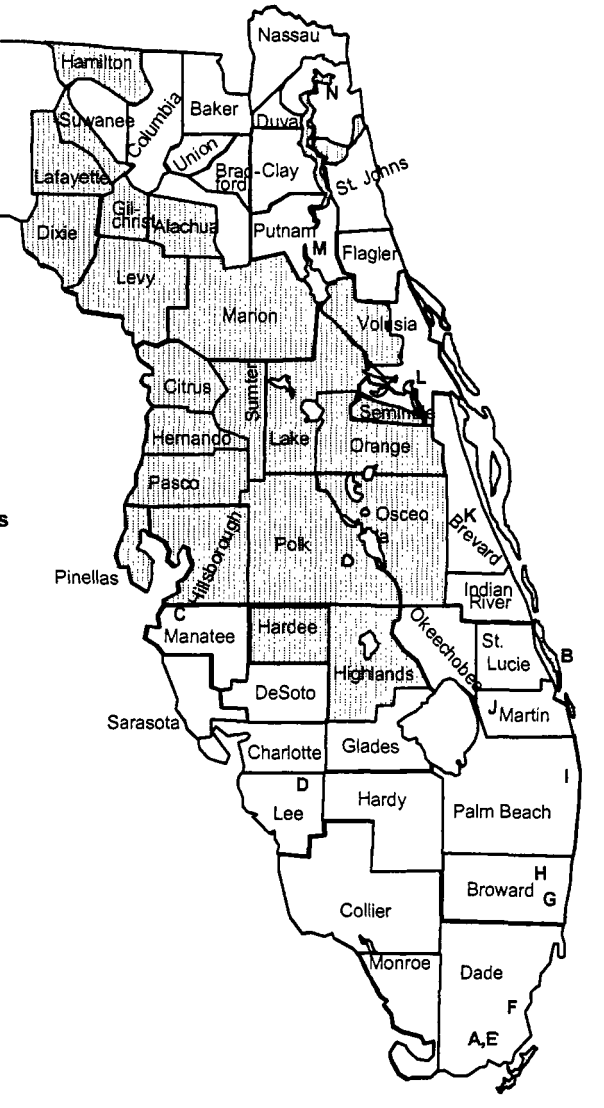
The existing FPL generating resources are located at fourteen generating sites distributed geographically around its service territory and also include partial ownership of one unit located in Georgia and two units located in Jacksonville. The current generating facilities consist of four nuclear steam units, three coal units, nine combined cycle units, seventeen fossil steam units, fifty-one 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 2,744 circuit miles of 230 KV lines. The underlying network is composed of 1,634 circuit miles of 138 KV lines, 719 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 526 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, 2003)

Non-FPL Territory



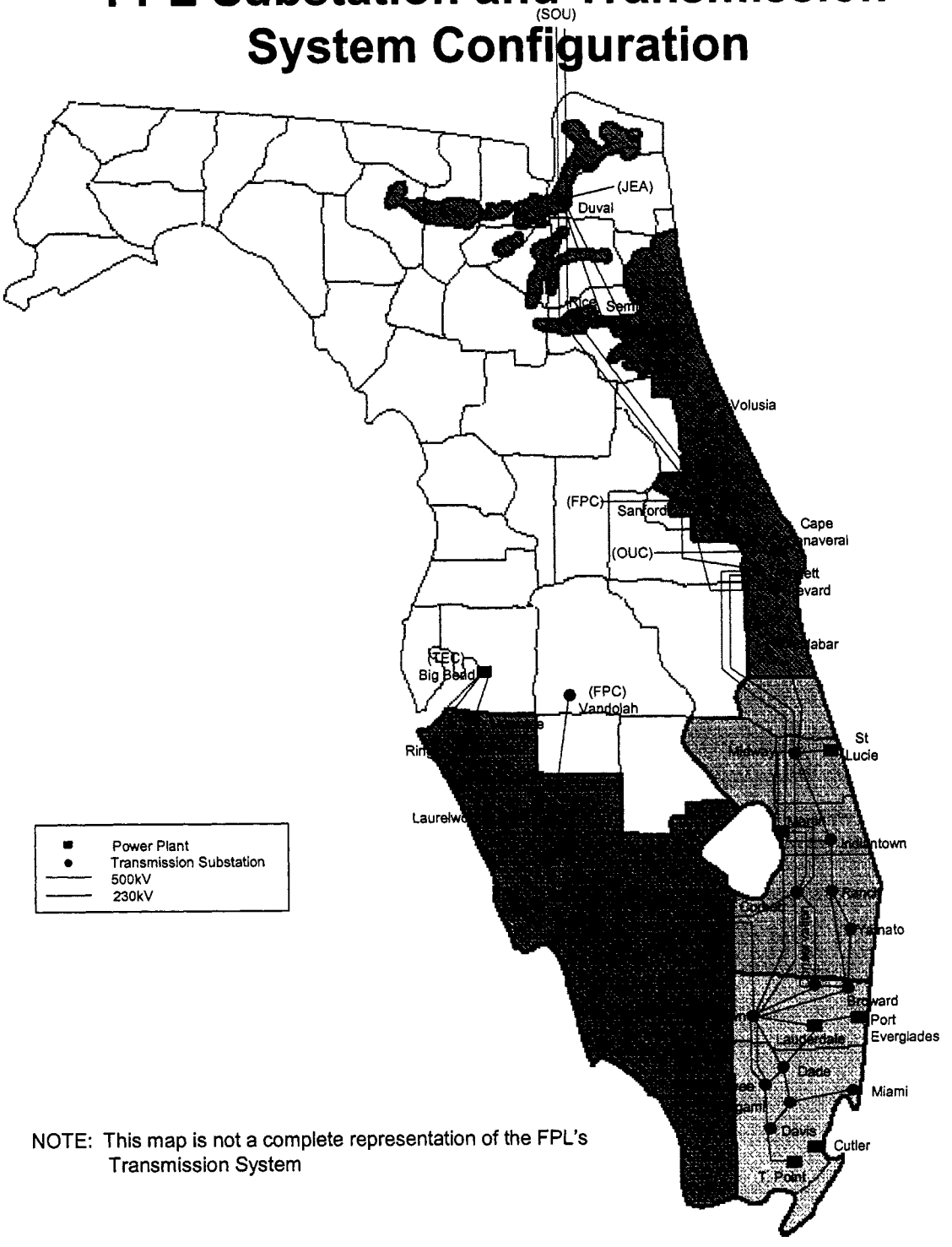
	Unit Name	No. of Units	Fuel Type	Summer Megawatts
A	Turkey Point	2	Nuclear	1,386
B.	St. Lucie *	2	Nuclear	1,553
C.	Manatee	2	Oil/Gas	1,628
D.	Ft. Myers	1	Oil/Gas	1,423
E.	Turkey Point	2	Oil/Gas	807
F.	Cutler	2	Gas	206
G.	Lauderdale	2	Gas/ Oil	859
H.	Port Everglades	4	Oil/Gas	1,233
I.	Riviera	2	Oil/Gas	565
J.	Martin	4	Gas/Oil	2,592
K.	Cape Canaveral	2	Oil/Gas	814
L.	Sanford	3	Gas/ Oil	2,018
M.	Putnam	2	Gas/Oil	498
N.	St. Johns River *	2	Coal/Pet Coke	254
	Scherer **	1	Coal	658
	Peaking Units			2,562
	FPL Generation			19,056

**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

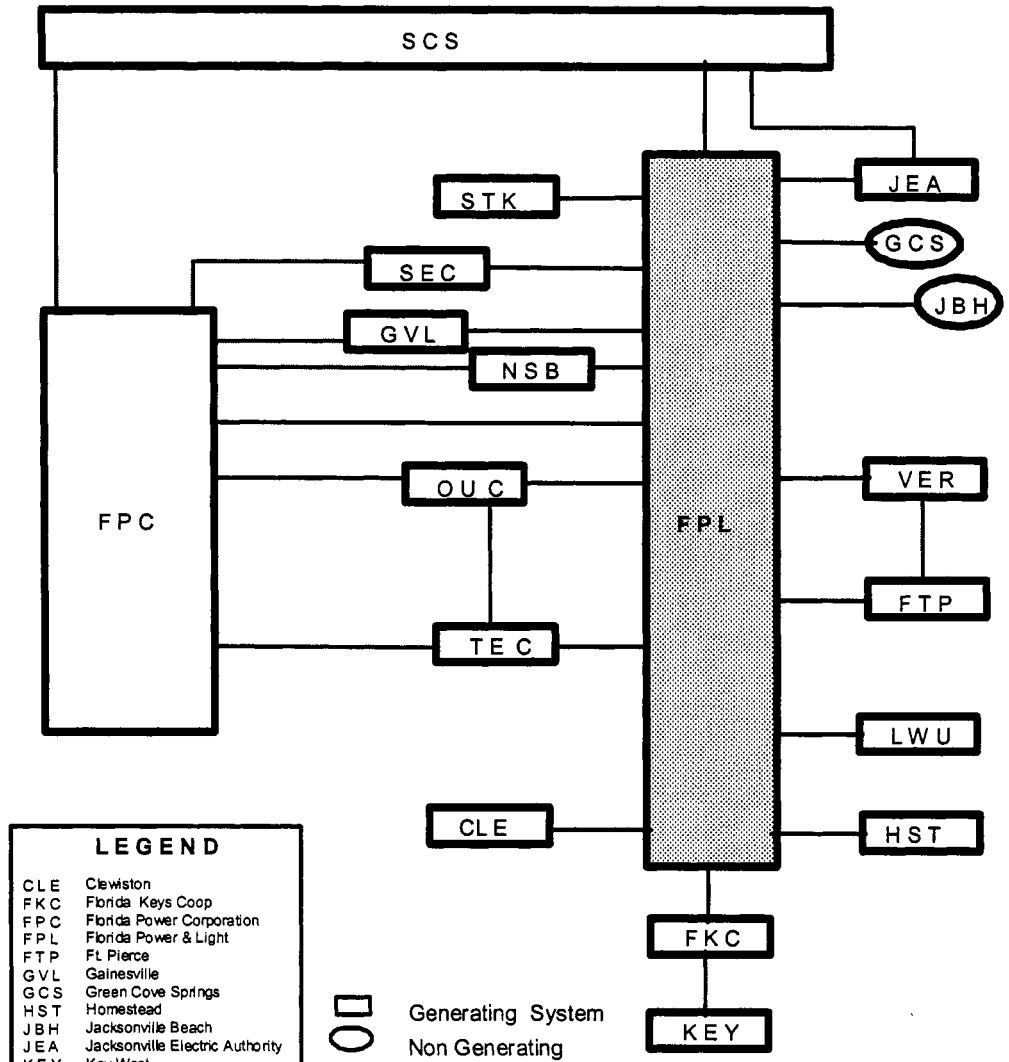
FPL Substation and Transmission System Configuration



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	5/1/1998	01/01/05
Florida Crushed Stone	Hernando	Coal (PC)	110.0	4/1/1992	10/31/05
			11.0	1/1/1994	10/31/05
			12.0	1/1/1995	10/31/05
			3.0	2/1/2003	10/31/05
Broward South	Broward	Solid Waste	50.6	4/1/1991	08/01/09
Palm Beach SWA	Palm Beach	Solid Waste	43.5	4/1/1992	03/31/10
Broward North	Broward	Solid Waste	45.0	4/1/1992	12/31/10
Cedar Bay Generating Co.	Duval	Coal (CFB)	250.0	1/25/1994	12/31/24
Indiantown Cogen., LP	Martin	Coal (PC)	330.0	12/22/1995	12/01/25
Broward South	Broward	Solid Waste	1.4	1/1/1993	12/31/26
			1.5	1/1/1995	12/31/26
			0.6	1/1/1997	12/31/26
Broward North	Broward	Solid Waste	7.0	1/1/1993	12/31/26
			1.5	1/1/1995	12/31/26
			2.5	1/1/1997	12/31/26

Table I.B.1

As Available Energy Purchases From Non-Utility Generators in 2003				
Project	**County**	**Fuel**	**In-Service Date**	**Energy (MWH) Delivered to FPL in 2003**
US Sugar-Bryant	Palm Beach	Bagassee	2/80	3,998
Tropicana	Manatee	Natural Gas	2/90	17,433
Okeelanta	Palm Beach	Bagassee/Wood	11/95	309,523
Tomoka Farms	Volusia	Landfill Gas	7/98	22,869
Georgia Pacific	Putnam	Paper By-Product	2/94	3,050

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 2003 have resulted in a cumulative Summer peak reduction of approximately 3,270 MW at the generator and an estimated cumulative energy saving of 25,429 GWH at the generator.

FPL's current DSM Plan was approved by the Florida Public Service Commission in late 1999 and reflects FPL's DSM Goals for the 2000-2009 time frame. FPL's 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 is also an important part of FPL's resource mix. FPL has a Unit Power Sales (UPS) contract to purchase 931 MW, with a minimum of 381 MW, of coal-fired generation from the Southern Company through May, 2010. 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 additional firm capacity purchase contracts through early 2007. These firm capacity purchase contracts are with a variety of suppliers. Table I.D.1 presents a projection of firm purchased power contracts through the year 2013.

	FPL's Purchased Power MW (1)							
	UPS		SJRPP		Other Firm Capacity Purchases		Total	
Year	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer
2003 (2)	929	929	390	381	1156	953	2475	2263
2004	931	931	390	381	1024	1355	2345	2667
2005	931	931	390	381	1018	945	2339	2257
2006	931	931	390	381	1018	945	2339	2257
2007	931	931	390	381	1018	0	2339	1312
2008	931	931	390	381	0	0	1321	1312
2009	931	931	390	381	0	0	1321	1312
2010	931	0	390	381	0	931	1321	1312
2011	0	0	390	381	931	931	1321	1312
2012	0	0	390	381	931	931	1321	1312
2013	0	0	390	381	931	931	1321	1312

Note:

(1) Total reflects total resource entitlements resulting from existing agreements between FPL, Southern Companies, JEA, and from new firm purchase agreements. In addition, FPL currently projects replacement by purchase(s) of the 2010 - ending UPS contracts.

(2) Values for 2003 are actual.

Table I.D.1

Schedule 1

Existing Generating Facilities
As of December 31, 2003

(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		Miami Dade County 27/57S/40E									2,338,100	2,259	2,205
	1		ST	FO6	NG	WA	PL	Unknown	Apr-67	Unknown	402,050	410	407
	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		Miami 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	1,947	1,699
	4		CC	NG	FO2	PL	PL	Unknown	May-93	Unknown	521,250	465	430
	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	1,748	1,653
	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	403	401
	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, 2003

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
						Fuel		Alt. Fuel	Commercial	Expected	Gen.Max.	Net Capability 1/	
	Unit		Unit	Fuel		Transport		Days	In-Service	Retirement	Nameplate	Winter	Summer
Plant Name	No.	Location	Type	Pri.	Alt.	Pri.	Alt.	Use	Month/Year	Month/Year	KW	MW	MW
Martin		Martin County 29/29S/38E									3,312,000	3,012	2,906
	1		ST	NG	FO6	PL	PL	Unknown	Dec-80	Unknown	863,000	830	828
	2		ST	NG	FO6	PL	PL	Unknown	Jun-81	Unknown	863,000	829	821
	3		CC	NG	No	PL	No	Unknown	Feb-94	Unknown	612,000	495	471
	4		CC	NG	No	PL	No	Unknown	Apr-94	Unknown	612,000	496	472
	8 A & B		CT	NG	No	PL	No	Unknown	Jun-01	Unknown	362,000	362	314
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	820	814
	1		ST	FO6	NG	WA	PL	Unknown	Apr-65	Unknown	402,050	410	407
	2		ST	FO6	NG	WA	PL	Unknown	May-69	Unknown	402,050	410	407
Sanford		Volusia County 16/19S/30E									1,754,350	2,290	2,018
	3		ST	FO6	NG	WA	PL	Unknown	May-59	Unknown	150,250	142	138
	4		CC	FO6	NG	WA	PL	Unknown	Oct-03	Unknown	436,100	1,074	940
	5		CC	NG	No	PL	No	Unknown	Jun-02	Unknown	1,168,000	1,074	940
Putnam		Putnam County 16/10S/27E									580,000	572	498
	1		CC	NG	FO2	PL	WA	Unknown	Apr-78	Unknown	290,000	286	249
	2		CC	NG	FO2	PL	WA	Unknown	Aug-77	Unknown	290,000	286	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%.

Schedule 1

Existing Generating Facilities
As of December 31, 2003

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
						Fuel Transport		Alt. Fuel	Commercial	Expected	Gen.Max.	Net Capability 1/	
	Unit		Unit		Fuel			Days	In-Service	Retirement	Nameplate	Winter	Summer
Plant Name	No.	Location	Type	Pri.	Alt.	Pri.	Alt.	Use	Month/Year	Month/Year	KW	MW	MW
Fort Myers		Lee County 35/43S/25E									2,483,000	2,759	2,399
	2		CC	NG	No	PL	No	Unknown	Jun-02	Unknown	1,739,000	1,610	1,423
	3		CT	NG	FO2	PL	PL	Unknown	Jun-01	Unknown		380	328
	1-12		CT	FO2	No	WA	No	Unknown	May-74	Unknown	744,000	769	648
Manatee		Manatee County 18/33S/20E									1,726,600	1,642	1,628
	1		ST	FO6	No	WA	No	Unknown	Oct-76	Unknown	863,300	821	814
	2		ST	FO6	No	WA	No	Unknown	Dec-77	Unknown	863,300	821	814
St. Johns River Power Park 2/		Duval County 12/15/28E (RPC4)									250,000	260	254
	1		BIT	BIT	Pet Coke	RR	WA	Unknown	Mar-87	Unknown	125,000	130	127
	2		BIT	BIT	Pet Coke	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 =			20,335	19,056

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 the National Oceanic and Atmospheric Administration (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 maximums and minimums of the composite temperature are used for the Summer and Winter peak models.

II.A. Long-Term Sales Forecasts

Long-term forecasts of electricity sales were developed for each revenue class for the forecasting period of 2003-2025 and are adjusted to match the Net Energy for Load (NEL) forecast. The results of these sales forecasts for the years 2004 - 2013 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 were 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. Sales for Resale

Sales for 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.

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.

7. 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 forecasts previously discussed are then adjusted to match the NEL from the annual NEL model.

The forecasted NEL values for 2004 – 2013 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 2004 – 2013 are presented in Schedules 3.1 and 3.2 as well as in Schedules 7.1 and 7.2.

1. 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.

2. 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.

3. Monthly Peak Forecasts

Monthly peaks for the 2003-2025 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 2003-2025 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
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	44,167	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	8,070,010	2.21	53,485	3,652,663	14,643	41,425	444,650	93,163
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
2013	9,472,334	2.24	66,342	4,234,176	15,668	51,945	529,810	98,045

* Population represents only the area served by FPL.

** Actual energy sales include existing conservation. Forecasted energy sales do not include the impact of incremental conservation.

