Florida Power & Light Company, P.O. Box 029100, Miami, FL 33102-9100

April 1, 2009

VIA HAND DELIVERY

Ms. Ann Cole
Division of the Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

RE: 2009-2018 Ten-Year Power Plan Site Plan 090000-OT

Dear Ms. Cole:

In accordance with Rule 25-22.071, F.A.C., please find enclosed for filing the original and twenty-five (25) copies of Florida Power & Light Company's 2009-2018 Ten-Year Power Plant Site Plan.

Please acknowledge your receipt of the above filing on the enclosed copy of this letter and return to the undersigned. Thank you for your assistance on this matter.

Sincerely,

Monica Padron

COM ___
ECR ___
GCL 1
OPC ___
RCP ___
SSC ___
SGA ___
ADM ___
CLK 2

MP: ec
Enclosures

Ten Year Power Plant Site Plan
2009 – 2018

FPL

Ten Year Power Plant Site Plan

2009-2018

Submitted To:

Florida Public
Service Commission

Miami, Florida
April 2009

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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 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 (F.A.C.).

This Ten Year Power Plant Site Plan (Site Plan) document is based on Florida Power & Light Company's (FPL) integrated resource planning (IRP) analyses that were carried out in 2008 and that were on-going in the first Quarter of 2009. The forecasted information presented in this plan addresses the 2009–2018 time frame.

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

This document is organized in the following manner:

Chapter I – Description of Existing Resources

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

Chapter II – Forecast of Electric Power Demand

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

Chapter III – Projection of Incremental Resource Additions

This chapter discusses FPL's integrated resource planning (IRP) process and outlines FPL's projected resource additions, especially new power plants, based on FPL's IRP work in 2008 and

early 2009.

Chapter IV – Environmental and Land Use Information

This chapter discusses environmental information as well as Preferred and Potential site locations for additional electric generation facilities.

Chapter V – Other Planning Assumptions and Information

This chapter addresses twelve "discussion items" which pertain to additional information that is to be 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
	GT	Gas Turbine
	IC	Internal Combustion
	NP	Nuclear Power
	PV	Photovoltaic
	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
	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

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Executive Summary

Florida Power & Light Company's (FPL) 2009 Ten Year Power Plant Site Plan (Site Plan) presents FPL's current plans to augment and enhance its electric generation capability (owned or purchased) as part of its efforts to meet its projected incremental resource needs for the 2009 - 2018 time period. By design, the primary focus of this document is on supply side additions; i.e., electric generation capability. The supply side additions discussed in this document are resources projected to be needed after accounting for FPL's extensive demand side management (DSM) contributions and the significant energy efficiency contributions from the latest, enhanced federal appliance and lighting efficiency standards. The projected impacts of the federal appliance and lighting efficiency standards are included in FPL's load forecast presented in this document. The projected impacts of FPL's DSM contributions are addressed as reductions to the forecasted load.

The resource plan that is presented in FPL's 2009 Site Plan contains two key similarities to the resource plan presented in FPL's 2008 Site Plan, especially for the early years of the ten-year period. However, there are also three significant changes in the current resource plan compared to the resource plan presented in the 2008 Site Plan. These similarities to, and changes from, the 2008 Site Plan, plus the factors driving these changes are discussed below.

I. Similarities to the Resource Plan Presented in the 2008 Site Plan:

There are two key similarities in the current resource plan presented in this document compared to the resource plan presented in the 2008 Site Plan.

Similarity # 1: Three highly efficient combined cycle (CC) generating units and increases in generating capacity at FPL's existing nuclear units will be added to FPL's system in 2009 - 2012.

One similarity is the addition of new highly efficient natural gas-fired CC generating units and increased generating capacity from FPL's existing nuclear units in the 2009 through 2012 time period. FPL will be adding three 1,219 MW (Summer) CC units in western Palm Beach County during 2009 through 2011. The site for these units is named the West County Energy Center (WCEC) and these units are identified as WCEC Units 1, 2, and 3. The WCEC Unit 1 and WCEC Unit 2 were approved by the Florida Public Service Commission (FPSC) in June 2006. Site certification for these units under the Florida Electric Power Plant Siting Act was approved by the Governor and the Cabinet serving as the Siting Board in December 2006. The WCEC Unit 3 was

approved by the FPSC in September 2008 and FPL's site certification for this unit was approved in November 2008.

In addition, FPL will be adding approximately 400 MW of increased generating capacity at its existing nuclear power plants at its Turkey Point and St. Lucie sites. This increased capacity is scheduled to come in-service in 2011 and 2012. The need for these capacity "uprates" was approved by the FPSC in January 2008. The Final Order for the Site Certification was issued in September 2008 for the St. Lucie uprates and October 2008 for the Turkey Point uprates.

Similarity # 2: The amount of projected DSM additions remains unchanged in this Site Plan. These projections are subject to change in late 2009 based on the outcome of the 2009 DSM Goals proceeding before the FPSC.

The other key similarity to the resource plan presented in the 2008 Site Plan is the amount of additional DSM that is projected to be implemented annually over the ten-year period. There is essentially no change in the amount of projected annual DSM additions between the 2008 Site Plan and the 2009 Site Plan.

The DSM values presented in the 2009 Site Plan are based on meeting FPL's currently approved DSM Goals through 2014, plus implementing additional cost-effective DSM through 2014 that was identified by FPL after the current DSM Goals were established, and a projection of continued DSM additions in 2015 through 2017 at an annual implementation rate commensurate with that in the years leading up to 2014. Because the 2009 Site Plan addresses one more year (2018) than did the 2008 Site Plan, FPL has extended its DSM projection out one more year to 2018 using a similar annual implementation rate.

However, FPL is scheduled to present its new projections of cost-effective DSM to the FPSC in June 2009. These new projections will be used to determine FPL's new DSM Goals for the years 2010 through 2019. The analyses to develop these new projections of cost-effective DSM for the new DSM Goals are currently a work in progress at the time the 2009 Site Plan is being filed. The final order from the FPSC establishing FPL's new DSM Goals is expected in the 4th Quarter of 2009. The subsequent development and approval of FPL's DSM Plan (with which FPL will meet the new Goals) will likely be made in early 2010. Therefore, the impact of FPL's new DSM Goals and DSM Plan will be reflected next year in FPL's 2010 Site Plan.

II. Factors That Are Driving Changes in FPL's Resource Plan:

There are two primary "change factors" that are largely driving the changes in FPL's 2009 resource plan compared to the resource plan presented in FPL's 2008 Site Plan. These two change factors, and their impacts on the resource plan, are summarized below and are addressed in more detail in Chapters II and III of this document.

Change Factor # 1: The load forecast is significantly lower than in previous years.

The first factor that is driving changes in the current resource plan is FPL's new long-term load forecast that was prepared in January 2009. With this new forecast, FPL now projects lower growth in electrical demand over the ten-year period addressed in this document. The projection of lower load growth is primarily driven by several factors including: a forecasted lower rate of population growth, an economic downturn lasting several years, and increased energy efficiency impact from the latest enhanced federal appliance and lighting efficiency standards. The combined effect of these three drivers results in projected lower growth in electrical demand for the entire ten-year period (2009 – 2018) addressed in this document, compared to the projected load growth discussed in FPL's 2008 Site Plan.

Change Factor # 2: Highly Efficient New Generation Capacity has been approved by the FPSC and is now reflected in FPL's Resource Plan in 2010-2018.

The second change factor is the inclusion of highly efficient new generating capacity that was approved by the FPSC during 2008. This new generating capacity was shown to be cost-effective, to enhance system fuel diversity, and to reduce FPL's system emission rates. This new generating capacity consists of new generating units that are nuclear, solar, or highly efficient new natural gas-fired CC units.

These new generating unit additions include the following:

- Two new nuclear units (Turkey Point Units 6 & 7) are projected to be brought into service in 2018 and 2020, respectively. Each unit is projected to add approximately 1,100 MW of firm capacity. The FPSC approved the need for these new nuclear units in April 2008. As part of this approval, FPL will be providing an annual feasibility analysis as part of the annual nuclear cost recovery process. A multi-year licensing and permitting review process for these units is currently underway. Because this Site Plan addresses the time period through 2018, the first of these two units, Turkey Point Unit 6, is now included in the 2009 Site Plan.

- Two new photovoltaic (PV) solar facilities are projected to be brought into service by 2010. One of these PV facilities will be placed in DeSoto County and will be named the DeSoto Next Generation Solar Energy Center. This facility is projected to have a nameplate rating of 25 MW. The second PV facility will be placed in Brevard County and will be named the Space Coast Next Generation Solar Energy Center. This PV facility is projected to have a nameplate rating of 10 MW. The FPSC approved the eligibility of expenditures for these PV facilities to be recovered through the environmental cost recovery clause in August 2008. The DeSoto Next Generation Solar Energy Center obtained an Environmental Resource Permit and an Army Corps of Engineers permit in October 2008. The Space Coast Next Generation Solar Energy Center received the Army Corps of Engineers permit in December 2008 and the Environmental Resource Permit is expected to be received in mid-2009.
- A new solar thermal facility at FPL's existing Martin plant site is also projected to be brought into service in 2010. This solar thermal facility, named the Martin Next Generation Solar Energy Center, is projected to be able to produce up to 75 MW of steam capability, thus allowing reduced use of fossil fuels by FPL when the solar thermal facility is producing steam. The FPSC approved the eligibility of expenditures for this solar thermal facility to be recovered through the environmental cost recovery clause in August 2008. FPL also received the site certification modification approval in August 2008.
- Two existing generating plants, each consisting of two older fossil fired steam generating units, are projected to be converted into new, highly efficient CC units. The existing two-unit plant at FPL's Cape Canaveral site will be replaced by a new CC unit with a projected output of 1,219 MW (Summer) in 2013. This new unit will be called the Cape Canaveral Next Generation Clean Energy Center. The existing two-unit plant at FPL's Riviera site will also be replaced by a new CC unit with a projected output of 1,207 MW (Summer) in 2014. This new unit will be called the Riviera Beach Next Generation Clean Energy Center. These conversions were approved by the FPSC in September 2008. The site certification application for Cape Canaveral was filed in December 2008 and the site certification application for Riviera Beach was filed in February 2009. A decision is expected to be reached regarding these applications by early 2010.

These new generating units were selected and incorporated into FPL's resource plan for a variety of reasons including cost-effectiveness, significant system fuel savings, and significant system emission reductions, including greenhouse gas emission reductions. In addition, the solar projects will increase the contribution of renewable energy sources towards meeting the electricity needs of FPL's customers.

III. Resulting Changes in FPL's Resource Plan Compared to the 2008 Site Plan:

The impact of the two change factors discussed above, plus other concerns discussed later in this chapter and in Chapter III, have resulted in three significant changes in FPL's resource plan presented in this document compared to the resource plan presented in FPL's 2008 Site Plan. These resulting changes are summarized below.