*** 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	Street &	Other Sales to	Total*** Sales to
		Average* No. of	Average KWH Consumption	& Railways	Highway Lighting	Public Authorities	Ultimate Consumers
Year	GWH **	Customers	Per Customer	GWH **	GWH **	GWH **	GWH
1994	3,845	15,588	246,664	85	353	664	73,608
1995	3,883	15,140	256,473	84	358	648	76,248
1996	3,792	14,783	256,511	83	368	577	77,334
1997	3,894	14,761	263,803	85	383	702	79,855
1998	3,951	15,126	261,206	81	373	625	85,130
1999	3,948	16,040	246,135	79	473	465	84,676
2000	3,768	16,410	229,616	81	408	381	87,960
2001	4,091	15,445	264,875	86	419	67	90,212
2002	4,057	15,533	261,186	89	420	63	95,523
2003	4,004	17,029	235,128	93	425	64	99,496
2004	4,036	15,459	261,078	89	440	63	100,574
2005	4,094	15,302	267,547	90	447	63	103,398
2006	4,145	15,185	272,967	90	453	63	106,525
2007	4,165	15,186	274,266	90	463	63	109,010
2008	4,187	15,238	274,774	91	473	63	111,680
2009	4,200	15,275	274,959	91	483	63	113,748
2010	4,214	15,313	275,191	92	493	63	116,262
2011	4,231	15,372	275,241	92	503	63	118,610
2012	4,246	15,377	276,127	93	512	63	120,845
2013	4,260	15,418	276,300	93	521	63	123,224

*Average No.of Customers is the annual average of the twelve month values.
** Actual energy sales include existing conservation. Forecasted energy sales do not include the impact of incremental conservation.
***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
1994	1,400	5,367	80,376	2,561	3,422,187
1995	1,437	6,276	83,961	2,459	3,488,796
1996	1,353	6,011	84,698	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	1,511	7,386	108,393	2,879	4,117,221
2004	1,441	7,510	109,525	2,865	4,168,421
2005	1,456	7,711	112,565	2,905	4,241,326
2006	1,474	7,943	115,942	2,941	4,315,007
2007	1,459	7,961	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	3,121	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
2013	1,092	8,958	133,274	3,342	4,782,747

* GWH Col. (19) = Col. (16) + Col. (17) + Col. (18). Actual NEL includes existing conservation and agrees to Col (8) on schedule 3.3.
Forecasted NEL does not include incremental conservation and agrees to Col. (2) on schedule 3.3
** 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
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	19,668	253	19,415	0	839	775	568	535	18,261
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
2013	24,784	159	24,625	0	830	321	623	148	22,862

Historical Values (1994 - 2003):

Col. (2) - Col.(4) are actual values for historical summer peaks. As such, they incorporate the effects of conservation (Col. 7 & Col. 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.

Col. (5) -Col. (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 Business on Call (BOC) and Commercial Demand Reduction (CDR).

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 (2004 - 2013):

Col. (2) - Col.(4) represent FPL's forecasted peak w/o incremental conservation or cumulative load control. The effects of conservation implemented prior to 2003 are incorporated into the forecast.

Col. (5) - Col. (9) represent all incremental conservation and cumulative load control. These values are projected August values and are based on projections with a 1/2003 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
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	14,752	211	14,541	0	938	601	534	309	13,280
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
2013/14	25,057	137	24,920	0	968	284	564	57	23,184

Historical Values (1994/95 - 2003/04):

Col. (2) - Col.(4) are actual values for historical winter peaks. As such, they incorporate the effects of conservation (Col. 7 & Col. 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.

Col. (5) - Col.(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 Business on Call (BOC) and Commercial Demand Reduction (CDR).

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 (2004/05- 2013/14):

Col. (2) - Col.(4) represent FPL's forecasted peak w/o incremental conservation or cumulative load control. The effects of conservation implemented prior to 2003 are incorporated into the forecast.

Col. (5) - Col.(9) represent all incremental conservation and cumulative load control. These values are projected January values and are based on projections with a 1/2003 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(%)
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	112,158	2,009	1,757	110,646	1,511	7,386	108,393	62.9%
2004	109,525	145	52	108,084	1,441	7,510	109,328	61.4%
2005	112,565	238	88	111,108	1,456	7,711	112,239	61.8%
2006	115,942	334	124	114,468	1,474	7,943	115,484	62.0%
2007	118,430	430	159	116,970	1,459	7,961	117,841	61.9%
2008	120,899	529	193	119,807	1,092	8,126	120,177	61.8%
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	61.3%
2013	133,274	671	240	132,181	1,092	8,958	132,363	61.4%

Historical Values (1994 - 2003):

Col. (2) represents derived "Total Net Energy For Load w/o DSM". The values are calculated using the formula: Col. (2) =Col. (3) + Col. (4) + Col. (8).

Col. (3) & Col.(4) are DSM values starting in January, 1988 through 2003 which contributed to the values in Col. (5) -Col. (9).

Col. (5) & Col. (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 (2004 - 2013):

Col. (2) represents Net Energy for Load w/o DSM values. The values are calculated using the formula: Col. (2) = Col. (3) + Col. (4) + Col. (8).

Col. (3) & Col. (4) are forecasted values of the reduction on sales from incremental conservation.

Col. (5) & Col. (6) are a breakdown of Net Energy For Load in Col (2) , into Retail and Wholesale.

Col. (8) NEL projected values shown here do include the impact of conservation in Col. (3) and Col. (4). Therefore, these NEL values do not match those shown on schedule 2.3 because those values do not account for incremental conservation.

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)
Adjustments are made for leap years.

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)
	2003 ACTUAL		2004* FORECAST		2005* FORECAST	
Month	Total Peak Demand MW	NEL GWH	Total Peak Demand MW	NEL GWH	Total Peak Demand MW	NEL GWH
JAN	20,190	8,256	20,081	7,959	20,583	8,230
FEB	14,241	6,832	16,737	7,959	17,156	8,172
MAR	17,816	8,969	15,454	8,000	15,841	8,238
APR	16,505	8,235	16,833	8,358	17,249	8,586
MAY	19,012	9,671	18,609	9,221	19,069	9,467
JUN	18,580	10,011	19,503	10,193	19,985	10,457
JUL	19,668	10,490	19,849	10,636	20,340	10,907
AUG	19,018	10,245	20,297	10,825	20,799	11,100
SEP	18,873	10,392	19,689	10,503	20,175	10,779
OCT	18,311	9,268	18,311	9,339	18,764	9,598
NOV	15,989	8,626	16,837	8,351	17,258	8,599
DEC	15,362	7,399	17,178	8,181	17,608	8,432
TOTALS		108,393		109,525		112,565

* Forecasted Peaks & NEL do not include the impacts of cumulative load management and incremental conservation and are consistent with values shown in Col. (19) of Schedule 2.3 and Col. (2) of Schedule 3.3.

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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 considered. The projected timing and type of potential new power plants, the primary subject of this document, is determined as part of the IRP process work. This section discusses how FPL applied this process in its 2003 and early 2004 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 projected new resource needs;

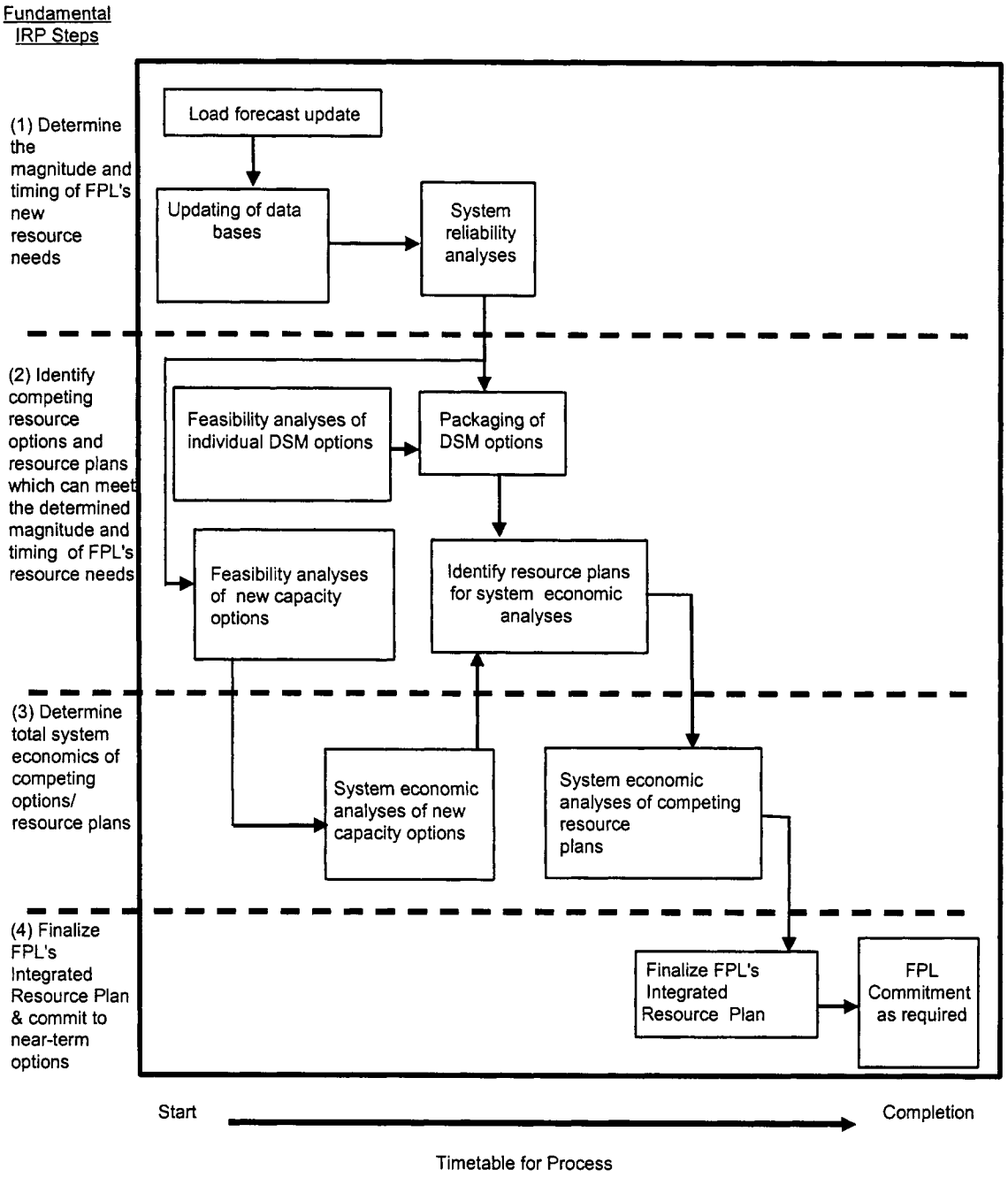
Step 2: Identify which resource options can meet the determined magnitude and timing of the specific resource needs;

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 make commitments, as required.

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 projected 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 expected to be needed. Also determined in this step is when the capacity is expected to be needed to meet FPL's planning criteria. This step is often referred to as a reliability assessment for the utility system.

Step 1 generally 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, as well as power plant capability and reliability assumptions. During its recent IRP work, FPL made four key assumptions. These assumptions include near-term construction capacity additions through the summer of 2007, short-term firm capacity purchase additions through late spring of 2007, long-term DSM implementation through 2009, and the projected replacement of the Southern Company Unit Power Sales (UPS) contracts that end in May, 2010.

The first of these assumptions incorporates FPL's announced plans to add near-term capacity through various construction projects. These construction projects include the addition of a new combined cycle (CC) unit at Manatee, the conversion of two existing CT's at Martin into a new CC unit and a new CC unit at Turkey Point. The Manatee and Martin additions are under construction with a scheduled in-service date of June, 2005. These capacity additions were approved by the FPSC in November 2002 after comparing them to proposals that were received in response to Requests for Proposals (RFP's) that solicited alternatives for meeting FPL's 2005/2006 capacity needs. These capacity additions also received certification under the Florida Electrical Power Plant Siting Act (PPSA) in April, 2003. The new CC unit at FPL's Turkey Point site is scheduled for mid-2007. FPL selected this construction option after evaluating competing proposals provided in response to FPL's 2003 RFP. FPL recently (March 8, 2004) filed for a request for approval of a Determination of Need for this unit with the FPSC and also has pending an application for PPSA certification of this unit with a decision expected in the 1st Quarter of 2005.

The second of these assumptions involves short-term firm capacity purchase additions. These firm capacity purchases are provided by a combination of utility and independent power producers. The total capacity and duration of these purchases have changed somewhat from what was presented in the 2003 Site Plan and the annual total capacity values for these purchases are presented in Table I.D.1 as "Other Firm Capacity Purchases" up to mid-2007. These purchase amounts are included in FPL's resource planning work.

The third of these assumptions involves DSM. Since 1994, FPL's resource planning work has incorporated the DSM MW called for in FPL's approved DSM goals in its analyses. This was again the case in FPL's most recent planning work, as its approved DSM goals at the time this Site Plan was filed were included.

The fourth of these assumptions anticipates a replacement of the UPS purchases that are currently scheduled to end in May, 2010 with other purchases. These purchases are presented in Table I.D.1 as "Other Firm Capacity Purchases" for the years beyond mid-2010.

These assumptions and much of the other updated information are used is the first fundamental step: the determination of the magnitude and the timing of FPL's projected resource needs. This determination is accomplished by system reliability analyses which are typically based on the dual planning criteria of a minimum peak period reserve margin of 20% (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.

Historically, both deterministic and probabilistic methodologies have been employed in system reliability analysis. The calculation of excess firm capacity at the time of annual system peaks (reserve margin) is the most common method, and this relatively simple deterministic calculation can be performed on a spreadsheet. The reserve margin calculation provides an indication of how much extra generation a system has above the forecasted peak load. A value of 20% is used as the reserve margin planning criteria to establish FPL's need. However, deterministic methods do not take into account probabilistic-related elements such as unit reliability 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 and FPL uses this LOLP standard. LOLP analyses require complex statistical calculations and are 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 forecast of the amount and timing of capacity resources needed to meet both the reserve margin and LOLP criteria for system reliability. This information is used in the second fundamental step: identifying resource options and resource plans that can meet the projected 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 analyses of new capacity options are carried out to determine which new capacity options appear to be the most economic. These analyses also consider capacity size (MW), estimated development and construction 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 projected resource needs are met and the planning criteria are satisfied. The creation of these competing resource plans is typically carried out using dynamic programming techniques with the objective of forming alternative resource plans within the constraints applied to the resource planning process. The constraints include

recognition of reserve margin criteria, feasible resource option performance characteristics, and construction or DSM implementation lead time. The development of these resource plans has been conducted using the EGEAS (Electric Generation Expansion Analysis System) computer model. When DSM options are being addressed, other computer models using both linear and non-linear programming techniques are used. For planning purposes, only FPL construction options were included in FPL's most recent planning analyses addressing FPL's 2008-2013 forecasted capacity needs.

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.

Step 3: Determining the Total System Economics:

At the completion of fundamental steps 1 & 2, 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. The EGEAS model is employed to conduct the basic economic analyses of the resource plans.

The basic economic analysis of the competing resource plans focuses 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 levelized system average rate (i.e., a Rate Impact Measure or RIM methodology). However, in cases such as those existing for FPL's most recent planning work (wherein the DSM contribution was incorporated 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. This basic economic analysis captures the capital and operating costs of new resource options as well as the impact these new resource options have on FPL's system fuel costs.

In addition, other system costs of these resource plans must be incorporated as needed into the economic analyses. These include transmission-related costs, such as integration and system losses; increased operating costs of existing generating units, and impacts on FPL's capital structure. These costs are evaluated separately and in addition to the system operating cost values developed in the EGEAS analysis to complete the system cost impact of each resource plan. FPL considered the results of all of the

economic analyses carried out in Step 3, before a determination of FPL's resource plan was made.

Step 4: Finalizing FPL's Current Resource Plan

The results of the work performed in the previous three fundamental steps are evaluated by FPL management and a decision is made establishing FPL's resource plan. The current resource plan is presented in the following section.

III.B Resource Additions

FPL's preliminary plan for generation capacity additions and changes for the period 2004 through 2013 are depicted in Table III.B.1 (the planned DSM additions are shown separately in Table III.D.1). These capacity additions and changes will result from a variety of actions including: minor changes to existing units (such as plant component wear between maintenance activities or component replacements as part of maintenance activities), changes in the amounts of purchased power being delivered under existing contracts as per the contract schedules, the expiration of contracts, the addition of new purchase contracts, projected construction of new units, and conversion of the CT's at Martin into a CC unit.

As shown in Table III.B.1, the bulk of the capacity additions are made up of the following items:

- 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
- the projected construction of a new CC unit in 2007 at FPL's Turkey Point site
- the projected construction of 2 new CT units at the Midway site in 2008
- the projected construction of a new CC unit at the Corbett site in 2009
- the projected construction of two additional, unsited CC units, one each in 2011 and 2012.

These projected capacity additions address the forecasted resource needs from FPL's reliability analyses. In 2008, FPL's forecasted resource need is approximately 350 MW. For each year from 2009 through 2013, the projected annual resource need is significantly larger; between 550 MW to 630 MW per year.

In the past several years, FPL has undertaken several plant conversion and new construction activities that will result in the addition of approximately 6,600 MW of high efficiency, low emission combined cycle baseload generating capacity by 2007. Furthermore, as part of these plant conversions, FPL has transformed over 1,600 MW of previously intermediate and peaking generating capacity to high efficiency combined cycle base load capacity. Consequently, FPL currently plans that its relatively small 2008 need will be met by the construction of two CT units. Another factor contributing to this choice is the fact that FPL is in the process of developing proposed DSM Goals for the 2005 – 2014 period. FPL's DSM Goals will be filed with the FPSC in June 2004 and it is expected that the FPSC approval will be obtained no earlier than September 2004. The approved DSM Goals will then be utilized in subsequent analyses to finalize resource plans for 2008 and to evaluate resource plans to meet projected needs in 2009 and beyond. The current choice of new CT's to meet the 2008 need provides the flexibility to adopt the plan consistent with the DSM Goals that will be approved in late 2004 and will allow FPL to also consider meeting this need, in whole or in part, through one or more purchases from existing units.

Projected Capacity Changes and Reserve Margins for FPL [1]					
		Net Capacity Changes (MW)		FPL Reserve Margin (%)	
		Winter [2]	Summer [3]	Winter	Summer
2004	Purchases [4]	(127)	44	27%	21%
	New Short-Term Purchase [5]	---	360		
	Changes to existing Units	21	74		
2005	Purchases [4]	(16)	(60)	22%	26%
	Manatee Unit #3 Combined Cycle [6]	---	1,107		
	New Short-Term Purchase [5]	---	(360)		
	Conversion of MR #8 CT's to CC [6]	(363)	785		
2006	Manatee Unit #3 Combined Cycle [6]	1,201	---	31%	22%
	Conversion of MR #8 CT's to CC [6]	1,198	---		
	Purchases [4]	(136)	(136)		
	Changes to existing Units	(2)	(1)		
2007	Purchases [4]	---	(945)	28%	20%
	Turkey Point Combined Cycle #5 [6]	---	1,144		
	Changes to existing Units	(1)	(2)		
2008	Purchases [4]	(1,018)	---	26%	20%
	Turkey Point Combined Cycle #5 [6]	1,181	---		
	Combustion Turbines at Midway	---	324		
	Changes to existing Units	(1)	---		
2009	Combustion Turbines at Midway	362	---	26%	23%
	Purchases [4]	---	(51)		
	Combined Cycle at Corbett [6]	---	1,144		
2010	Combined Cycle at Corbett [6]	1,181	---	28%	20%
	Purchases [4]	(51)	(975)		
	New Purchase(s)	---	931		
2011	Unsited Combined Cycle # 1 [6]	---	1,144	25%	22%
	Purchases [4]	(1,020)	(45)		
	New Purchase(s)	931	---		
2012	Unsited Combined Cycle # 1 [6]	1,181	---		
	Unsited Combined Cycle # 2 [6]	---	1,144	27%	25%
2013	Unsited Combined Cycle # 2 [6]	1,181	---	30%	22%
	TOTALS =	5,702	5,627		

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

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

(6) 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 Additional Issues Impacting FPL's Recent Planning Work

In the course of FPL's 2003 and early 2004 planning efforts, two issues that were identified in FPL's 2003 Site Plan received additional attention in FPL's on-going resource planning work. Those two issues are: 1) the need to address the growing imbalance in southeast Florida between load and generating capacity located within this region; and 2) the desire to maintain/enhance fuel diversity in the FPL system.

Southeast Imbalance

As was identified in previous FPL filings, there exists a significant imbalance between the large peak load in southeast Florida and the installed generating capacity in that region. The imbalance between generation and load is forecast to grow during the next few years because FPL forecasts continued load growth in this area beyond planned generation additions. If this growing imbalance is not addressed this will give rise to additional system costs that result from three transmission-related components: 1) increased transmission integration costs that will be required to deliver power to the load center from units outside the southeast Florida area, 2) the need to dispatch less efficient resources within the southeast Florida area and 3) the transmission losses associated with increased imports of electricity into the area.