Resulting Change # 1: FPL's resource plan now reflects greater contributions from nuclear energy and renewable energy.

The first of FPL's two planned 1,100 MW nuclear units that is scheduled to come in-service in 2018 (the second unit is scheduled to come in-service in 2020 but is not addressed in this document due to the later in-service date), plus the addition of 35 MW of PV and 75 MW of solar thermal in 2010, are new to FPL's resource plan this year. These new units will increase the contribution from both nuclear and renewable energy. In turn, this reduces fossil fuel use by FPL's system from what it otherwise would have been.

This decrease in fossil fuel usage will also contribute to lowering FPL system emission rates, including greenhouse gas emission rates, thus lowering system emissions from what they would otherwise have been if these generating units were not added. In regards to carbon dioxide (CO_2), FPL already has a relatively low CO_2 emission rate (CO_2 tons per MWh generated) compared to other utilities. The planned additions of new nuclear capacity, highly efficient CC capacity including the conversions of two existing plants, and the PV and solar thermal contributions will result in a further lowering of FPL's system CO_2 emission rate, thus working to offset the upward pressure on emissions that will be caused by continuing population and electrical load growth in FPL's service territory.

Resulting Change # 2: Other than the new generating units that have recently been approved, FPL projects that it will add no additional new generating units to meet capacity needs through 2018.

FPL's lower load forecast in January 2009 results in a significantly lower resource need projection for the next ten years than was the case with the 2008 Site Plan. The lower resource need can be effectively met by the new generating units that have recently been approved. As shown by the table ES.1 below, FPL projects no additional FPL generation unit additions through 2018 beyond the above-mentioned units that were approved in 2008. (However, this resource plan is subject to change for a variety of reasons including the need to address potential new laws and/or regulations related to renewable energy.)

Resulting Change # 3: FPL will also place on Inactive Reserve some of its existing generating units starting in 2009.

The lower resource need projection discussed above has also led FPL to reflect in its resource plan the temporary removal of a number of its existing, older, less efficient generating units from active service starting in 2009. These units will continue to be maintained and will be returned to active service as needed.

FPL's existing Cape Canaveral and Riviera plants will be placed in Inactive Reserve as early as the Summer of 2009. The Cape Canaveral plant is scheduled to be permanently removed in 2010, and the Riviera plant will be permanently removed in 2011, as part of the conversion projects. In addition, the following older, less efficient units will also be placed on Inactive Reserve status in 2009 and 2010: Cutler Units 5 & 6, Port Everglades Units 1 & 2, Sanford Unit 3, Martin Unit 2, and Manatee Unit 2[1]. FPL will continue to maintain these units and will again utilize these units (other than those at Riviera and Cape Canaveral where new units will be constructed) as resource needs dictate. For purposes of this planning document, FPL projects that these units will begin to be returned to operation starting in 2016. A further discussion of these units is presented in Chapter III.

Table ES.1 presents a current projection of the changes in the generating resources portion of FPL's resource plan based on the factors and changes discussed above. As such, this table does not directly address FPL's significant DSM contributions, but FPL's significant projected DSM contributions were fully accounted for by FPL and the FPSC in the process of approving the need for the new generating units presented in the table.

FPL's ongoing resource planning efforts will continue to be influenced by the two change factors discussed above (i.e., a new lower load forecast and the addition of highly efficient nuclear, solar, and CC generation already approved by the FPSC). In addition, other items will also influence FPL's resource planning work. Among these items are two that FPL refers to as on-going system concerns that FPL has considered in its resource planning work for a number of years. These on-going system concerns include: (1) maintaining/enhancing fuel diversity in the FPL system, and (2) maintaining a balance between load and generating capacity in Southeastern Florida.

In addition, two other relatively recent developments will also influence FPL's continuing resource planning efforts. One of these is the Executive Orders directive issued in 2007 by Governor Crist calling for reduction in greenhouse gas emissions and greater contribution from renewable

[1] The two 800 MW units, Martin Unit 2 and Manatee Unit 2, on this list may be replaced at some time in the future by two similar size units, Martin Unit 1 and Manatee Unit 1. If this were to occur, Martin Unit 1 and Manatee Unit 1 would be temporarily placed on Inactive Reserve status and Martin Unit 2 and Manatee Unit 2 would be returned to active service.

energy sources. As previously discussed, FPL's resource planning has already taken positive steps in regard to both of these issues.

The other development is the ongoing effort to establish a Florida standard for renewable energy contributions to a utility system. A Renewable Portfolio Standard (RPS) proposal prepared by the FPSC has been sent to the Florida Legislature for consideration during the legislative session that began in March 2009. Because the eventual RPS outcome is not known at the time the 2009 Site Plan is being prepared, the resource plan presented in FPL's 2009 Site Plan does not directly address any RPS decision. Assuming that an RPS decision is reached later in 2009, FPL will then determine what steps need to be taken to address the standard. These steps will be discussed next year in FPL's 2010 Site Plan.

Table ES.1: Projected Capacity Changes and Reserve Margins for FPL

Projected Capacity Changes and Reserve Margins for FPL [1]					
		Net Capacity Changes (MW)		Reserve Margin (%)	
Year	Projected Capacity Changes	Winter [2]	Summer [3]	Winter	Summer
2009	Changes to Existing Purchases [4]	---	(479)	53.1%	28.1%
	West County Unit 1 [5]	---	1,219		
	DeSoto Next Generation Solar Energy Center (PV) [6]	---	---		
	Riviera Unit 3 - offline for conversion	---	(276)		
	Riviera Unit 4 - offline for conversion	---	(286)		
	Changes to Existing Units	(78)	10		
	Inactive Reserve of Existing Units - offline [8]	---	(766)		
2010	Changes to Existing Purchases [4]	(559)	(352)	58.2%	20.7%
	West County Unit 1 [5]	1,335	---		
	West County Unit 2 [5]	1,335	1,219		
	Martin Next Generation Solar Energy Center (Solar Thermal) [7]	---	---		
	Space Coast Next Generation Solar Energy Center (PV) [6]	---	---		
	Riviera Unit 3 - offline for conversion	(277)	---		
	Riviera Unit 4 - offline for conversion	(288)	---		
	Cape Canaveral Unit 1 - offline for conversion	---	(395)		
	Cape Canaveral Unit 2 - offline for conversion	---	(388)		
	Changes to Existing Units	53	36		
	Inactive Reserve of Existing Units - offline (8)	(777)	(1,648)		
2011	Changes to Existing Purchases [4]	(46)	(45)	41.8%	25.8%
	West County Unit 3 [5]	---	1,219		
	Cape Canaveral Unit 1 - offline for conversion	(397)	---		
	Cape Canaveral Unit 2 - offline for conversion	(397)	---		
	Inactive Reserve of Existing Units - offline [8]	(1,663)	10		
	Changes to Existing Units	130	(92)		
2012	Changes to Existing Purchases [4]	---	(156)	45.7%	23.6%
	West County Unit 3 [5]	1,335	---		
	Changes to Existing Units	(11)	(11)		
	Existing Nuclear Units Capacity Uprates - St. Lucie 1	103	103		
	Existing Nuclear Units Capacity Uprates - St. Lucie 2	---	88		
	Existing Nuclear Units Capacity Uprates - Turkey Point 3	---	104		
2013	Changes to Existing Purchases [4]	(180)	---	44.1%	29.1%
	Existing Nuclear Units Capacity Uprates - St. Lucie 2	88	---		
	Existing Nuclear Units Capacity Uprates - Turkey Point 3	104	---		
	Existing Nuclear Units Capacity Uprates - Turkey Point 4	104	104		
	Cape Canaveral Next Generation Clean Energy Center [5]	---	1,219		
2014	Changes to Existing Purchases [4]	---	50	44.0%	28.0%
	Cape Canaveral Next Generation Clean Energy Center [5]	1,343	---		
	Riviera Beach Next Generation Clean Energy Center	---	1,207		
2015	Riviera Beach Next Generation Clean Energy Center	1,310	---	46.0%	25.1%
2016	Inactive Reserve of Existing Units - online [8]	---	814	42.3%	20.0%
	Changes to Existing Purchases [4]	---	(1,311)		
2017	Inactive Reserve of Existing Units - online [8]	825	822	41.5%	21.1%
2018	Turkey Point Nuclear Unit 6 [5]	---	1,100	38.2%	22.2%
	Inactive Reserve of Existing Units - online [8]	834	---		
	TOTALS =	**4,226**	**3,119**		

(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 the year shown.
(3) Summer values are values for August of the year shown.
(4) These are firm capacity and energy contracts with QF, utilities, and other entities. See Table I.B.1 and Table I.B.2 for more details.
(5) All new unit additions are scheduled to be in-service in June of the year shown except for WCEC 1 and WCEC 2 that are projected to be in-service in August 2009 and December 2009, respectively. WCEC 1 is included in the Summer reserve margin calculation starting in 2009 and in the Winter reserve margin calculation starting in 2010. WCEC 2 is included in both the Summer and Winter starting in 2010. All additions assumed to start in June are included in the Summer reserve margin calculation starting in that year and in the Winter reserve margin calculation starting with the next year.
(6) Because of the intermittent nature of the photovoltaics (PV) resource, FPL is currently assigning no firm capacity benefit to these generating additions. FPL will reassess this once actual operating data from the PV facilities at these locations is available. This location-specific information is needed in order to gauge consistent output during the peak hours which are accounted for in FPL's reserve margin calculations.
(7) The Martin solar thermal facility is designed to provide steam for FPL's existing Martin Unit 8 combined cycle unit, thus reducing FPL's use of natural gas. No additional capacity (MW) will result from the operation of the solar thermal facility.
(8) A number of existing FPL power plants are being temporarily removed from service and placed on Inactive Reserve status. FPL plans to return these units to active service in the future as needed. The timing of the return of these units to full-time active status is uncertain at this time primarily due to the uncertainty regarding FPL's future load. However, for planning purposes, FPL is showing in this document that these units begin to return to active service starting in 2016.

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 8.7 million people. FPL served an average of 4,509,729 customer accounts in thirty-five counties during 2008. These customers were served from a variety of resources including: FPL-owned fossil and nuclear generating units, non-utility owned generation, demand side management (DSM), and interchange/purchased power.