Recognizing this load and generation imbalance in southeast Florida and the forecast of continued load growth in this area, FPL concluded it must either add generating capacity within this region or add the needed capacity outside of the southeast Florida area and the necessary transmission facilities to deliver capacity into southeast Florida. FPL's 2003 Request for Proposal (RFP) incorporated these concerns. The evaluation of FPL's Next Planned Generating Unit (NPGU) and proposals received in response to FPL's RFP addressed all system costs, including the three identified transmission-related cost components that are affected by the imbalance issue discussed above. Current and future resource planning processes also recognize these transmission-related costs associated with the geographic location of resource additions.

Fuel Diversity

Fuel diversity was the other key issue that received additional attention. In 2003, FPL began an evaluation of the economic and environmental characteristics of solid fuel-based technologies. Most economic analyses suggest that the forecasted fuel price differential between natural gas and solid fuel options might support the higher capital

cost of solid fuel facilities. However, there remain at least three significant uncertainties inherent in the analyses that must be addressed and refined.

The first, and most influential, of these uncertainties is the forecasted behavior of the price differential between natural gas and solid fuels. Recognition of the high volatility exhibited by natural gas prices in recent years has added to the uncertainty of long - term price forecasts. Although continued growth in gas demand may contribute to higher firm gas prices, potential additional supply alternatives in the coming years (such as Liquefied Natural Gas - LNG) may contribute to lower gas prices. The extent to which these factors offset one another is a key influence that must be considered in this process. The second area of uncertainty is related to the type and cost of emissions management opportunities that will be available and the requirements that must be met during the operating life of a solid fuel facility. FPL's analyses of this area will address opportunities to employ evolving technologies to effectively manage the emissions of solid fuel facilities, the likely outcome of several significant legislative proposals that will impact the control level required, and managing the cost of compliance to FPL's customers in the future. Finally, FPL must address the uncertainty surrounding the capital cost and feasibility of developing and constructing a solid fuel facility in Florida. FPL is actively pursuing the refinement of data that will assist characterizing these uncertainties in a quantitative manner and incorporating this information into the resource planning process. FPL will provide to the FPSC, by December 2004, a report on FPL's evaluation regarding the possible addition of a solid fuel generation capacity in the future.

The current plan to meet FPL's projected capacity needs beyond 2007, reflected in the Tables and Schedules of this document, consists of the construction of natural gas - fired units, primarily CC's. The plan identifies this CC technology, in large part, because of its high efficiency and known benign environmental impact, as well as the high-level of development, construction, operational performance and capital cost forecasting confidence that has been accrued over recent years by FPL and the electric industry. Identifying this technology in FPL's current resource plan establishes a basis for which costs and risks are well understood and will allow the relative risks and benefits of competing alternatives to be more efficiently evaluated as detailed information and forecasts for those alternatives are refined. These projected resource additions beyond 2007 are subject to change pending the results of such evaluations.

FPL is actively engaged in identifying and evaluating opportunities that would enhance fuel and resource diversity in its capacity resource mix. These opportunities include:

- the construction of new solid fuel-based (coal and petroleum coke) facilities
- obtaining access to non-traditional sources of natural gas, such as through suppliers who transport and deliver natural gas to Florida in the form of LNG.
- maintaining the ability to utilize fuel oil at FPL's existing units.

Therefore, the new gas-fired CT and CC units currently shown as capacity additions for 2008 through 2013, and in particular for 2011 through 2013, are subject to change in the future as FPL evaluates the feasibility and cost-effectiveness of various alternatives to enhance fuel diversity. Based on current information, FPL believes that the earliest that fuel diversity could be enhanced by adding new solid fuel-based generating capacity would be mid-2011 based on the siting, development, permitting, construction, and commissioning timeline for this technology. In addition, FPL believes it is more likely that such a unit would be sited at some site north of southeast Florida due to permitting and fuel transportation considerations.

FPL's assessment of the fuel and resource diversity alternatives will continue to be developed through its on-going resource planning work and site development activities in 2004.

III.D Demand Side Management (DSM)

1. 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.

Residential 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 shortage, 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 program mentioned above in 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.

Conservation 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 investigated cost-effective methods of increasing the energy efficiency in the homes of FPL's low-income customers. The research project addressed 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 were used by the housing authorities to leverage their funds to increase the overall energy efficiency of the homes they are retrofitting.

The final report for this project was filed in November 2003. Of the seven different DSM measures evaluated, it was found that two measures, addressing HVAC maintenance and infiltration, were cost-effective. The Commission recently approved a permanent Low-Income Weatherization Program that includes these cost-effective measures. The research project will be discontinued upon the rollout of the permanent program.

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. 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 has been holding workshops to address this issue. This project is scheduled to be completed in the first quarter of 2004.

Green Energy Project

Under this project, FPL has examined the feasibility of purchasing tradable renewable energy credits 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 purchasing tradable renewable energy credits that are associated with electric energy generated by these sources.

Development of a Green Energy program was completed and FPL filed a petition for program approval with the FPSC in August 2003. As part of this process, a supply contract was put into place that allows FPL to match supply with customer demand for green energy. The FPSC approved the program on December 2, 2003 and program implementation began in the first quarter of 2004.

On Call Incentive Reduction Pilot

In March 2003, FPL received FPSC approval to perform a pilot project for its On Call program. Under the pilot project FPL is offering to new participants a residential load control service similar to the On Call Program at a reduced incentive level. This offering allows 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.

3. **FPL's approved DSM Goals at the time this Site Plan was filed are listed below in Table III.D.1**

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 has a number of short-term, firm capacity purchases that extend through early 2007. The capacity supplied by these purchases is 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. Table III.F.1 presents FPL's proposed future additions of 230 kV and 500 kV bulk transmission lines including those corresponding to proposed generating facilities and those that 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	Andytown	Pennsuco	2	6/04	230	508
FPL	Bridge	Indiantown #2	10	12/04	230	759
FPL	Broward-Corbett	Rainberry-Yamato	11	6/04	230	759
FPL	Conservation	Oakland Park	13	6/05	230	759
FPL	Dade	Overtown	11	6/04	230	759
FPL	Indiantown	Martin #2	13	12/04	230	1067
FPL	Whidden	Vandola	27	6/04	230	1067
FPL	Collier	Orange River #3	54	12/05	230	759
FPL	West Palm Coast	St. Johns	23	6/08	230	759

Table III.F.1

In addition, there will be transmission facilities needed to connect a number of FPL's committed and projected capacity additions to the system transmission grid. These transmission facilities for the projected capacity additions at FPL's existing Manatee, Martin, Turkey Point, Midway, and Corbett sites are described below.

Since the projected capacity additions for 2011 and 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 Manatee

The work required for the new capacity addition at Manatee, Manatee Unit No. 3, with the FPL grid is projected to be as follows:

I. Substation:

1. Build new collector yard containing two collector busses with 5 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- 560MVA) 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.
10. Upgrade existing breaker at Ringling Sub to 3000 amps

II. Transmission:

1. Upgrade the Calusa-Charlotte 230kV transmission line to 1875 Amps.
2. Upgrade the Johnson- Manatee 230kV transmission line to 3000 Amps.
3. Upgrade the Manatee-Ringling # 3 230kV transmission line to 3000 Amps.
4. Upgrade the Charlotte-Fort Myers # 2 230kV transmission line to 1875 Amps.

III.F.2 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, Martin Unit No. 8) with the FPL grid is projected to be as follows:

I. Substation:

1. Build new collector yard containing one collector buss with 3 breakers 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, 560 MVA) 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 to a breaker and a half scheme.
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 1600 Amps.

III.F.3 Transmission Facilities at Turkey Point

The work required for the projected new CC unit at Turkey Point, Turkey Point Unit No. 5, with the FPL grid is projected to be as follows:

I. Substation:

1. Build new collector yard containing two collector busses with 5 breakers to connect the four CT's, and one ST.
2. Construct two string busses to connect the collector busses and main switchyard.
3. Add five main step-up transformers (4-225MVA, 1- 560 MVA) one for each CT, and one for the ST.
4. Add a new two breaker bay to connect the collector bus at the Turkey Point switchyard.
5. Add a second two breaker bay at the Turkey Point switchyard to connect the other collector bus.
6. Add relays and other protective equipment.
7. Expand site and relay vault for two new line terminals at Turkey Point switchyard.

II. Transmission:

1. Upgrade the Turkey Point-Galloway Tap 230kV transmission line section to 1418 Amps.
2. Upgrade the Turkey Point-McGregor-Florida City 230kV transmission line section to 1403 Amps.
3. Upgrade the Turkey Point-Miller 230kV transmission line section to 1356 Amps.
4. Upgrade the Miller-Killian 230kV transmission line section to 1315 Amps.

III.F.4 Transmission Facilities at Midway

The work required for the projected new CT units at Midway, Midway Unit Nos. 1A and 1B, with the FPL grid is projected to be as follows:

I. Substation:

1. Build new collector yard containing one collector buss with 2 breakers to connect the two CT's.
2. Construct one string buss to connect the collector buss and main switchyard.
3. Add two main step-up transformers (2-225 MVA) one for each CT.
4. Build a new 500 kV Bay #3 with two breakers and connect one string buss from the collector yard.
5. Add relays and other protective equipment.
6. Expand site and relay vault for the new line terminal at Midway 500 kV switchyard.

II. Transmission:

No upgrades are expected to be necessary.

III.F.5 Transmission Facilities at Corbett

The work required for the projected new CC unit at Corbett, Corbett Unit No. 1, with the FPL grid is projected to be as follows:

I. Substation:

1. Build new collector yard containing two collector busses with 5 breakers to connect the four CT's, and one ST.
2. Construct two string busses to connect the collector busses and main switchyard.
3. Add five main step-up transformers (4-225 MVA, 1- 560 MVA) one for each CT, and one for the ST.
4. Add a new Bay #4 with 3 breakers at the Corbett 230 kV main switchyard. Connect one string buss from the collector yard and relocate the Alva 230 kV terminal from Bay #3 to new Bay #4.
5. Connect second collector string buss to Bay #3.
6. Add relays and other protective equipment.
7. Expand site and relay vault for two new line terminals at Corbett 230 kV switchyard.

II. Transmission:

No upgrades are expected to be necessary.

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 photovoltaic (PV) system east of the Mississippi. This PV installation at FSEC'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 large scale 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.

FPL then analyzed the feasibility of encouraging utilization of PV in another, potentially much larger way. FPL's basic approach did 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 was 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 used this money to purchase PV modules and installed them at FPL's Martin Plant site.

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. This outcome of this project was discussed in Section III.D.2.

The second effort initiated in 2000 was 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. The outcome of this effort is also discussed in section III.D.2.

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 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). In 1991 FPL significantly expanded its natural gas firm transportation rights. In 1994 FPL re-powered its Lauderdale Units No. 4 and No. 5 to combined cycle and added Martin Units No. 3 and No. 4 to enhance the efficient utilization of natural gas. Additional coal resources were added with the partial acquisition of Scherer Unit No. 4 concluding with FPL owning 76% of the unit by 1995. Beginning in 1997, petroleum coke was added to the fuel mix as a blend stock with coal at SJRPP further diversifying the fuel mix. These steps, among others, allowed FPL to meet its customers' energy needs with a more diversified mix of energy sources. In addition, between 1994 and 1998 FPL actively sought certification to convert its Manatee Units No. 1 and No. 2 to utilize Orimulsion. The Governor and cabinet did not grant a certification for this conversion that would have further diversified FPL's fuel mix.

The trend in recent years has been a steady increase in the amount of natural gas that is used by FPL to provide electricity. This is driven by the application of combined cycle generating units that offer significant thermal efficiency, low emissions and low capital

costs. Until recently, the price of natural gas was low enough that the economic analysis indicated combined cycle technology as the most cost-effective alternative. Although this planning document reflects a continuation of the trend of natural gas-fired additions, FPL's plan is subject to change as new fuel price forecasts are developed and FPL's knowledge of other cost drivers and uncertainties is refined. FPL's future resource planning work will continue to focus on identifying and evaluating alternatives that will maintain or enhance FPL's long-term fuel diversity. These fuel diversity-enhancing alternatives may include:

- the construction of new solid fuel-based (coal and petroleum coke) facilities
- obtaining access to diverse sources of natural gas, such as from suppliers of natural gas that transport and deliver natural gas to Florida in the form of LNG
- preserving FPL's ability to utilize fuel oil at its existing units.

FPL's current use of various fuels to supply energy to customers, plus a projection of this "fuel mix" through 2013 based on the resource plan presented in this document, is presented in Schedules 5, 6.1, and 6.2. For purposes of this fuel mix projection, it was conservatively assumed that the projected new purchases to replace the UPS capacity would be delivered from natural gas-fired units.

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, 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 utilize 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 that will support a slow, but steady growth in the use of petroleum coke in the U.S. electric utility industry.

As previously mentioned, FPL's resource planning work will continue to analyze the feasibility of generation alternatives, including solid fuel alternatives, that enhance FPL's long-term fuel diversity. The analyses of gas-fired and solid fuel-fired alternatives will involve the assessment of a number of uncertainties including fuel price uncertainties. Consequently, for these analyses a number of fuel price sensitivities will be used in the analyses that determine the magnitude and likelihood of cost differentials between gas and solid fuel alternatives.

Schedule 5
Fuel Requirements [1/]

	Fuel Requirements	Units	Actual [2/] 2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
(1)	Nuclear	Trillion BTU	276	257	255	253	263	254	269	264	263	268	265	263
(2)	Coal	1,000 TON	3,070	3,402	3,126	3,243	3,165	3,480	3,288	3,517	3,291	3,296	3,306	3,364
(3)	Residual (FO6)- Total	1,000 BBL	29,791	32,103	28,731	24,627	22,983	20,903	20,261	17,952	18,074	18,049	12,894	13,144
(4)	Steam	1,000 BBL	29,791	32,103	28,731	24,627	22,983	20,903	20,261	17,952	18,074	18,049	12,894	13,144
(5)	Distillate (FO2)- Total	1,000 BBL	473	565	989	1,504	1,627	1,260	1,170	1,683	1,880	1,141	1,247	2,126
(6)	CC	1,000 BBL	29	36	20	26	22	49	24	35	49	39	31	26
(7)	CT	1,000 BBL	444	529	969	1478	1605	1211	1146	1648	1831	1,102	1,216	2,100
(8)	Steam	1,000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(9)	Natural Gas -Total	1,000 MCF	286,112	292,993	348,830	383,442	412,181	436,727	447,474	469,581	530,380	573,744	611,334	625,307
(10)	Steam	1,000 MCF	78,017	50,862	65,473	58,658	54,947	53,427	51,715	47,931	44,506	46,881	36,576	36,549
(11)	CC	1,000 MCF	195,106	229,681	262,987	314,409	349,507	381,505	390,821	418,080	483,423	524,881	573,093	586,991
(12)	CT	1,000 MCF	12,988	12,450	20,370	10,375	7,727	1,794	4,938	3,570	2,450	1,983	1,665	1,767

1/ Reflects fuel requirements for FPL only.

2/ Source: A Schedules.

Schedule 6.1
Energy Sources

	Energy Sources	Units	Actual 1/ 2002	Actual 1/ 2003	Forecasted 2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
(1)	Annual Energy Interchange 2/	GWH	10,287	10,387	10,278	10,634	10,663	10,652	10,802	10,641	6,085	2,932	2,937	2,905
(2)	Nuclear	GWH	25,295	23,524	23,262	23,121	24,037	23,198	24,537	24,121	24,042	24,467	24,191	24,043
(3)	Coal	GWH	5,977	6,625	5,962	6,156	6,025	6,568	6,249	6,650	6,265	6,277	6,296	6,389
(4)	Residual(FO6) -Total	GWH	18,708	20,305	18,159	15,587	14,561	13,199	12,780	11,376	11,466	11,421	8,185	8,357
(5)	Steam	GWH	18,708	20,305	18,159	15,587	14,561	13,199	12,780	11,376	11,466	11,421	8,185	8,357
(6)	Distillate(FO2) -Total	GWH	188	248	366	590	633	507	482	656	737	455	492	805
(7)	Steam	GWH	18	0	0	0	0	0	0	0	0	0	0	0
(8)	CC	GWH	170	21	12	16	13	29	15	21	29	23	19	16
(9)	CT	GWH	0	226	354	575	620	478	467	635	707	432	473	789
(10)	Natural Gas -Total	GWH	34,541	37,707	42,984	49,082	53,465	57,573	58,931	62,521	70,491	76,488	82,324	84,525
(11)	Steam	GWH	7,549	4,905	5,694	5,115	4,800	4,657	4,508	4,170	3,880	4,098	3,180	3,175
(12)	CC	GWH	25,986	31,718	35,661	43,138	48,115	52,787	54,030	58,061	66,409	72,226	78,998	81,208
(13)	CT	GWH	1,006	1,084	1,629	830	550	130	392	290	202	164	146	142
(14)	Other 3/	GWH	9,202	9,597	8,317	7,069	6,100	6,144	6,397	6,297	5,814	5,376	5,389	5,339
Net Energy For Load 4/		GWH	104,199	108,393	109,328	112,239	115,484	117,841	120,177	122,261	124,900	127,416	129,813	132,363

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 8 on Schedule 3.3.

Schedule 6.2
Energy % by Fuel Type

	Energy Source	Units	Actual 2002	Actual 2003	Forecasted 2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
(1)	Annual Energy Interchange 2/	%	9.9	9.6	9.4	9.5	9.2	9.0	9.0	8.7	4.9	2.3	2.3	2.2
(2)	Nuclear	%	24.3	21.7	21.3	20.6	20.8	19.7	20.4	19.7	19.2	19.2	18.6	18.2
(3)	Coal	%	5.7	6.1	5.5	5.5	5.2	5.6	5.2	5.4	5.0	4.9	4.9	4.8
(4)	Residual (FO6) -Total	%	18.0	18.7	16.6	13.9	12.6	11.2	10.6	9.3	9.2	9.0	6.3	6.3
(5)	Steam	%	18.0	18.7	16.6	13.9	12.6	11.2	10.6	9.3	9.2	9.0	6.3	6.3
(6)	Distillate (FO2) -Total	%	0.2	0.2	0.3	0.5	0.5	0.4	0.4	0.5	0.6	0.4	0.4	0.6
(7)	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
(8)	CC	%	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(9)	CT	%	0.0	0.2	0.3	0.5	0.5	0.4	0.4	0.5	0.6	0.3	0.4	0.6
(10)	Natural Gas -Total	%	33.1	34.8	39.3	43.7	46.3	48.9	49.0	51.1	56.4	60.0	63.4	63.9
(11)	Steam	%	7.2	4.5	5.2	4.6	4.2	4.0	3.8	3.4	3.1	3.2	2.4	2.4
(12)	CC	%	24.9	29.3	32.6	38.4	41.7	44.8	45.0	47.5	53.2	56.7	60.9	61.4
(13)	CT	%	1.0	1.0	1.5	0.7	0.5	0.1	0.3	0.2	0.2	0.1	0.1	0.1
(14)	Other 3/	%	8.8	8.9	7.6	6.3	5.3	5.2	5.3	5.2	4.7	4.2	4.2	4.0
			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 1/ 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	Reserve Margin Before Maintenance 5/ % of Peak	Scheduled Maintenance MW	Reserve Margin After Maintenance 6/ MW	Reserve Margin After Maintenance 6/ % of Peak
2004	19,130	2,667	0	880	22,677	20,297	1,510	18,787	3,890	20.7	0	3,890	20.7
2005	21,021	2,257	0	870	24,148	20,799	1,589	19,210	4,938	25.7	0	4,938	25.7
2006	21,020	2,257	0	734	24,011	21,331	1,667	19,664	4,347	22.1	0	4,347	22.1
2007	22,162	1,312	0	734	24,208	21,851	1,744	20,107	4,101	20.4	0	4,101	20.4
2008	22,486	1,312	0	734	24,532	22,289	1,822	20,467	4,065	19.9	0	4,065	19.9
2009	23,630	1,312	0	683	25,625	22,784	1,897	20,887	4,738	22.7	0	4,738	22.7
2010	23,630	1,312	0	640	25,582	23,294	1,922	21,372	4,210	19.7	0	4,210	19.7
2011	24,774	1,312	0	595	26,681	23,783	1,922	21,861	4,820	22.0	0	4,820	22.0
2012	25,918	1,312	0	595	27,825	24,279	1,922	22,357	5,468	24.5	0	5,468	24.5
2013	25,918	1,312	0	595	27,825	24,784	1,922	22,862	4,963	21.7	0	4,963	21.7

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
2003/04	20,356	2,345	0	880	23,581	20,081	1,561	18,520	5,061	27.3	0	5,061	27.3
2004/05	19,993	2,339	0	870	23,202	20,583	1,615	18,968	4,234	22.3	0	4,234	22.3
2005/06	22,390	2,339	0	734	25,463	21,100	1,670	19,430	6,033	31.0	0	6,033	31.0
2006/07	22,389	2,339	0	734	25,462	21,605	1,723	19,882	5,580	28.1	0	5,580	28.1
2007/08	23,569	1,321	0	734	25,624	22,046	1776	20,270	5,354	26.4	0	5,354	26.4
2008/09	23,931	1,321	0	734	25,986	22,539	1,828	20,711	5,275	25.5	0	5,275	25.5
2009/10	25,112	1,321	0	683	27,116	23,026	1,873	21,153	5,963	28.2	0	5,963	28.2
2010/11	25,112	1,321	0	595	27,028	23,522	1,873	21,649	5,379	24.8	0	5,379	24.8
2011/12	26,293	1,321	0	595	28,209	24,024	1,873	22,151	6,058	27.3	0	6,058	27.3
2012/13	27,474	1,321	0	595	29,390	24,535	1,873	22,662	6,728	29.7	0	6,728	29.7

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														
2004														
Turkey Point	1	Dade County 27/57S/40E	ST	FO6	NG	WA	PL	Unknown	Jun-04	Unknown	402,050	(4)	(4)	OT
Lauderdale	4	Broward County 30/50S/42E	CC	NG	FO2	PL	PL	Unknown	Jun-04	Unknown	521,250	(3)	(3)	OT
Port Everglades	4	City of Hollywood 23/50S/42E	ST	FO6	NG	WA	PL	Nov-03	Jun-04	Unknown	402,050	3	2	OT
Riviera	3	City of Riviera Beach 33/42S/43E	ST	FO6	NG	WA	PL	Unknown	Jun-04	Unknown	310,420	1	1	OT
Martin	1	Martin County 29/29S/38E	ST	NG	FO6	PL	PL	Unknown	Jun-04	Unknown	863,000	—	4	OT
Martin	2	Martin County 29/29S/38E	ST	NG	FO6	PL	PL	Unknown	Jun-04	Unknown	863,000	(17)	(4)	OT
Martin	3	Martin County 29/29S/38E	CC	NG	No	PL	No	Unknown	Jun-04	Unknown	612,000	1	6	OT
Martin	4	Martin County 29/29S/38E	CC	NG	No	PL	No	Unknown	Jun-04	Unknown	612,000	1	6	OT
Martin	8	Martin County 29/29S/38E	CT	NG	FO2	PL	PL	Unknown	Jun-04	Unknown	362,000	1	8	OT
Cape Canaveral	1	Brevard County 19/24S/36F	ST	FO6	NG	WA	PL	Unknown	Jun-04	Unknown	402,050	(4)	(4)	OT
Cape Canaveral	2	Brevard County 19/24S/36F	ST	FO6	NG	WA	PL	Unknown	Jun-04	Unknown	402,050	(4)	(4)	OT
Sanford	4	Volusia County 16/19S/30E	CC	NG	No	PL	No	Apr-04	Jun-04	Unknown	436,100	14	13	OT
Sanford	5	Volusia County 16/19S/30E	CC	NG	No	PL	No	Nov-03	Jun-04	Unknown	436,100	14	13	OT
Manatee	1	Manatee County 18/33S/20E	ST	FO6	No	WA	No	Unknown	Jun-04	Unknown	863,300	(4)	—	OT
Manatee	2	Manatee County 18/33S/20E	ST	FO6	No	WA	No	Unknown	Jun-04	Unknown	863,300	(4)	—	OT
Fort Myers	2	Lee County 35/43S/25E	CC	NG	No	WA	No	Apr-04	Jun-04	Unknown	402,000	15	45	OT
Fort Myers	3	Lee County 35/43S/25E	CT	NG	FO2	PL	PL	Apr-04	Jun-04	Unknown	362,000	(5)	6	OT
Fort Myers CT		Lee County 35/43S/25E	CT	FO2	No	WA	No	Unknown	Jun-04	Unknown	744,000	16	(12)	OT
									2004 Changes/Additions Total:			**21**	**74**	
2005														
Pt Everglades	2	City of Hollywood 23/50S/42E	ST	FO6	NG	WA	PL	Unknown	Mar-05	Unknown	225,000	—	(1)	OT
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	12/1/2004	190,000	(182)	(161)	OT
Martin Combustion Turbine Conv.	8B	Martin County 29/29S/38E	CT	NG	FO2	PL	PL	Jun-99	Jun-01	12/1/2004	190,000	(182)	(161)	OT
									2005 Changes/Additions Total:			**(363)**	**1,891**	

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 2004 reflect changes/additions from values shown in Schedule 1.

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														
Pt Everglades	2	City of Hollywood 23/50S/42E	ST	FO6	NG	WA	PL	Unknown	Mar-05	Unknown	225,000	(1)	--	OT
Pt Everglades	1	City of Hollywood 23/50S/42E	ST	FO6	NG	WA	PL	Unknown	Sep-05	Unknown	225,250	(1)	(1)	OT
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:			2,397	(1)	
2007														
Pt Everglades	3	City of Hollywood 23/50S/42E	ST	FO6	NG	WA	PL	Unknown	Mar-07	Unknown	402,050		(1)	OT
Pt Everglades	4	City of Hollywood 23/50S/42E	ST	FO6	NG	WA	PL	Unknown	Sep-06	Unknown	402,050	(1)	(1)	OT
Turkey Point CC	5	Dade County 27/57S/40E	CC	NG	FO2	PL	PL	Jan-05	Jun-07	Unknown	470,000	--	1,144	P
									2007 Changes/Additions Total:			(1)	1,142	
2008														
Pt Everglades	3	City of Hollywood 23/50S/42E	ST	FO6	NG	WA	PL	Unknown	Mar-07	Unknown	402,050	(1)	--	OT
Turkey Point CC	5	Dade County 27/57S/40E	CC	NG	FO2	PL	PL	Jan-05	Jun-07	Unknown	470,000	1,181	--	P
Combustion Turbines at Midway	1&2	St Lucie 36S/39E/10	CT	NG	FO2	PL	PL	Jan-06	Jun-08	Unknown	190,000	--	324	P
									2008 Changes/Additions Total:			1,180	324	
2009														
Combustion Turbines at Midway	1&2	St Lucie 36S/39E/10	CT	NG	FO2	PL	PL	Jan-06	Jun-08	Unknown	190,000	362	--	P
Combined Cycle at Corbett	1	Palm Beach 43S/40E/29	CC	NG	FO2	PL	PL	Jan-07	Jun-09	Unknown	470,000	--	1,144	P
									2009Changes/Additions Total:			362	1,144	
2010														
Combined Cycle at Corbett	1	Palm Beach 43S/40E/29	CC	NG	FO2	PL	PL	Jan-07	Jun-09	Unknown	470,000	1,181	--	P
									2010 Changes/Additions Total:			1,181	0	
2011														
Unsited Combined Cycle Unit	1	Unknown	CC	NG	FO2	PL	PL	Jan-09	Jun-11	Unknown	470,000	--	1,144	P
									2011 Changes/Additions Total:			0	1,144	
2012														
Unsited Combined Cycle Unit	1	Unknown	CC	NG	FO2	PL	PL	Jan-09	Jun-11	Unknown	470,000	1,181	--	P
Unsited Combined Cycle Unit	2	Unknown	CC	NG	FO3	PL	PL	Jan-10	Jun-12	Unknown	470,001	--	1,144	P
									2012 Changes/Additions Total:			1,181	1,144	
2013														
Unsited Combined Cycle Unit	2	Unknown	CC	NG	FO2	PL	PL	Jan-10	Jun-12	Unknown	470,000	1,181	--	P
									2013 Changes/Additions Total:			1,181	0	

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:** Martin Combustion Turbine Conversion to Combined Cycle

(2) **Capacity**
a. Summer 785 MW Incremental (1107 MW Total)
b. Winter 835 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 Tower

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

(9) **Construction Status:** U (Under Construction <= 50% Complete)

(10) **Certification Status:** U (Under Construction <= 50% Complete)

(11) **Status with Federal Agencies:** U (Under Construction <= 50% Complete)

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

Planned Outage Factor (POF):	2%	
Forced Outage Factor (FOF):	1%	
Equivalent Availability Factor (EAF):	97%	(Base & Duct Firing Operation)
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 $/kW):		589
Direct Construction Cost ($/kW):		
AFUDC Amount ($/kW):		
Escalation ($/kW):		
Fixed O&M ($/kW -Yr.):	(2001 $kW-Yr)	9.11
Variable O&M ($/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, but not firm gas transportation costs.

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:** 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:** U (Under Construction <= 50% Complete)

(10) **Certification Status:** U (Under Construction <= 50% Complete)

(11) **Status with Federal Agencies:** U (Under Construction <= 50% Complete)

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

Planned Outage Factor (POF):	2%	
Forced Outage Factor (FOF):	1%	
Equivalent Availability Factor (EAF):	97%	(Base & Duct Firing Operation)
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, but not firm gas transportation costs.

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:** Turkey Point Combined Cycle

(2) **Capacity**
a. Summer 1,144 MW
b. Winter 1,181 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 0.0015% S. Distillate, & Water Injection on Distillate

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

(8) **Total Site Area:** 11000 Acres

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

(10) **Certification Status:** L (Regulatory Approval Pending)

(11) **Status with Federal Agencies:** L (Regulatory Approval Pending)

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

Planned Outage Factor (POF):	2%	
Forced Outage Factor (FOF):	1%	
Equivalent Availability Factor (EAF):	97%	(Base & Duct Firing Operation)
Resulting Capacity Factor (%):	Approx. 80%	(First Year)
Average Net Operating Heat Rate (ANOHR):	6,835 Btu/kWh	(Base Operation)

Base Operation 75F,100%

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

Book Life (Years):	25	years
Total Installed Cost (In-Service Year $/kW):	507	
Direct Construction Cost ($/kW):		
AFUDC Amount ($/kW):		
Escalation ($/kW):		
Fixed O&M ($/kW -Yr.): (2007 $kW-Yr)	10.06	
Variable O&M ($/MWH): (2007 $/MWH)	0.13	
K Factor:	1.5699	

* $/kW values are based on Summer capacity.
** Fixed O&M cost includes capital replacement, but not firm gas transportation costs.

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:** Midway SC No. 1

(2) **Capacity**
a. Summer 324 MW
b. Winter 362 MW

(3) **Technology Type:** Simple 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 0.0015% S. Distillate, & Water Injection on Distillate

(7) **Cooling Method:** Unknown

(8) **Total Site Area:** 75 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%	(Base Operation)
Resulting Capacity Factor (%):	Approx. 15%	(First Year Base Operation)
Average Net Operating Heat Rate (ANOHR):	10,400 Btu/kWh	(Base Operation)

Base Operation 75F,100%

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

Book Life (Years):	25 years	
Total Installed Cost (In-Service Year $/kW):	448	
Direct Construction Cost ($/kW):		
AFUDC Amount ($/kW):		
Escalation ($/kW):		
Fixed O&M ($/kW -Yr.):	(2008 $kW-Yr)	12.78
Variable O&M ($/MWH):	(2008 $/MWH)	0.18
K Factor:		Approx. 1.6

* $/kW values are based on Summer capacity.
** Fixed O&M cost includes capital replacement. (Firm gas transportation cost are applicable for this option.)

NOTE: Total installed cost includes escalation and AFUDC only.
Transmission interconnection, transmission integration and gas expansion costs are not included.

Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** Corbett Combined Cycle No. 1

(2) **Capacity**
a. Summer 1,144 MW
b. Winter 1,181 MW

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

(4) **Anticipated Construction Timing**
a. Field construction start-date: 2007
b. Commercial In-service date: 2009

(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 0.0015% S. Distillate, & Water Injection on Distillate

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

(8) **Total Site Area:** 220 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%	(Base & Duct Firing Operation)
Resulting Capacity Factor (%):	Approx. 70%	(First Year Base Operation)
Average Net Operating Heat Rate (ANOHR): Base Operation 75F,100%	6,835 Btu/kWh	(Base Operation)

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

Book Life (Years):	25 years	
Total Installed Cost (In-Service Year $/kW):	538	
Direct Construction Cost ($/kW):		
AFUDC Amount ($/kW):		
Escalation ($/kW):		
Fixed O&M ($/kW -Yr.):	(2009 $kW-Yr)	13.44
Variable O&M ($/MWH):	(2009 $/MWH)	0.20
K Factor:		Approx. 1.6

* $/kW values are based on Summer capacity.
** Fixed O&M cost includes capital replacement, but not firm gas transportation costs.

NOTE: Total installed cost includes escalation and AFUDC only.
Transmission interconnection, transmission integration and gas expansion costs are not included.

Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** Unsited Combined Cycle No. 1

(2) **Capacity**
a. Summer 1,144 MW
b. Winter 1,181 MW

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

(4) **Anticipated Construction Timing**
a. Field construction start-date: 2009
b. Commercial In-service date: 2011

(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 0.0015% 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%	(Base & Duct Firing Operation)
Resulting Capacity Factor (%):	Approx. 65%	(First Year Base Operation)
Average Net Operating Heat Rate (ANOHR):	6,835 Btu/kWh	(Base Operation)

Base Operation 75F,100%

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

Book Life (Years):	25 years	
Total Installed Cost (In-Service Year $/kW):	577	
Direct Construction Cost ($/kW):		
AFUDC Amount ($/kW):		
Escalation ($/kW):		
Fixed O&M ($/kW -Yr.):	(2011 $kW-Yr)	14.26
Variable O&M ($/MWH):	(2011$/MWH)	0.21
K Factor:		Approx. 1.6

* $/kW values are based on Summer capacity.
** Fixed O&M cost includes capital replacement, but not firm gas transportation costs.

NOTE: Total installed cost includes escalation and AFUDC only.
Transmission interconnection, transmission integration and gas expansion costs are not included.

Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** Unsited Combined Cycle No. 2

(2) **Capacity**
a. Summer 1,144 MW
b. Winter 1,181 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 0.0015% 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%	(Base & Duct Firing Operation)
Resulting Capacity Factor (%):	Approx. 65%	(First Year Base Operation)
Average Net Operating Heat Rate (ANOHR):	6,835 Btu/kWh	(Base Operation)
Base Operation 75F,100%		

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

Book Life (Years):	25 years	
Total Installed Cost (In-Service Year $/kW):	594	
Direct Construction Cost ($/kW):		
AFUDC Amount ($/kW):		
Escalation ($/kW):		
Fixed O&M ($/kW -Yr.): (2012 $kW-Yr)	14.69	
Variable O&M ($/MWH): (2012 $/MWH)	0.21	
K Factor:	Approx. 1.6	

* $/kW values are based on Summer capacity.
** Fixed O&M cost includes capital replacement, but not firm gas transportation costs.

NOTE: Total installed cost includes escalation and AFUDC only.
Transmission interconnection, transmission integration and gas expansion costs are not included.

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: 1/5/04 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: 3/15/04 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

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Turkey Point 5 CC

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

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Midway CT 1a and 1b

The new Midway CTs do not require any "new" transmission lines.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Corbett CC

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

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 FPL's service area is continuing, which increases 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 its commitment to the environment. FPL's 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. In recognition of its success in executing a strategy to become a clean energy provider harnessing primarily clean and renewable fuels while also boosting shareholder value, FPL Group, Inc. was named in June 2003 as the winner of the Edison Award, the electric power industry's highest honor by the Edison Electric Institute. FPL was also awarded Edison Electric Institute's National Land Management Award for its stewardship of 25,000 acres surrounding the Turkey Point Plant. In addition, FPL won the Council for Sustainable Florida's award for its sea turtle conservation and education programs at the St. Lucie Plant. In 2001, FPL was awarded the 2001 Waste Reduction and Pollution Prevention Award from the Solid Waste Association of North America. FPL 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 its emission-reducing "repowering" projects at the Fort Myers and Sanford Plants. In addition, FPL has been recognized by numerous federal and state agencies for its 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.

In February 2004 FPL Group voluntarily committed to join the World Wildlife Fund PowerSwitch Challenge in support of binding limits on national CO2 emissions. This commitment was made to support initiatives to better manage utility impacts on global warming through use of greenhouse gas emission reductions and improvements in energy efficiency.

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 2003 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	185,000
Number of pieces of Environmental literature distributed	>100,000

Table IV.E.1

(All numbers are approximations.)

IV.F. Preferred Sites

FPL identifies three preferred sites in this Site Plan: the existing Manatee plant site, the existing Martin plant site, and the existing Turkey Point plant site. The Manatee and Martin sites are the locations for capacity additions that FPL is committed to bring in-service in 2005. The Turkey Point site is the location for FPL's planned new Turkey Point Unit No. 5 which is projected to come in-service in 2007.

The three preferred sites are discussed below.

Preferred Site # 1: 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 1,630 MW (Summer) of generating capacity is made up of two steam units (Units No. 1 and No. 2) which have been in service since 1976 (Unit No. 1) and 1977 (Unit No. 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 natural gas for these units.

Additional generating capacity will be added to the site in 2005 to meet projected FPL system capacity needs. One unit consisting of 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 No. 3".

Unit No. 3 will be located west of the existing generating Units No. 1 and No. 2. The location of the new combined cycle Unit No. 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 listed as a preferred or potential site in previous FPL Site Plans.

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

A USGS map of the Manatee 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 4,000 acre cooling pond. Manatee Units No. 1 and No. 2 will not be affected by the addition of Unit No. 3. The area for Unit No. 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 No. 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, feral 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 No. 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 No. 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 No. 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 No. 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 No. 3 (as well as Units No. 1 and No. 2) 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 this site does not exhibit significant environmental sensitivity or other environmental issues and the site is permitted.

i. Water Resources

The available surface water source is the Little Manatee River that 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 hydro-geologic 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 Quaternary deposits of predominately marine and non-marine quartz sand, clayey sand, shell, shelly marl, phosphorite, and occasional marl stringers 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 for process water is estimated to be 150 gpm (gallons per minute). FPL operates on-site water treatment systems for this use. 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 No. 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 an 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 are 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 No. 1 and No. 2. The Unit No. 3 addition will be solely fueled by natural gas that will be supplied by Gulfstream.

p. Air Emissions and Control Systems

The addition of natural gas as a permitted fuel for existing Units No. 1 and No. 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, re-burn, has been approved for installation on Units No. 1 and No. 2 within the next several years.

The use of clean fuels and combustion controls will minimize air emissions from Unit No. 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 (BACT) 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

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**

FPL filed the Site Certification Application (SCA) for the Manatee Plant Unit No. 3 with the Florida Department of Environmental Protection (FDEP) on February 20, 2002, and received approval and Site Certification by the Governor and Cabinet in April, 2003. FPL acquired all permits needed and commenced construction in May, 2003. Modifications to operating permits will be pursued as necessary through 2004.