I.A. FPL-Owned Resources

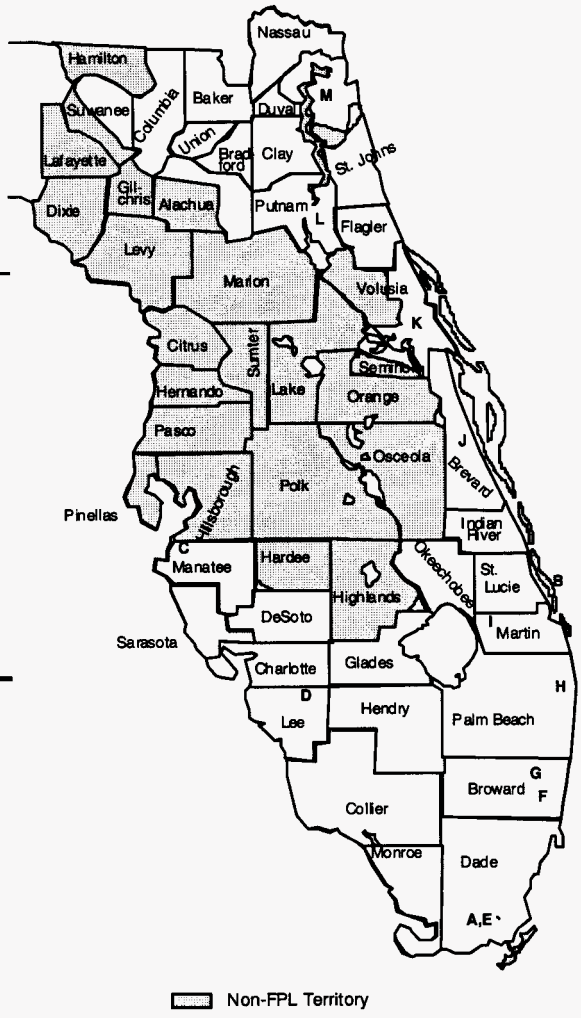
The existing FPL generating resources are located at fourteen generating sites distributed geographically around its service territory and also include partial ownership of one unit located in Georgia and two units located in Jacksonville, Florida. The current generating facilities consist of four nuclear units, three coal units, twelve combined cycle (CC) units, seventeen fossil steam units, forty-eight combustion gas turbines, one simple cycle combustion turbine, and five diesel units. The location of these ninety generating units is shown on Figure I.A.1 and in Table I.A.1. The second page of Table I.A.1 provides a "break down" of the capacity provided by the combustion turbine (CT) and steam turbine (ST) components of FPL's existing CC units.

FPL's bulk transmission system is comprised of 6,727 circuit miles of transmission lines. Integration of the generation, transmission, and distribution system is achieved through FPL's 580 substations in Florida.

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.

FPL Generating Resources by Location

Location/ Map Key	Plant Name	Number of Units	Summer MW
A	Turkey Point	5	3,322
B	St. Lucie *	2	1,553
C	Manatee	3	2,735
D	Fort Myers	2	1,758
E	Cutler	2	205
F	Lauderdale	2	884
G	Port Everglades	4	1,205
H	Riviera	2	565
I	Martin	5	3,701
J	Cape Canaveral	2	792
K	Sanford	3	2,050
L	Putnam	2	498
M	SJRPP **	2	254
	Scherer ***	1	646
	Gas Turbines	48	1,908
	Internal Combustion Turbines	5	12
	FPL Generation =	**90**	**22,087**



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

** SJRPP = St. John's River Power Park

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

Figure I.A.1: Capacity Resources by Location (as of December 31, 2008)

Table I.A.1: Capacity Resource by Unit Type (as of December 31, 2008)

Unit Type/ Plant Name	Location	Number of Units	Fuel	Summer MW
Combined-Cycle *				
Lauderdale	Dania, FL	2	Gas/Oil	884
Martin	Indiantown,FL	2	Gas	944
Martin	Indiantown,FL	1	Gas/Oil	1,105
Sanford	Lake Monroe, FL	2	Gas	1,912
Putnam	Palatka, FL	2	Gas/Oil	498
Fort Myers	Fort Myers, FL	1	Gas	1,440
Manatee	Parrish,FL	1	Gas	1,111
Turkey Point	Florida City, FL	1	Gas	1,148
Total Combined Cycle		**12**		**9,041**
Combustion Turbines *				
Fort Myers **	Fort Myers, FL	1	Gas/Oil	318
Total Combustion Turbines		**1**		**318**
Nuclear				
Turkey Point	Florida City, FL	2	Nuclear	1,386
St. Lucie ***	Hutchinson Island, FL	2	Nuclear	1,553
Total Nuclear		**4**		**2,939**
Coal Steam				
SJRPP ****	Jacksonville, FL	2	Coal	254
Scherer	Monroe County, Ga	1	Coal	646
Total Coal Steam		**3**		**900**
Oil/Gas Steam				
Cape Canaveral	Cocoa, FL	2	Oil/Gas	792
Cutler	Miami, FL	2	Gas	205
Manatee	Parrish, FL	2	Oil/Gas	1,624
Martin	Indiantown,FL	2	Oil/Gas	1,652
Port Everglades	Port Everglades, FL	4	Oil/Gas	1,205
Riviera	Riviera Beach, FL	2	Oil/Gas	565
Sanford	Lake Monroe, FL	1	Oil/Gas	138
Turkey Point	Florida City, FL	2	Oil/Gas	788
Total Oil/Gas Steam		**17**		**6,969**
Gas Turbines(GT)/Diesels(IC)				
Lauderdale (GT)	Dania, FL	24	Gas/Oil	840
Port Everglades (GT)	Port Everglades, FL	12	Gas/Oil	420
Fort Myers (GT)	Fort Myers, FL	12	Oil	648
Turkey Point (IC)	Florida City, FL	5	Oil	12
Total Gas Turbines/Diesels		**53**		**1,920**
Total Units:		**90**		
Total Net Generating Capability:				**22,087**

* The Combined Cycles and Combustion Turbines are broken down by components on Table 1.A.2.