Preferred Site # 2: 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 2,906 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 No. 1 and No. 2), plus two combined cycle units (Units No. 3 and No. 4), and two combustion turbine units (Units No. 8a and No. 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. These two CT's will be converted into one 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 No. 8. It is estimated to be in service in mid-2005 adding approximately 785 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 Environmental 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 preserved. 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 No. 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 include the capture and reuse of plant process water and rainwater, plus the use of a cooling tower. 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 and 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 this site does not exhibit significant environmental sensitivity or other environmental issues. This site is 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 No. 1 and No. 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 process water is 150 gallons per minute (gpm). FPL operates on-site water treatment systems for this use. Cooling water for new Unit No. 8 will be cycled through new cooling towers and approximately 7 million gallons per day for makeup water to the cooling tower will be needed. (The two existing CT's that will be converted into combined cycle operation are currently air-cooled.) Makeup water for the cooling pond is taken from the St. Lucie canal. The current makeup water quantity to the cooling pond is adequate for Unit No. 8.

l. Water Supply Sources by Type

Martin Unit No. 8 will utilize the existing on-site cooling pond as the source of makeup water for the cooling towers. 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 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 No. 1 and No. 2 boilers, as well as for the HRSG's associated with Units No. 3 and No. 4, will be used to provide treated water for Unit No. 8.

m. **Water Conservation Strategies Under Consideration**

The entire plant site captures and reuses process water whenever feasible and manages storm-water in such a manner so as to recharge the surficial aquifer.

n. **Water Discharges and Pollution Control**

Water discharges from the facility are minimized by collecting and treating most point sources into the existing cooling pond. Discharges from the cooling pond are infrequent and only occur for the protection of the cooling pond embankment. Collected sources of water include equipment wash water, boiler blowdown water, and equipment area runoff. Non-contact storm water runoff is collected and treated 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. Three pipelines will serve the site. One pipeline is the FPL-owned north lateral from Florida Gas Transmission (FGT). A second pipeline is the FPL-owned south lateral dual purpose (oil and gas) pipeline which supplies oil to the steam boilers from the oil terminal on 45th Street and is interconnected with FGT. The third pipeline is a Gulfstream-owned lateral that will be constructed as part of the Unit No. 8 Conversion Project. Distillate fuel oil is received by truck and stored in above ground storage tanks. An additional above ground storage tank is being constructed to serve Unit No. 8.

p. Air Emissions and Control Systems

The use of clean fuels and combustion controls will minimize air emissions from Unit No. 8 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 BACT for air emissions, and minimize such emissions while balancing economic, environmental, and energy impacts. Martin Unit # 8 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

A field survey and impact assessment of noise expected to be caused by unit construction at the site indicated that construction noise would be within allowable levels. 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. In 2000, FPL added two CT's operating in simple cycle mode via an amendment to the initial certification to the site. Now, in order to convert the two CT's from simple cycle to 4X1 CC configuration (Unit No. 8), a modification to the Site Certification was required. FPL filed the modification on February 1, 2002 with the Florida Department of Environmental Protection

(FDEP). Approval and Site Certification was issued by the Governor and Cabinet in April, 2003. FPL acquired all construction permits and commenced construction in May, 2003. Modifications to operating permits will be pursued as necessary. Unit No. 8 will be in-service by June, 2005.

Preferred Site # 3: Turkey Point Plant, Miami-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. Public 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 two nuclear and two conventional fossil fuel boiler units and the cooling canals. Adjacent to the plant site is an FPL-owned and operated mitigation bank known as the Everglades Mitigation Bank (EMB) covering approximately 13,000 acres.

Existing Units No. 1 and No. 2 are fossil fuel generating plants with approximate generating capacity of 400 MW each. Unit No. 1 was completed in 1967 and Unit No. 2 in 1968. Existing Units No. 3 and No. 4 are nuclear generating units with approximate generating capacity of 690 MW each. Unit No. 3 was completed in 1972 and Unit No. 4 in 1973. 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.

The proposed Expansion Site for the location of new Turkey Point Unit No. 5, a 4x1 CC unit, is within the existing FPL Turkey Point facility property. The Expansion Site

is adjacent to the existing fossil Units No. 1 and No. 2, and includes the existing parking lot and storage areas immediately northwest of Units No. 1 and No. 2 as well as wetlands north of the facility.

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

A USGS map of the Turkey Point 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.

d. Existing Land Uses of Site and Adjacent Areas

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. South of and adjacent to the fossil plant are the two nuclear generating units. Further to the south exists the EMB previously discussed.

e. General Environment Features On and In the Site Vicinity

1. Natural Environment

The majority of the proposed Expansion Site is undeveloped dwarf red mangrove swamp, tidally inundated with waters from Biscayne Bay. Along with the dominant red mangroves, buttonwood is a common canopy component, along with occasional white mangrove. Only a few individual black mangroves were observed within the Site. Biscayne Bay is a shallow, subtropical bay supporting sea grasses, sponges, coral reefs, and a variety of marine life.

2. Listed Species

The construction and operation of Unit No.5 is not expected to adversely affect any rare, endangered, or threatened species. One species listed by the FFWCC as a species of special concern was observed on the Expansion Site, the white ibis (Eudocimus albus). Listed species known to occur in the nearby Biscayne National Park that could potentially utilize the Expansion Site include the peregrine falcon (Falco peregrinus), wood stork (Mycteria americana), American crocodile (Crocodylus acutus), mangrove rivulus (Rivulus marmoratus), roseate spoonbill (Ajaja ajaja), limpkin (Aramus guarauna), little blue heron (Egretta caerulea), snowy egret (Egretta thula), American oystercatcher (Haematopus palliates), least tern (Sterna antillarum), brown pelican (Pelicanus occidentalis), and bald eagle (Haliaeetus leucocephalus). The FFWCC's bald eagle nest locator database was queried and resulted in no known nests in the vicinity of the Expansion Site. The federally listed, endangered American Crocodile thrives

at the Turkey Point site, primarily in and around the southern end of the cooling canals which lie south of the proposed Expansion Site. The entire site is considered crocodile habitat due to the mobility of the species and use of the site for foraging, traversing, and basking. FPL manages a program for the conservation and enhancement of the American crocodile. A Project-specific crocodile management plan has been developed for construction of Unit No. 5.

3. Natural Resources of Regional Significance Status

Significant features in the vicinity of the proposed Expansion Site include Biscayne National Park, the Miami-Dade County Homestead Bayfront Park, and the Everglades National Park. Biscayne National Park contains 180,000 acres, approximately 95% of which is open water interspersed with over 40 keys. The Biscayne National Park headquarters is located approximately 2 miles north of the Turkey Point plant, adjacent to the Miami-Dade County Homestead Bayfront Park, which contains a marina and day use recreational facilities.

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 one new unit consisting of four new CT's and four new HRSG's and a new steam turbine that will comprise Turkey Point Unit No. 5. This unit is scheduled to be in-service in mid-2007. Natural gas delivered via pipeline is

the primary fuel type for this unit (with ultra low sulfur light oil serving as a backup fuel). Natural gas-fired facilities are among the cleanest, most efficient technologies currently available.

Mitigation options for unavoidable wetland impacts related to construction of Unit No. 5 that are being considered include on site hydrologic improvements to enhance existing wetlands, restoration and preservation of areas overgrown with exotic plant species, the purchase of mitigation credits from the EMB which is in the same drainage basin, and land preservation. Additional mitigating options 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 plan designates most of the site as IU-3 "Industrial, Unlimited Manufacturing District." There are also areas designated GU – "Interim District." Designations for the surrounding area are primarily GU – "Interim District."

h. Site Selection Criteria and Process

For the past several years, a number of FPL's existing power plant sites have been considered as potentially suitable sites for new or re-powered generation. The Turkey Point plant has been selected as a preferred site due to consideration of various factors including system load, imbalances between load and generation in Southeast Florida, and economics. Recognizing that this site represents valued and sensitive environmental resources. FPL will give significant attention to minimizing

environmental impacts and mitigating where impacts are unavoidable. This site is considered permittable.

i. **Water Resources**

Unique to Turkey Point Plant is the cooling canal system that supplies water to condense steam used by the plant's turbine generators. The canal system consists of 36 interconnected canals each five miles long, 200 feet wide and four feet deep. Water circulates through the 153-mile maze of canals in a two-day cycle, ending at the plant's intake pumps and cooling by as much as 15 degrees F.

However, FPL anticipates using a closed cooling system (cooling tower) for the new Unit No. 5 that uses forced air to cool the warm water coming off the generating equipment.

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

FPL's Turkey Point site is underlain by approximately 13,000 feet of sedimentary rock strata that forms the Biscayne aquifer. 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 of marine 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 Tamiami formation is named for deposits composed principally of white cream-colored calcareous sandstone, sandy limestone,

and beds and pockets of quartz sand. Key Largo limestone is present in the Turkey Point area.

The Floridan aquifer, located approximately 1,200 feet below the land surface, is a confined aquifer. The Floridan aquifer system is composed entirely of carbonate rocks, except for minor evaporates. The water in the carbonate rock aquifer is more highly mineralized.

k. Projected Water Quantities for Various Uses

The additional quantity of process water is estimated to average 150 gpm. Water for this use would be supplied by a county water system. Cooling water for new Unit No. 5 will be cycled through a new cooling tower and approximately 12 million gallons per day for makeup water to the cooling tower will be needed. FPL proposes to use water from the Floridan Aquifer as the source of make-up water used by the cooling towers.

l. Water Supply Sources by Type

Turkey Point Unit No. 5 will utilize the cooling towers for the dissipation of heat from the cooling water. A new water treatment plant, separate from the existing water treatment system that provides treated water for use in the boilers of Unit No. 1 and No. 2, will be constructed for Unit No. 5.

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**

Water discharges from the new unit will be minimized by collecting and treating most point sources, with the water eventually entering the existing cooling canal system. There are no surface water discharges from the cooling canal system. Collected sources of water include equipment wash water, boiler blowdown water, equipment area runoff, and storm water runoff.

Design elements have been included to capture suspended sediments. Various facility permits mandate various sampling and testing activities, which provide indication 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. There is currently a pipeline that supplies natural gas to the facility. The facility also has oil capabilities through on-site storage tanks and accessibility to barge deliveries. The additional capacity will utilize the existing pipeline with the possible addition of compression system(s). An above ground storage tank for the ultra-low sulfur back-up fuel will be added.

p. Air Emissions and Control Systems

The use of clean fuels and combustion controls will minimize air emissions from the new unit 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 nitrogen oxides (NO_x), and the combustor design will limit the formation of carbon monoxide and volatile organic compounds. When firing natural gas, NO_x emissions will be controlled using dry-low NO_x combustion technology and selective catalytic reduction (SCR). Water injection and SCR will be used to reduce NO_x emissions during CC operations when firing ultra-low sulfur backup fuel. These design alternatives constitute the BACT for air emissions, and minimize such emissions while balancing economic, environmental, and energy impacts. Taken together, the design of Turkey Point Unit No. 5 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 expected to be caused by unit construction at the site is expected to be within allowable limits. Noise from the operation of the new unit will also be within allowable levels.

r. Status of Applications

FPL filed the SCA for the Turkey Point Plant Unit No. 5 with the Florida Department of Environmental Protection (FDEP) on November 14, 2003. A federal Dredge and Fill application was submitted to the U.S. Army Corps of Engineers on November 14, 2003. The certification process and the dredge and fill permit process is expected to be completed with final review by the Governor and Cabinet in January, 2005.

Construction would commence in spring 2005 with an anticipated, in-service date of mid-2007.

IV.G. Potential Sites for Gas-Fired Generating Options

Six (6) sites are currently identified as potential sites for near-term (primarily 2008-2010) future gas-fired generation additions to meet FPL's 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 six sites. The potential sites briefly discussed below are presented in alphabetical order. At this time FPL considers each site to be equally viable.

[2] As has been described in previous FPL 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.

Potential Site # 1: Andytown Substation , Broward County

FPL has identified the Andytown Substation Property in western Broward County as a potential site for the addition of new generating capacity. Current facilities on-site include an electric substation. The existing site is an area accessible to both natural gas and electrical transmission through existing structures or through additional lateral connections.

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

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

b. and c. Land Uses and Environmental Features

The land uses for the potential site are designated as industrial or agricultural use. The site identification process included screening of potential sites to determine potential wetland impacts and impacts to endangered or threatened species. Extensive low-quality wetlands are adjacent to the site. FPL would expect to mitigate any impacts from construction of a power plant at this site. Construction and operation of a new facility on this site is not expected to adversely affect any rare, endangered, or threatened species.

d. and e. Water Quantities and Supply Sources

Surface water sources are not available at the site identified for the new plant. Groundwater from the shallow aquifer, or a local source of gray water, has been identified as potential water sources. FPL estimates that up to 12 million gallons per day of industrial processing water would be required for uses such as boiler makeup,

cooling water makeup, pollution control device usage, inlet air-cooling and service water.

Potential Site # 2: 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 provided at the end of this chapter.

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

Water sources available at the site include surface water and groundwater. Groundwater from the shallow aquifer, or surface water, has been identified as potential water sources. FPL estimates that up to 12 million gallons per day of industrial processing water would be required for uses such as boiler makeup,

cooling water makeup, pollution control device usage, inlet air-cooling and service water.

Potential Site # 3: Corbett Substation Property, Palm Beach County

FPL has identified the Corbett Substation Property in Western Palm Beach County as a potential site for the addition of new generating capacity. The existing site is an area accessible to both natural gas and electrical transmission through existing structures or through additional lateral connections.

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

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

b. and c. Land Uses and Environmental Features

The land uses for the potential sites are designated as industrial or agricultural use. The site identification process included screening of potential sites to determine potential wetland impacts and impacts to endangered or threatened species. Construction and operation of a new facility on these sites is not expected to adversely affect any rare, endangered, or threatened species.

d. and e. Water Quantities and Supply Sources

Water sources available at the site include surface water and groundwater. Groundwater from the Floridan aquifer, or surface water, has been identified as potential water sources. FPL estimates that up to 12 million gallons per day of industrial processing water would be required for uses such as boiler makeup,

cooling water makeup, pollution control device usage, inlet air-cooling and service water.

Potential Site # 4: 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

Water sources available at the site include surface water and groundwater. Groundwater from the Floridan aquifer, or surface water, has been identified as potential water sources. FPL estimates that up to 12 million gallons per day of industrial processing water would be required for uses such as boiler makeup,

cooling water makeup, pollution control device usage, inlet air-cooling and service water.

Potential Site # 5: 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 provided 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

Water sources available at the site include surface water and groundwater. Groundwater from the Floridan aquifer, or surface water, has been identified as

potential water sources. FPL estimates that up to 12 million gallons per day of industrial processing water would be required for uses such as boiler makeup, cooling water makeup, pollution control device usage, inlet air-cooling and service water.

Potential Site # 6: 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 two retired generating units.

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

A USGS map of the Riviera plant site is provided 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 Inter-coastal Waterway near the Lake Worth Inlet.

d. and e. Water Quantities and Supply Sources

Water sources available at the site include surface water and groundwater. Groundwater from the Floridan aquifer, or surface water, has been identified as potential water sources. FPL estimates that up to 12 million gallons per day of industrial processing water would be required for uses such as boiler makeup, cooling water makeup, pollution control device usage, inlet air-cooling and service water.

IV.H. Potential Sites for Solid Fuel-Fired Generating Options

As previously discussed, FPL is currently in the process of analyzing the feasibility of solid fuel-based generating options. FPL believes that the earliest a solid fuel generating option could be permitted and constructed is 2011. At the time this document was being prepared, FPL had made no decision regarding these options for 2011 – and is continuing to analyze these options.

These analyses include on-going investigations of potential sites for solid fuel options. A number of potential sites for solid fuel-based generation are being studied including sites both in and outside of Florida. The potential Florida sites are generally outside of the southeast Florida region previously discussed due to permitting and fuel transportation considerations. FPL will provide specific information regarding sites in future Site Plans if solid fuel generation options are determined to be viable options.

Environmental and Land Use Information:
Supplemental Information

Preferred Site: Manatee

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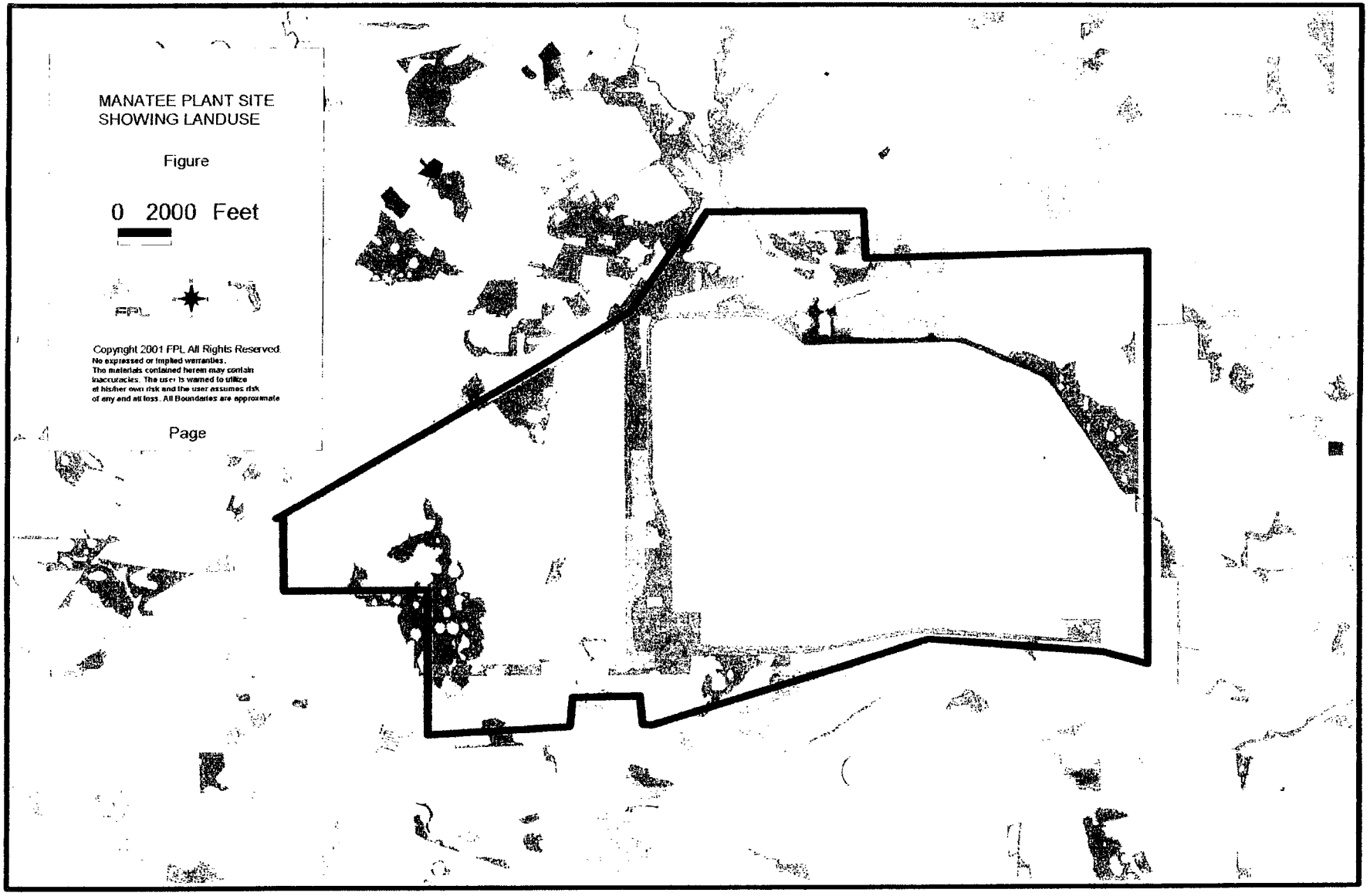
MANATEE PLANT SITE
SHOWING LANDUSE
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LEGEND FOR LANDUSE MAPS