** This unit consists of two combustion turbines.

*** Total capability of each unit is 853/839 MW. FPL's ownership share of St. Lucie 1 and 2 is 100% and 85%, respectively. Capabilities shown represent FPL's output share from each of the units (approx. 92.5% and exclude the Orlando Utilities Commission (OUC) and Florida Municipal Power Agency (FMPA) combined portion of approximately 7.44776% per unit.

**** Represents FPL's ownership share: SJRPP coal: 20% of two units

Table I.A.2: Combined Cycle and Combustion Turbine Components

Unit Type/ Plant Name		Summer MW *
Combined-Cycle		
Lauderdale 4 - Total		**442**
	CTA	160
	CTB	160
	Steam	122
Lauderdale 5 - Total		**442**
	CTA	160
	CTB	160
	Steam	122
Martin 3 - Total		**473**
	CTA	161
	CTB	161
	Steam	151
Martin 4 - Total		**473**
	CTA	161
	CTB	161
	Steam	151
Martin 8 - Total		**1,107**
	CTA	159
	CTB	159
	CTC	164
	CTD	164
	Steam	461
Putnam 1 - Total		**249**
	CTA	69
	CTB	69
	Steam	111
Putnam 2 - Total		**249**
	CTA	69
	CTB	69
	Steam	111
Ft Myers 2 - Total		**1,443**
	CTA	159
	CTB	159
	CTC	159
	CTD	159
	CTE	159
	CTF	159
	Steam 1	61
	Steam 2	428
Sanford 4 - Total		**956**
	CTA	158
	CTB	158
	CTC	158
	CTD	158
	Steam	324
Sanford 5 - Total		**955**
	CTA	158
	CTB	158
	CTC	158
	CTD	158
	Steam	323
Manatee 3 - Total		**1,111**
	CTA	164
	CTB	164
	CTC	164
	CTD	164
	Steam	455
Turkey Point 5 - Total		**1,147**
	CTA	171
	CTB	171
	CTC	171
	CTD	171
	Steam	463
Combustion Turbines		
Ft. Myers 3 - Total		**318**
	CTA	157
	CTB	161

* The total MW rating of the units might be slightly off from those shown in Table 1.A.1 due to rounding.

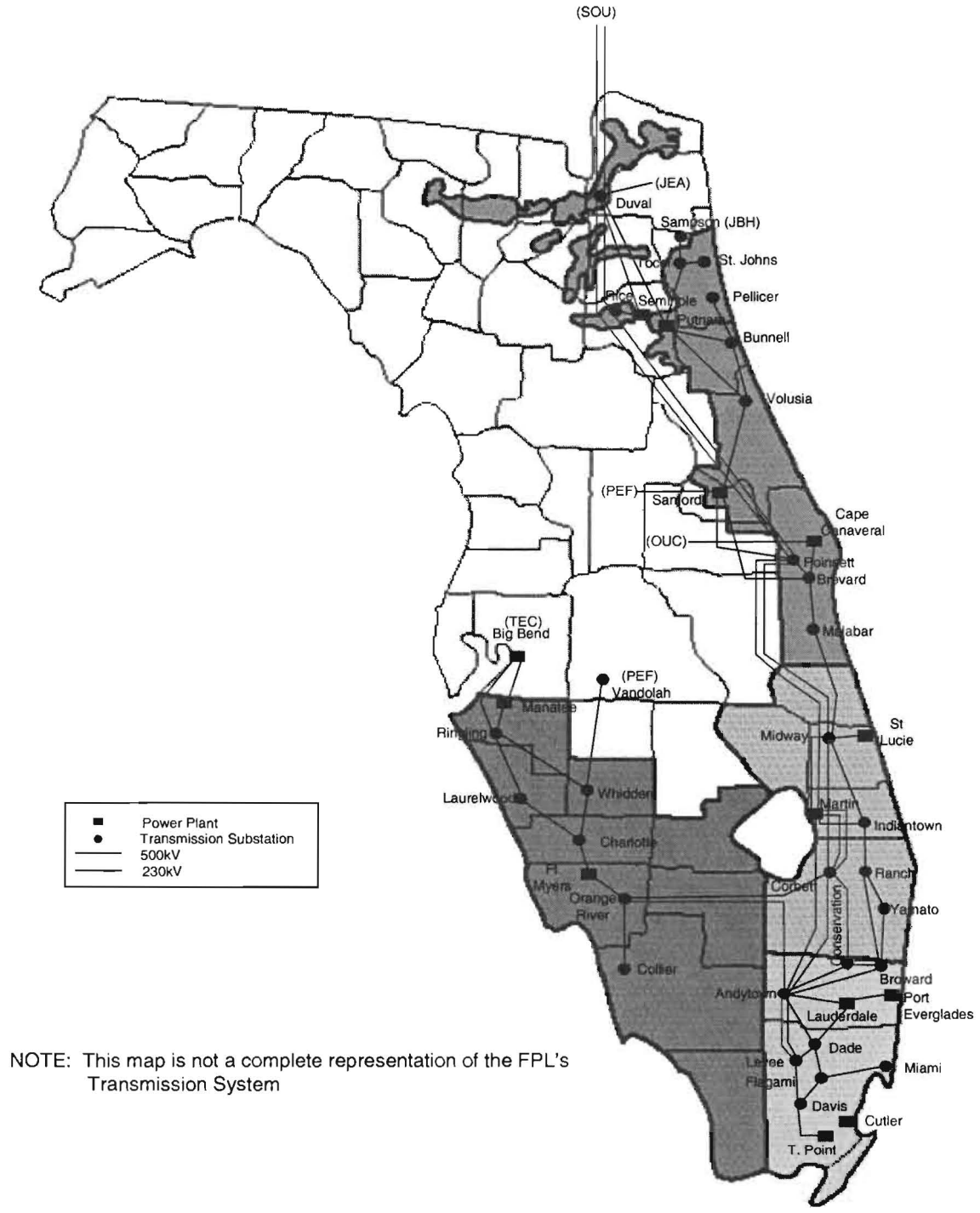
Table I.A.3: Purchase Power Resources by Contract (as of December 31, 2008)

Firm Capacity and Energy Purchases (MW)

	Location (City or County)	Fuel	Summer MW
I. Purchases from QFs: Cogeneration Small Power Production Facilities			
Cedar Bay Generating Co.	Duval County	Coal (Cogen)	250
Indiantown Cogen., LP	Martin County	Coal (Cogen)	330
Broward South	Broward County	Solid Waste	54
Broward North	Broward County	Solid Waste	56
Palm Beach SWA	Palm Beach County	Solid Waste	48
		Total:	**738**
II. Purchases from Utilities:			
UPS from Southern Co.	Various	Coal	931
SJRPP	Jacksonville,FL	Coal	381
		Total:	**1,312**
III. Other Purchases:			
Reliant/Indian River	Brevard County	Oil	576
Oleander (Extension)	Brevard County	Gas	156
Williams	Outside of Florida	Gas	106
Progress Energy Ventures	Outside of Florida	Gas	105
		Total:	**943**
		Total Net Firm Generating Capability:	**2,993**

Non-Firm Energy Purchases (MWH)

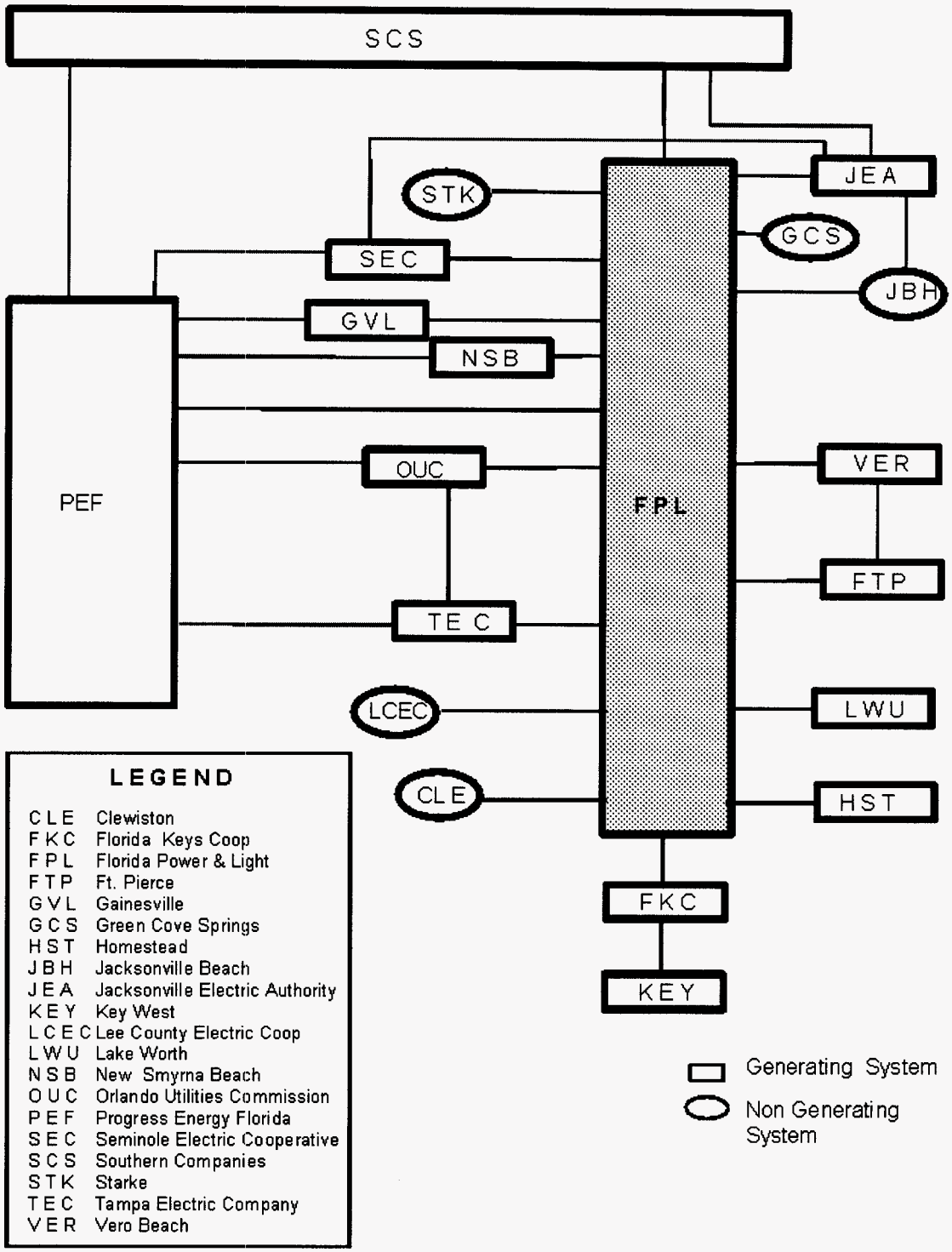
Plant Name	Location (City or County)	Fuel	Energy (MWH) Delivered to FPL in 2008
Tropicana	Manatee County	Natural Gas	24,266
Elliot	Palm Beach County	Natural Gas	101
US Sugar-Bryant	Palm Beach County	Bagassee	0
Okeelanta	Palm Beach County	Bagassee/Wood	343,209
Georgia Pacific	Putnam County	Paper by-product	1,232
Tomoka Farms	Volusia County	Landfill Gas	20,140
Rothenbach Park	Sarasota County	PV	269
Customer Owned PV	Various	PV	167
		Total Non-Firm Generating MWH:	**389,384**