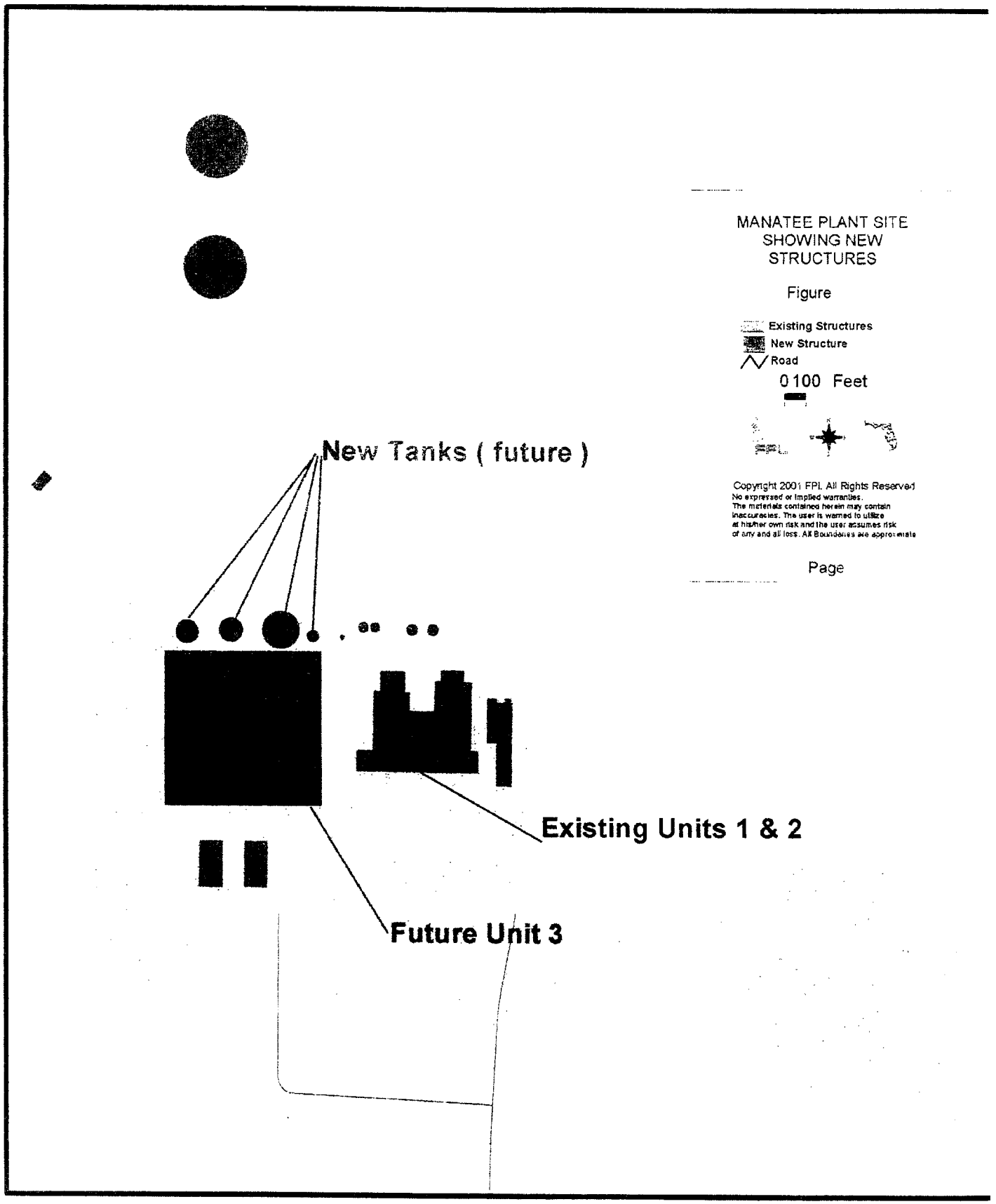
Plant Site Boundary

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

Figure

Page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SHOWING NEW
STRUCTURES
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Existing Structures
New Structure
Road
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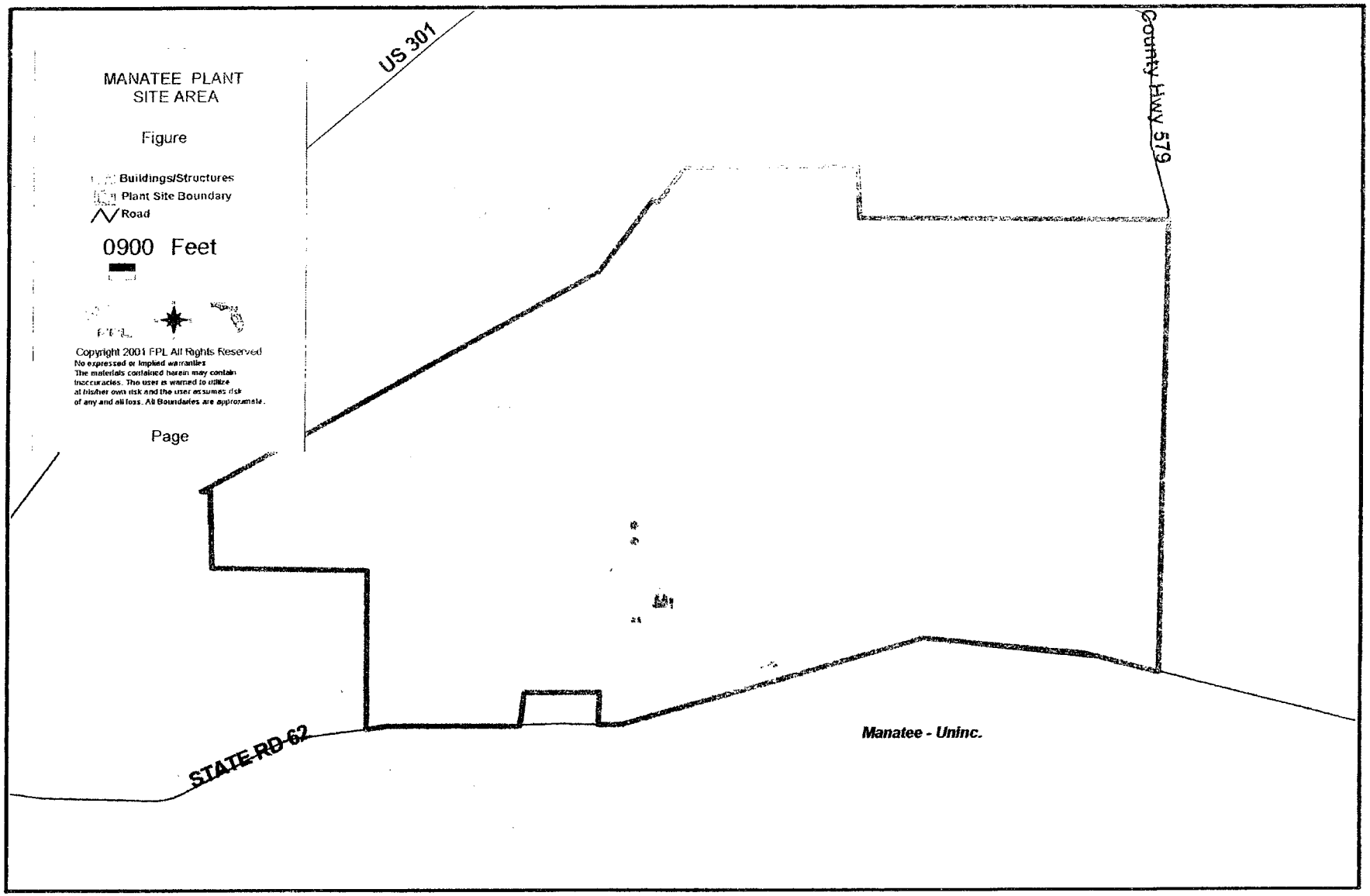
New Tanks (future)
Existing Units 1 & 2
Future Unit 3


MANATEE PLANT
SITE AREA
Figure
Buildings/Structures
Plant Site Boundary
Road
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US 301
County Hwy 579
STATE RD 62
Manatee - Uninc.

Environmental and Land Use Information:

Supplemental Information

Preferred Site: Martin

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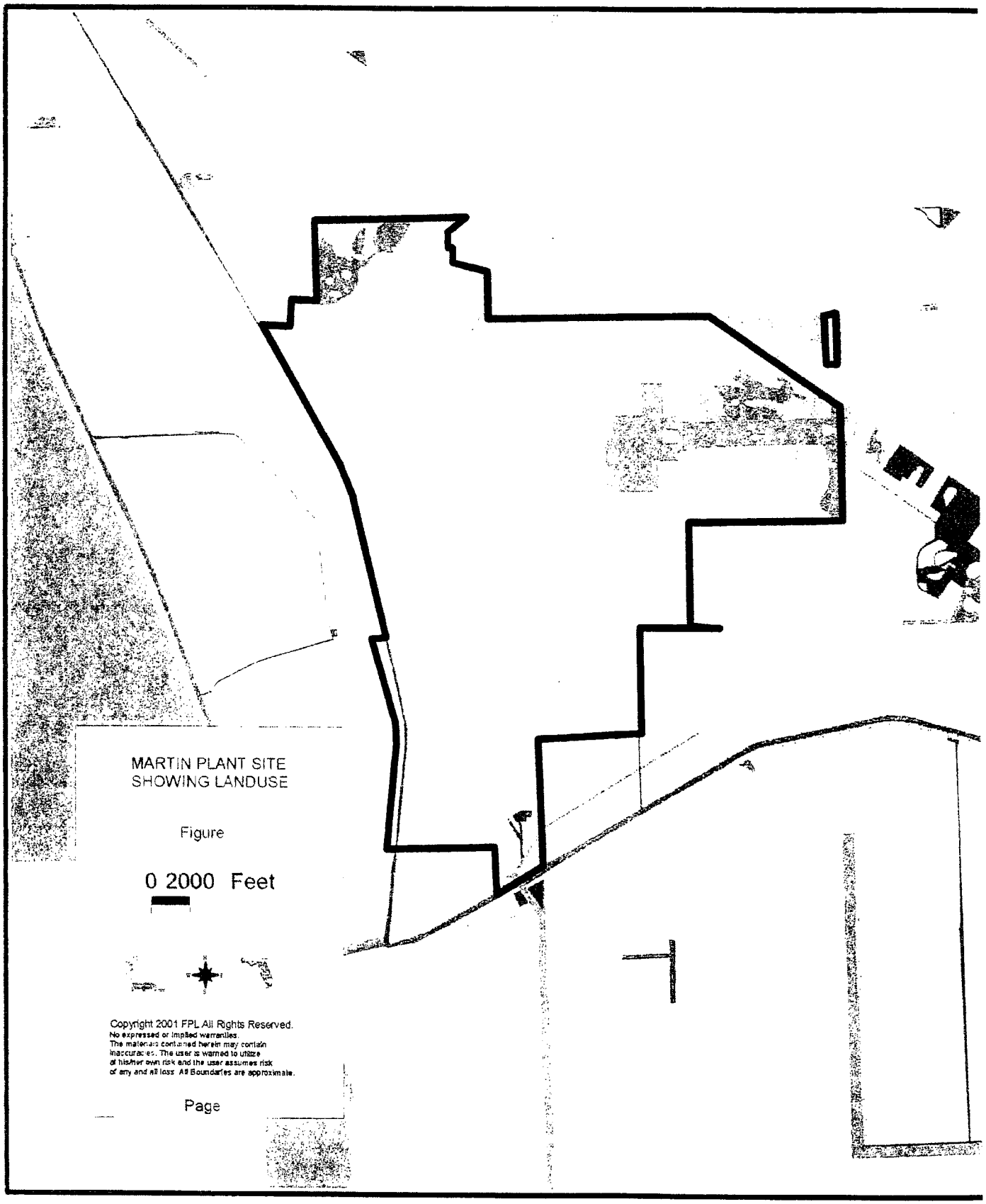
MARTIN PLANT SITE
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LEGEND FOR LANDUSE MAPS

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

Figure

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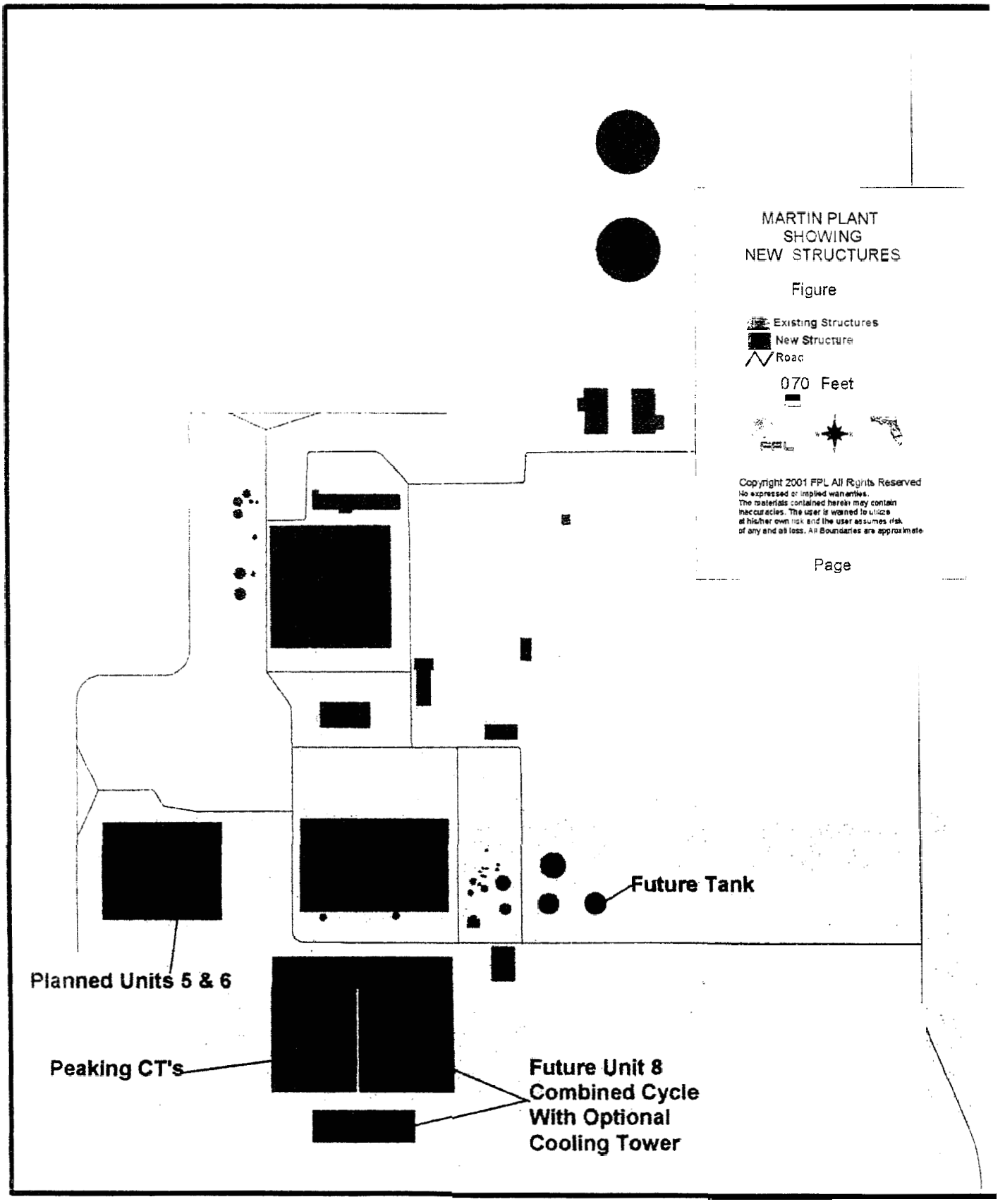
MARTIN PLANT
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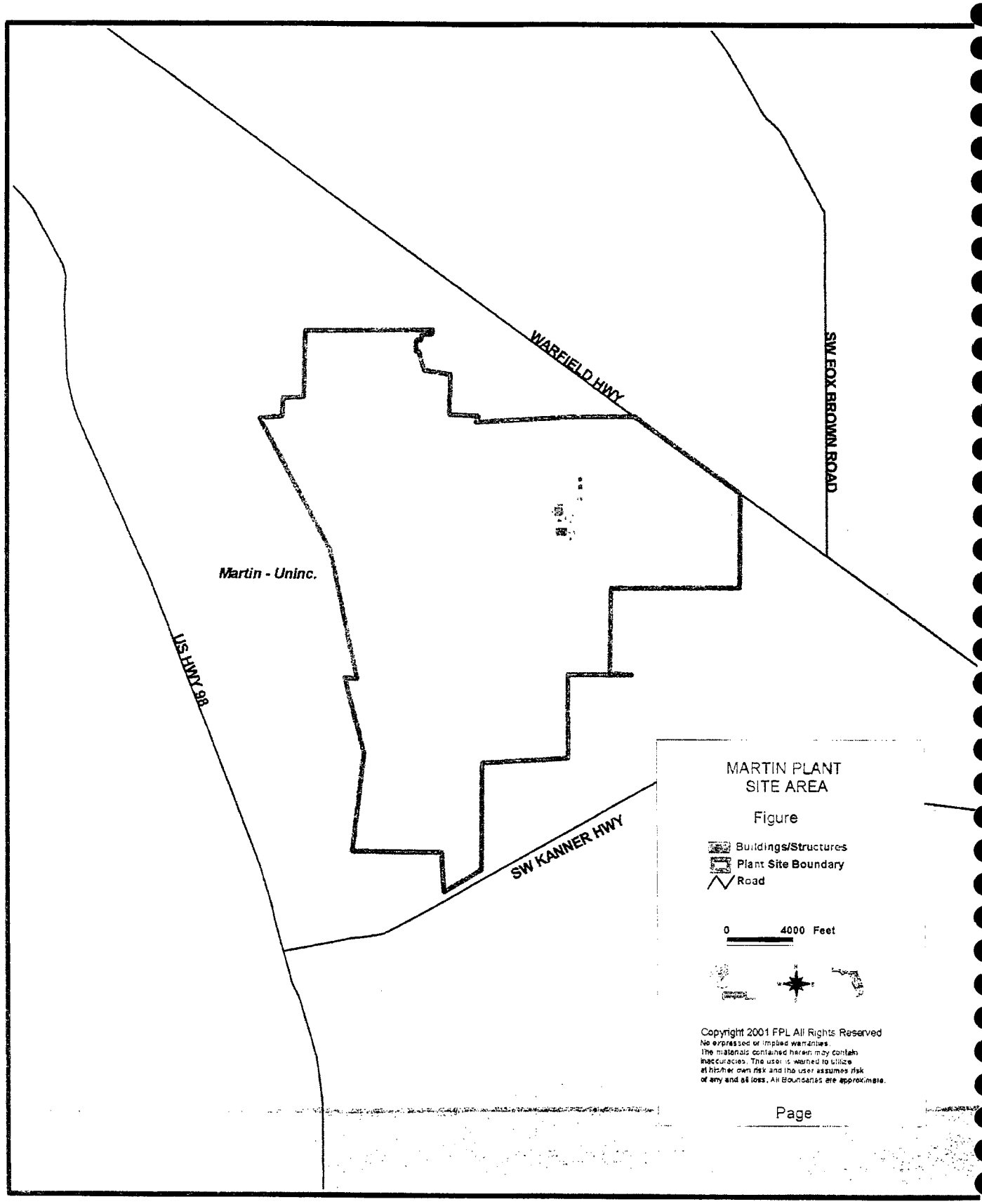
Future Tank
Planned Units 5 & 6
Peaking CT's
Future Unit 8
Combined Cycle
With Optional
Cooling Tower


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

Supplemental Information

Preferred Site: Turkey Point

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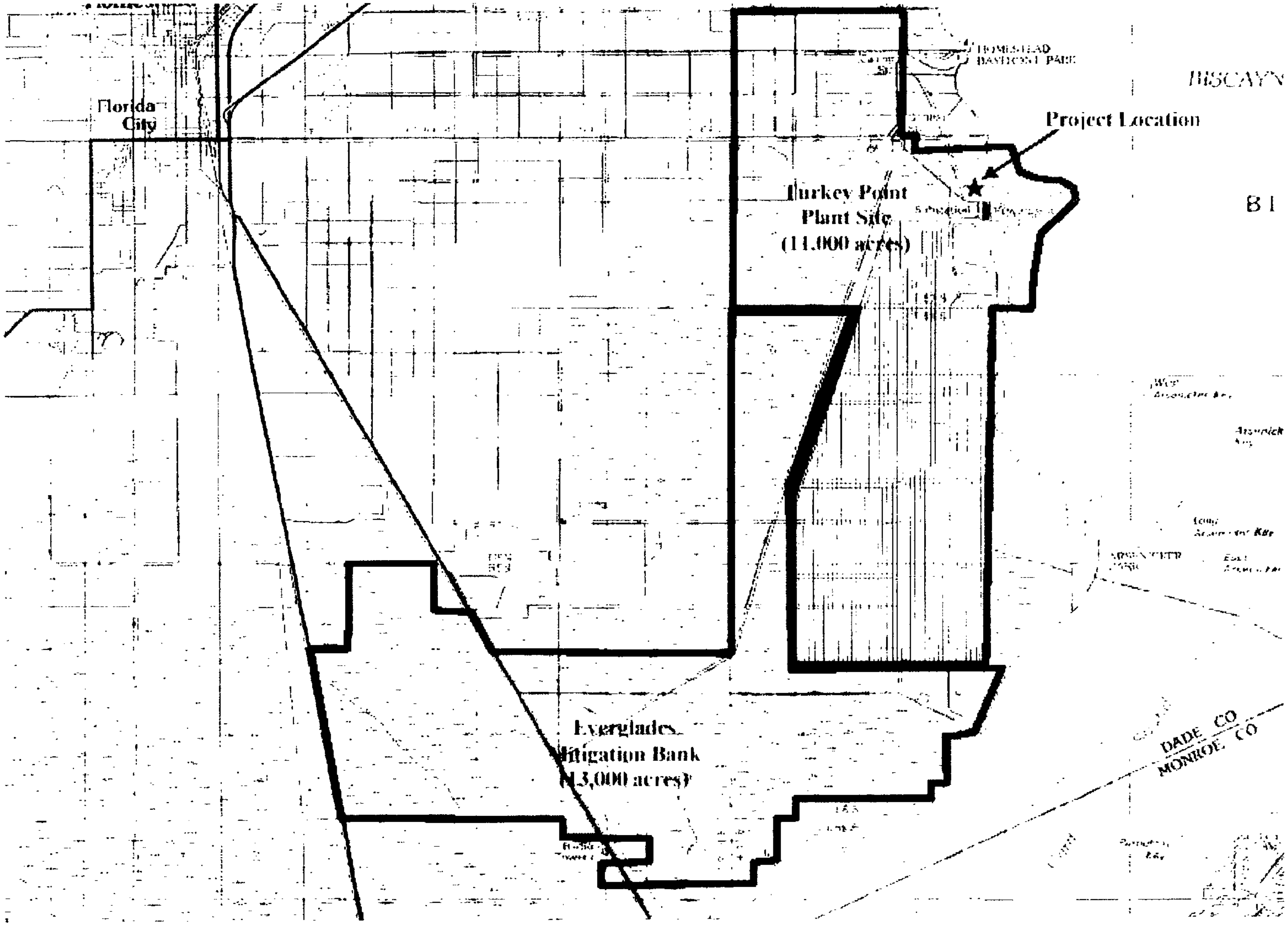
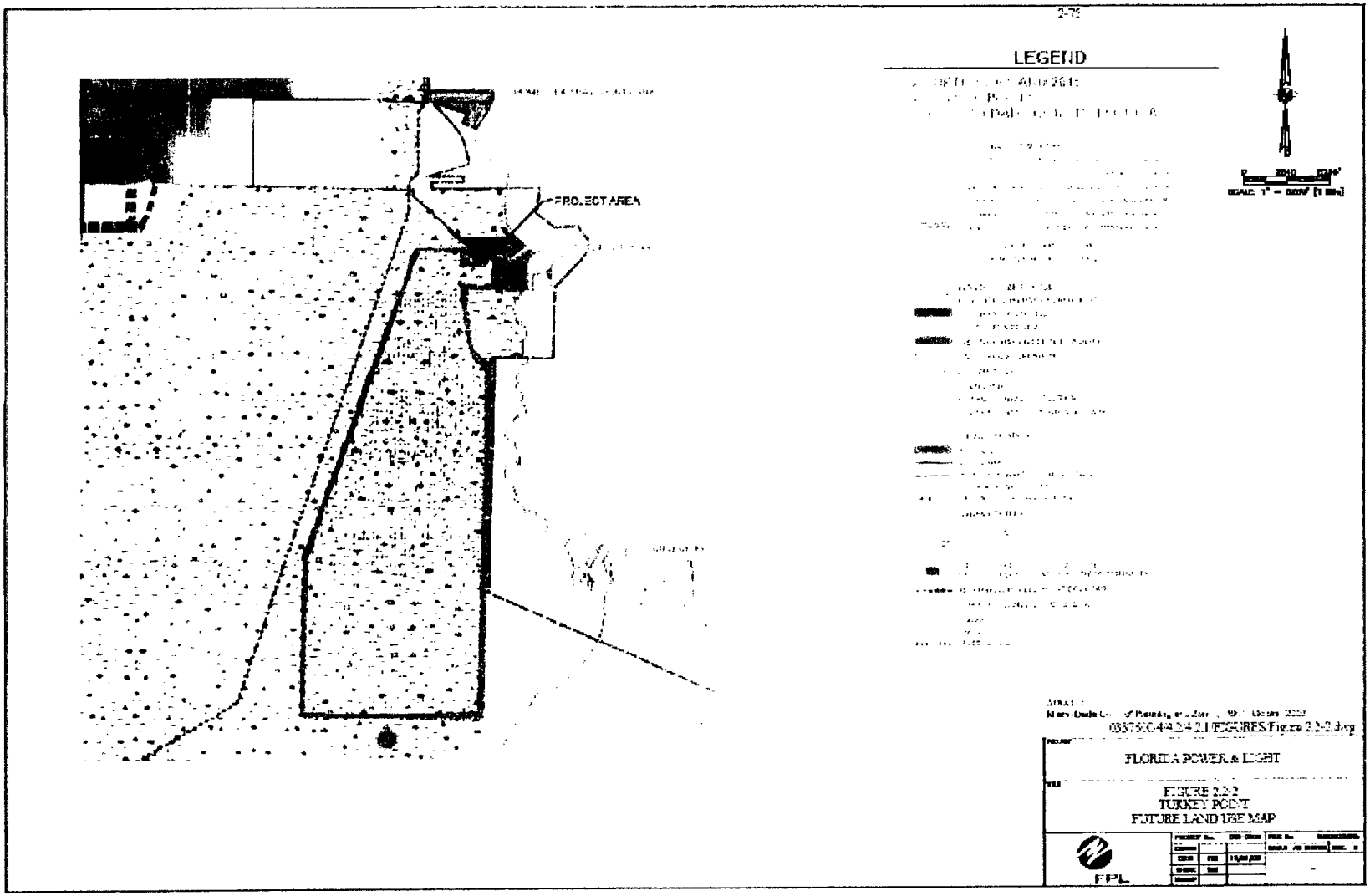

Florida
City
Project Location
Turkey Point
Plant Site
(11,000 acres)
Everglades
Mitigation Bank
(13,000 acres)
HOMESTEAD
BAYFRONT PARK
BISCAYN
DADE CO
MONROE CO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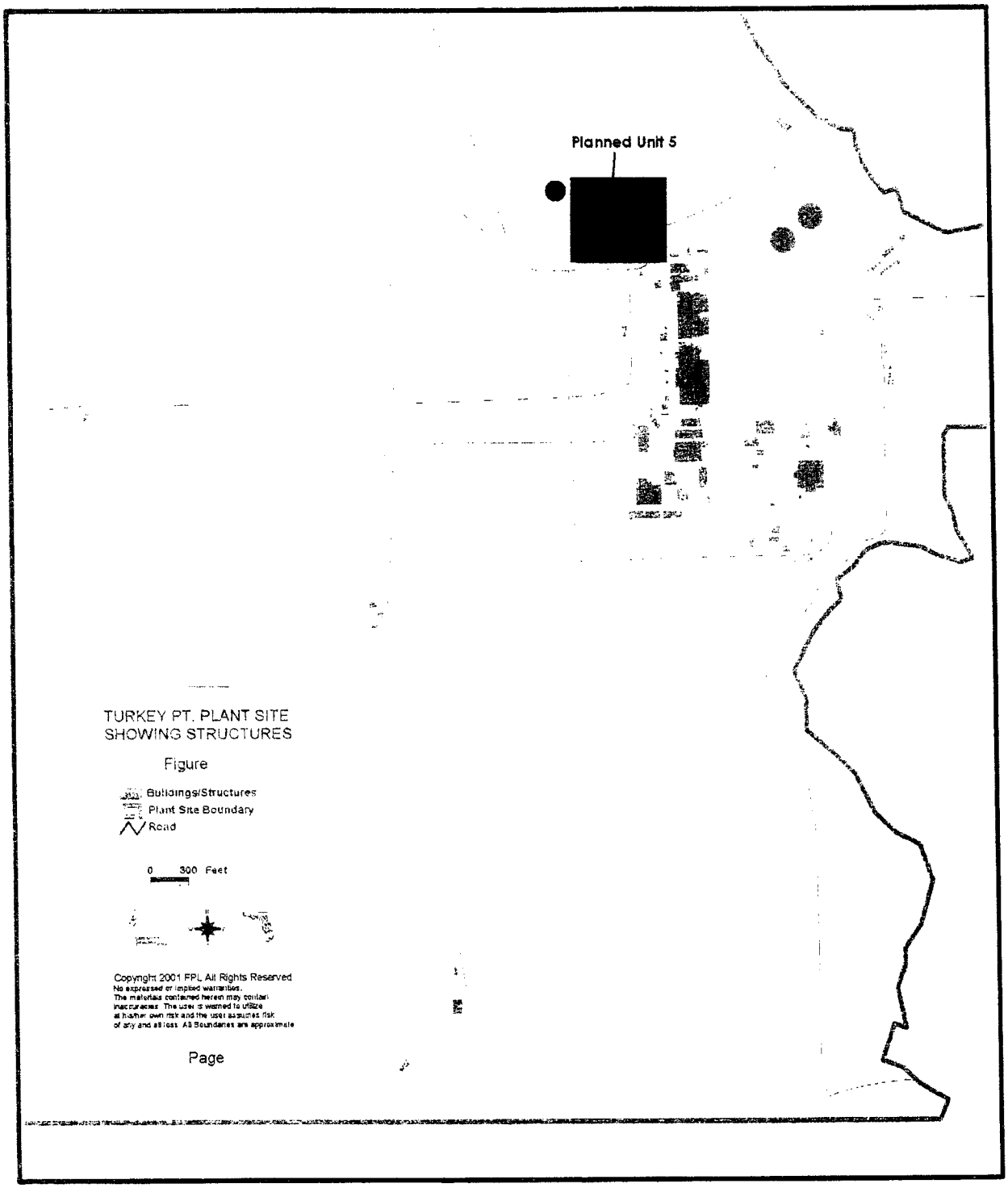
PROJECT AREA
FLORIDA POWER & LIGHT
FUTURE 2.2-2
TURKEY POINT
FUTURE LAND USE MAP
FPL


Planned Unit 5
TURKEY PT. PLANT SITE
SHOWING STRUCTURES
Figure
Buildings/Structures
Plant Site Boundary
Road
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Environmental and Land Use Information:

Supplemental Information

Potential Site: Andytown

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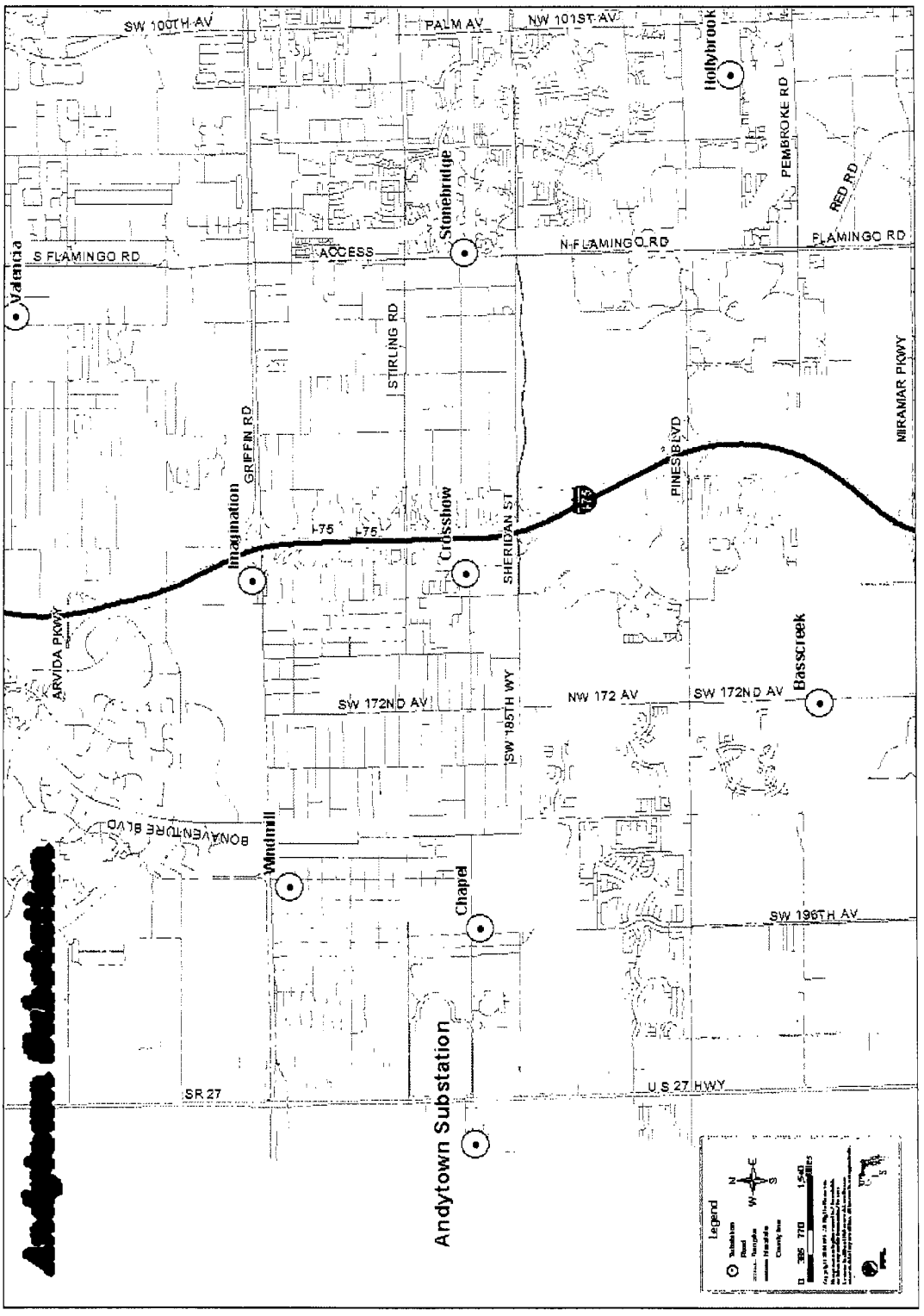
SW 100TH AV
PALM AV
NW 101ST AV
Hollybrook
PEMBROKE RD
RED RD
Stonebridge
ACCESS
N FLAMINGO RD
FLAMINGO RD
S FLAMINGO RD
Valencia
STIRLING RD
GRIFFIN RD
Imagination
I-75
Crosshow
SHERIDAN ST
PINES BLVD
MIRAMAR PKWY
ARVIDA PKWY
SW 172ND AV
NW 172 AV
SW 172ND AV
Basscreek
SW 185TH WY
BONAVENTURE BLVD
Windmill
Chapel
SW 196TH AV
SR 27
U S 27 HWY
Andytown Substation
Legend

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Environmental and Land Use Information:

Supplemental Information

Potential Site: Cape Canaveral

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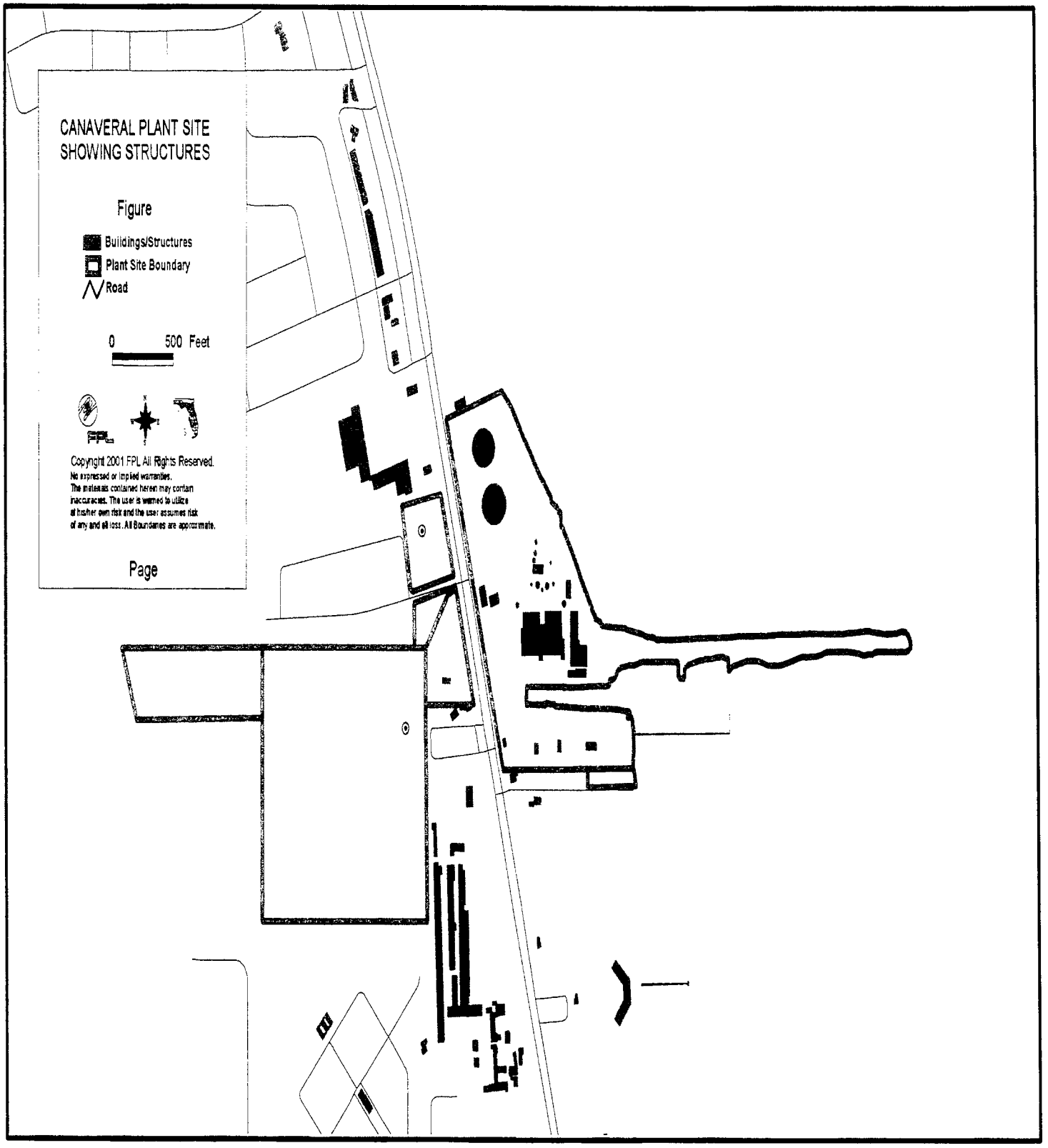
CANAVERAL PLANT SITE
SHOWING STRUCTURES
Figure
Buildings/Structures
Plant Site Boundary
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Environmental and Land Use Information:

Supplemental Information

Potential Site: Corbett

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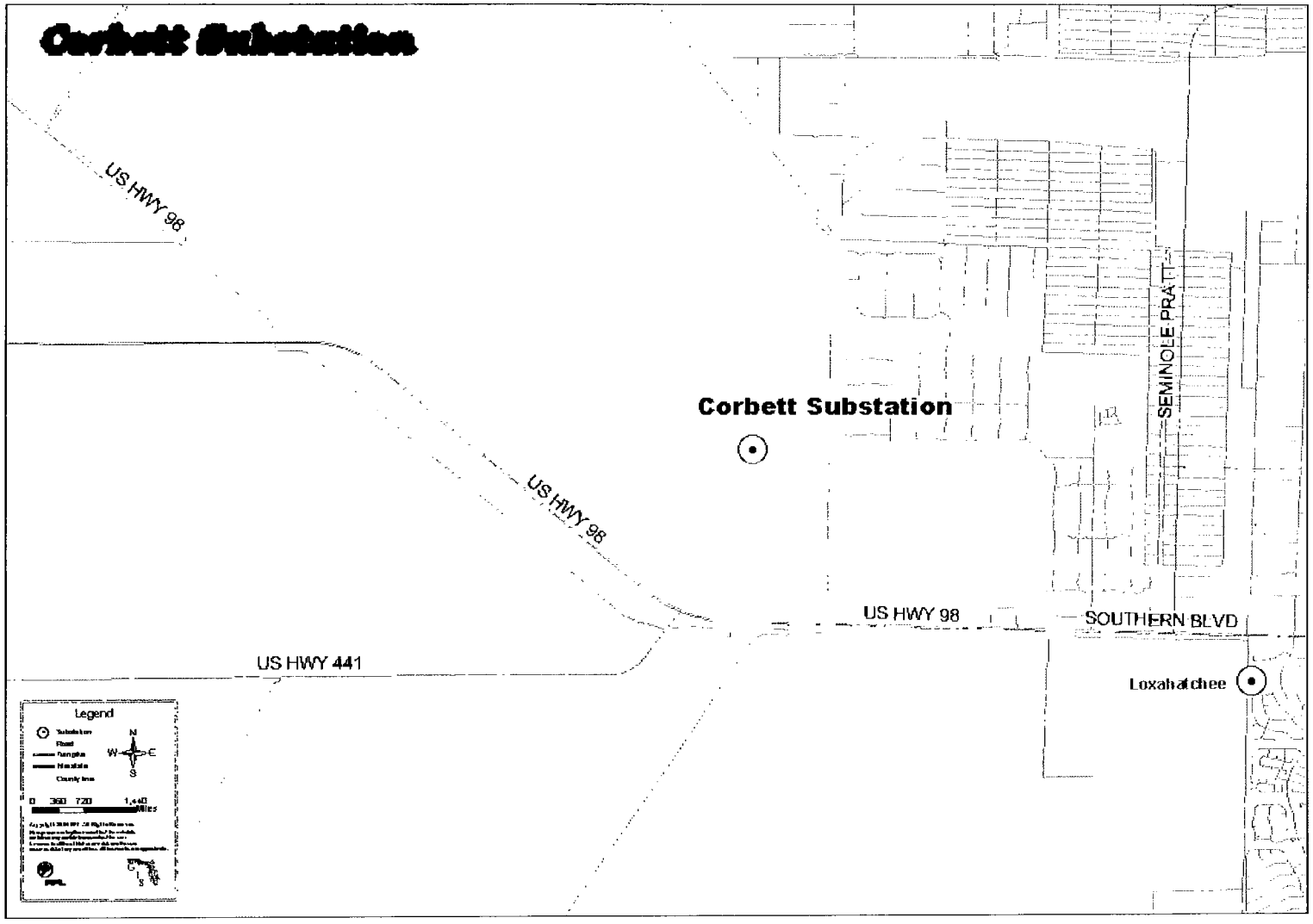
Corbett Substation
US HWY 98
US HWY 98
Corbett Substation
SEMINOLE PRATT
US HWY 98
SOUTHERN BLVD
US HWY 441
Loxahatchee
Legend
N
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0 360 720 1,440
Miles

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Environmental and Land Use Information:

Supplemental Information

Potential Site: Midway

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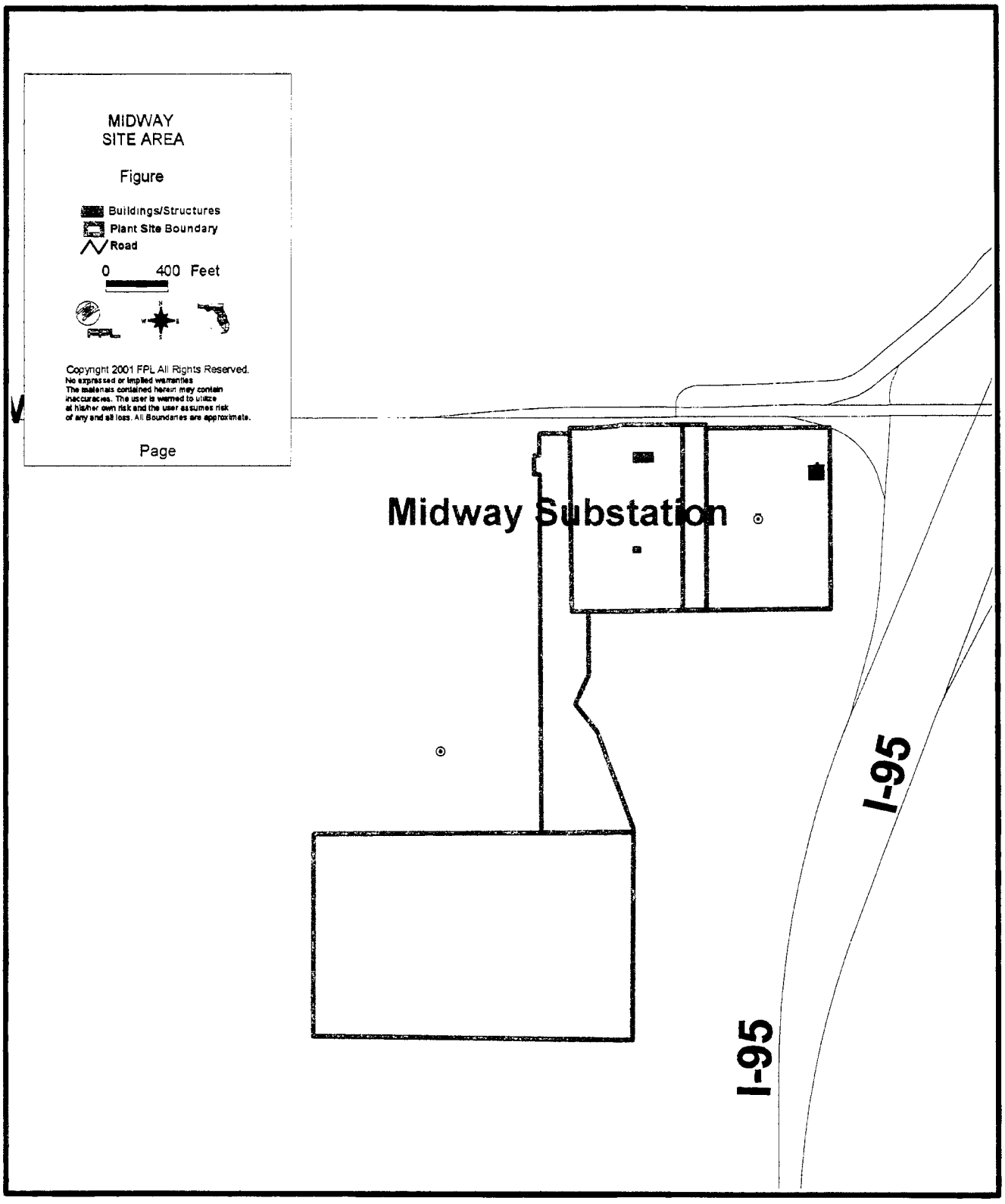
MIDWAY
SITE AREA
Figure
Buildings/Structures
Plant Site Boundary
Road
0 400 Feet
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inaccuracies. The user is warned to utilize
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of any and all loss. All Boundaries are approximate.
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Midway Substation
I-95
I-95

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Environmental and Land Use Information:

Supplemental Information

Potential Site: Port Everglades

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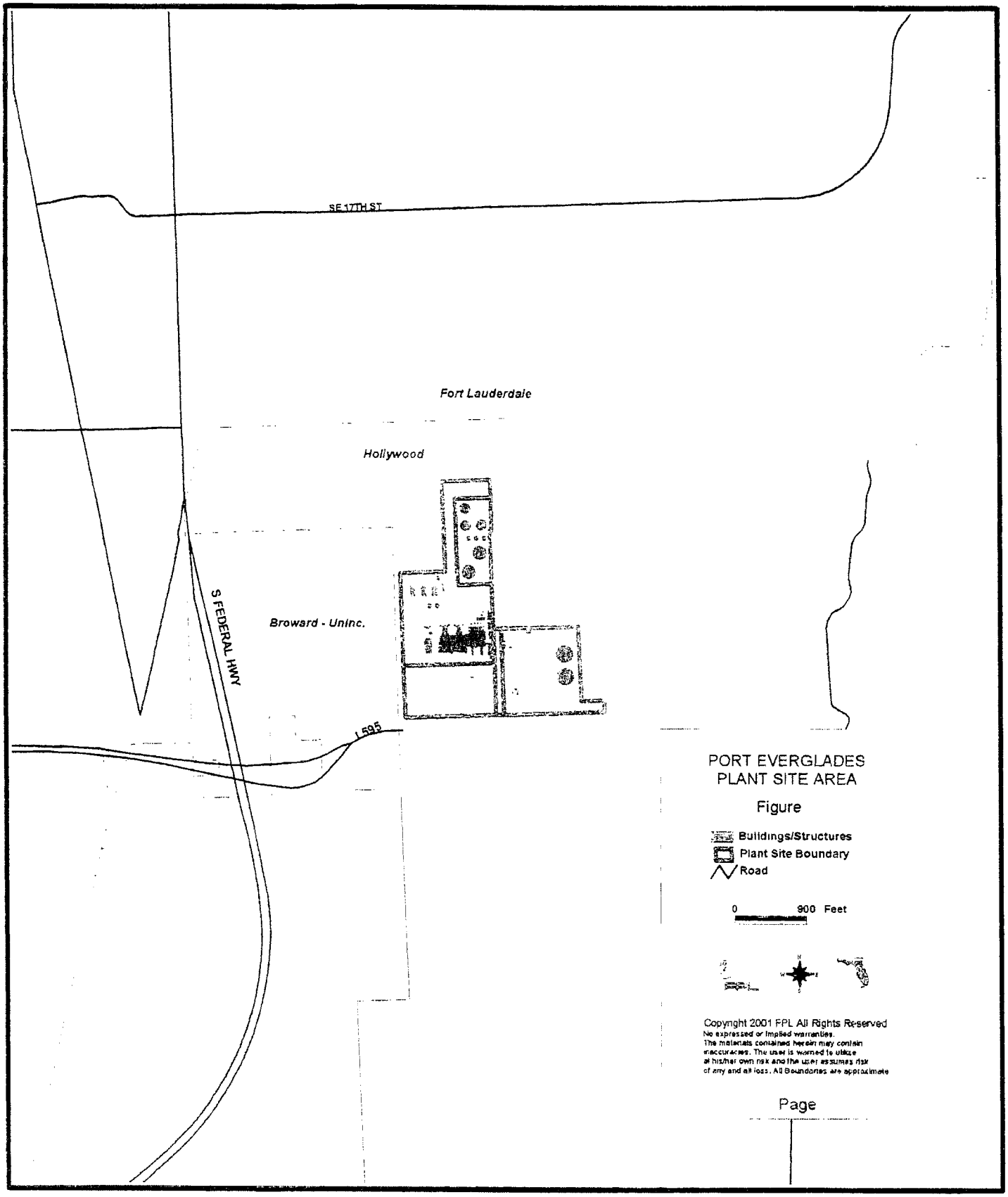
SE 17TH ST
Fort Lauderdale
Hollywood
Broward - Uninc.
S FEDERAL HWY
I 595
PORT EVERGLADES
PLANT SITE AREA
Figure
Buildings/Structures
Plant Site Boundary
Road
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900 Feet
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Environmental and Land Use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

Supplemental Information

Potential Site: Riviera Plant

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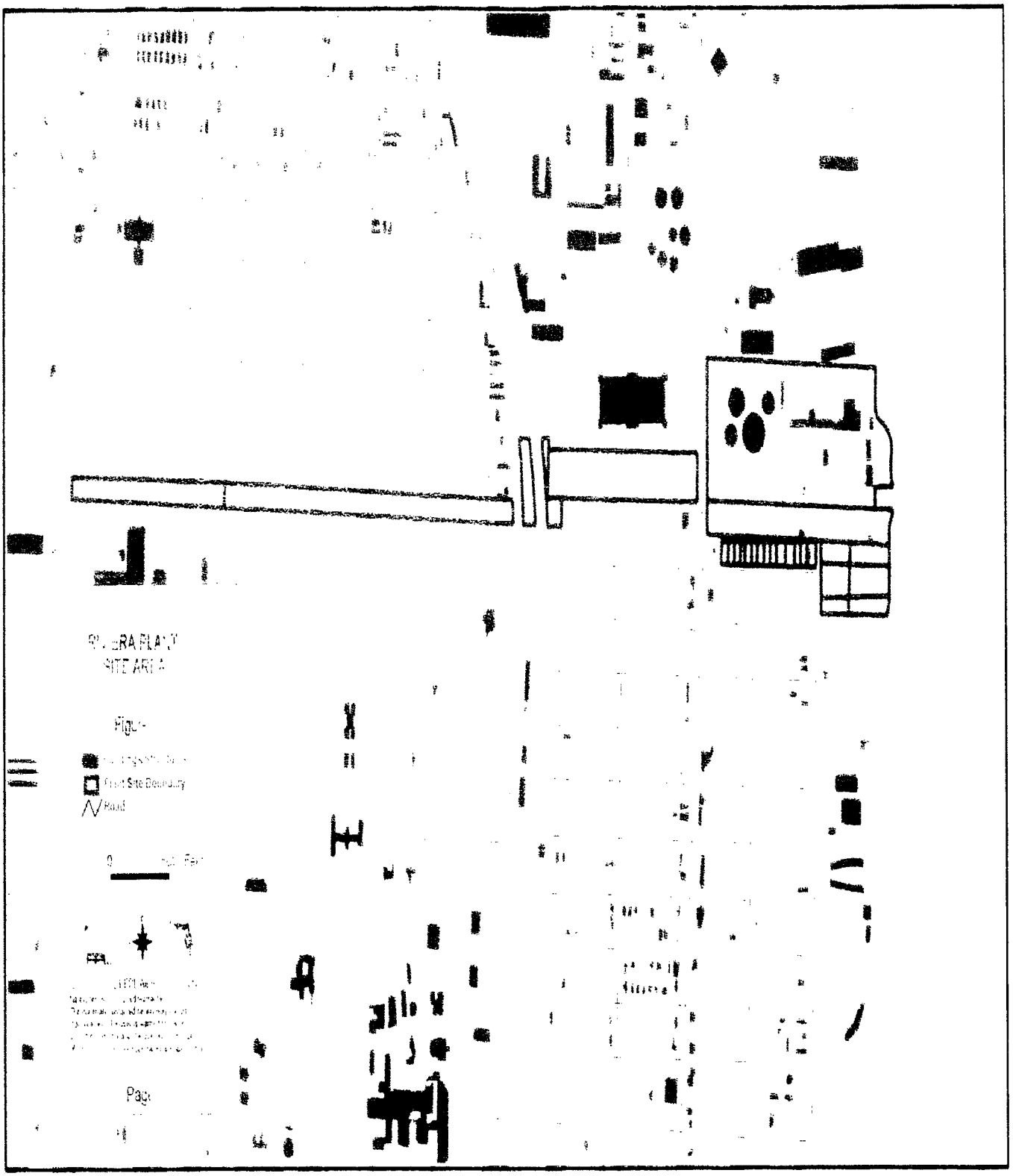

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CHAPTER V

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 influence the development of assumptions regarding 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, or delivering power from existing 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 near-term options projected to be added are combustion turbines can be added to the system on relatively short notice. If higher–than–projected loads begin to appear, combustion turbines can be placed in service in simple cycle mode in response to this unexpected occurrence. FPL believes that this fact qualitatively enables 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 fuel price forecasts different than its "Most Likely" fuel price forecast. All of the options considered in the IRP analysis for possible near-term implementation (i.e., through at least 2010) were natural gas-fired units, so any change in the fuel costs projections would have affected these near-term options in essentially the same way. Consequently, FPL concluded that a fuel price sensitivity case would not have provided information that would affect the selection of resources in the plan.

This approach is unique to the specific resources identified in this plan. FPL's on-going resource planning work will analyze the potential for solid fuel alternatives for the 2011-on time period. Support of these analyses will likely include fuel price sensitivity considerations to identify both the magnitude and likelihood of fuel cost reductions or the ability of fuel diversification to reduce the volatility of FPL's system fuel costs.

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 planning 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 6.4%, and an equity return of 11.0%. These assumptions resulted in a weighted average cost of capital of 8.9% and an after-tax discount rate of 7.8%. 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 near-term FPL construction options only that were generally very similar in design and varied only by site. Consequently, FPL concluded that varying financial assumptions would have resulted in no significant change in the results of the analysis.

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 resource 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 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 load flow cases.

Generally, the normal voltage criteria for FPL stations is given below:

Voltage Level (kV)	Vmin (p.u.)	Vmax (p.u.)
69, 115, 138	0.95	1.05
230	0.95	1.06
500	0.95	1.07

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 is 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 very near–term elements of FPL's capacity additions include a number of firm capacity short-term purchases and the construction (or proposed construction) of three new generating units; one each at FPL's existing Martin, Manatee and Turkey Point sites. The firm capacity short-term purchases were acquired through negotiations and the three generation construction projects were selected after evaluating competing proposals received in response to Request for Proposals (RFP's) issued by FPL in mid-2002 and mid-2003 respectively. 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 (FPSC) in late 2002. FPL has recently filed for FPSC approval of the Turkey Point combined cycle unit and expects a decision later this year.

FPL's current plan reflects the addition of two CT's to meet the 2008 need. This part of the plan will be refined after DSM goals are approved in the 3rd or 4th Quarter of 2004. FPL will also continue to evaluate purchases from existing units to meet all or part of the 2008 need.

To the extent that the capacity additions for 2009 and beyond require approval under the Power Plant Siting Act, FPL would conduct a capacity solicitation process similar to these Request for Proposal (RFP) processes.

FPL's current plan includes purchases to replace the UPS contracts that expire 2010. At present FPL is evaluating various purchase strategies for filing this need.

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 line.

FPL plans to construct a new transmission line (by December 2005) that is presently being certified under the Transmission Line Siting Act (403.52 – 403.536, F.S.). The new line will connect FPL's Orange River Substation to FPL's Collier Substation (as shown on Table III.F.1). The certification process for this new line should be completed by the summer of 2004. 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, FPL has identified the need for a new 230kV transmission line (by June 2008) that requires certification under the Transmission Line Siting Act (403.52 – 403.536, F.S.). The new line will connect FPL's St. Johns Substation to FPL's proposed West Palm Coast Substation (as shown on Table III.F.1). The construction of this line is necessary to serve existing and future customers in the Flagler and St. Johns areas in a reliable and effective manner.

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