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

Figure I.A.2: FPL Substation and Transmission System Configuration

FPL Interconnection Diagram



LEGEND

CLE	Clewiston
FKC	Florida Keys Coop
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
LCEC	Lee County Electric Coop
LWU	Lake Worth
NSB	New Smyrna Beach
OUC	Orlando Utilities Commission
PEF	Progress Energy Florida
SEC	Seminole Electric Cooperative
SCS	Southern Companies
STK	Starke
TEC	Tampa Electric Company
VER	Vero Beach

Figure I.A.3: FPL Interconnection Diagram

I.B Firm Capacity Power Purchases

Purchases from Qualifying Facilities (QF):

Firm capacity power purchases are an important part of FPL's resource mix. FPL currently has contracts with five qualifying facilities; i.e., cogeneration/small power production facilities, to purchase firm capacity and energy as shown in Table I.A.2, Table I.B.1, and 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.

Purchases from Utilities:

FPL has a Unit Power Sales (UPS) contract to purchase 931 MW, with a minimum of 380 MW, of coal-fired generation from the Southern Company (Southern) through May 2010. An additional contract with Southern will result in FPL receiving 930 MW from June 2010 through the end of December 2015. This capacity will be supplied by Southern from a mix of gas-fired and coal-fired units.

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) Units No. 1 and No. 2. However, due to Internal Revenue Service (IRS) regulations, the total amount of energy that FPL may receive from this purchase is limited. FPL currently assumes, for planning purposes, that this limit will be reached in the first half of 2016. Once this limit is reached, FPL will be unable to receive firm capacity and energy from these purchases.

These purchases are shown in Table I.A.2, Table I.B.1, and Table I.B.2. FPL also has ownership interest in the SJRPP units. The ownership amount is reflected in FPL's installed capacity shown on Figure I.A.1, in Table I.A.1, and on Schedule 1.

Other Purchases:

FPL has other firm capacity purchase contracts with a variety of Non-QF suppliers. These purchases are generally near-term in nature. Table I.B.1 and I.B.2 present the Summer and Winter MW, respectively, resulting from all firm purchased power contracts discussed above through the year 2018. For planning purposes, FPL assumes an additional 105 MW of firm capacity will be supplied from renewable energy sources. This firm capacity is expected to be provided from two sources including: 55 MW through contract extension with an existing renewable facility currently under contract with FPL but whose contract is set to expire in 2010, and 50 MW through one or more proposals received in response to a Renewable RFP, such as the RFP that FPL issued in April 2008.

Table I.B.1: FPL's Firm Purchased Power Summer MW

Summary of FPL's Firm Capacity Purchases: Summer MW (for August of Year Shown)

I. Purchases from QF's:

Cogeneration/Small Power Production Facilities	Contract Start Date	Contract End Date	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Broward South	04/01/91	08/01/09	0	0	0	0	0	0	0	0	0	0
Broward South	01/01/93	12/31/26	1	1	1	1	1	1	1	1	1	1
Broward South	01/01/95	12/31/26	2	2	2	2	2	2	2	2	2	2
Broward South	01/01/97	12/31/26	1	1	1	1	1	1	1	1	1	1
Broward North	04/01/92	12/31/10	45	45	0	0	0	0	0	0	0	0
Broward North	01/01/93	12/31/26	7	7	7	7	7	7	7	7	7	7
Broward North	01/01/95	12/31/26	2	2	2	2	2	2	2	2	2	2
Broward North	01/01/97	12/31/26	3	3	3	3	3	3	3	3	3	3
Cedar Bay Generating Co.	01/25/94	12/31/24	250	250	250	250	250	250	250	250	250	250
Indiantown Cogen., LP	12/22/95	12/01/25	330	330	330	330	330	330	330	330	330	330
Palm Beach SWA	04/01/92	03/31/10	50	0	0	0	0	0	0	0	0	0
Palm Beach SWA-extension	04/01/12	04/01/32	0	0	0	55	55	55	55	55	55	55
QF Purchases Sub Total:			**690**	**640**	**595**	**650**	**650**	**650**	**650**	**650**	**650**	**650**

II. Purchases from Utilities:

	Contract Start Date	Contract End Date	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
UPS from Southern Co.	07/20/88	05/31/10	931	0	0	0	0	0	0	0	0	0
UPS Replacement	06/01/10	12/31/15	0	930	930	930	930	930	930	0	0	0
SJRPP	04/02/82	04/01/16	381	381	381	381	381	381	381	0	0	0
Utility Purchases Sub Total:			**1,312**	**1,311**	**1,311**	**1,311**	**1,311**	**1,311**	**1,311**	**0**	**0**	**0**

Total of QF and Utility Purchases =			**2,002**	**1,951**	**1,906**	**1,961**	**1,961**	**1,961**	**1,961**	**650**	**650**	**650**

III. Other Purchases:

	Contract Start Date	Contract End Date	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Reliant/Indian River	01/01/06	12/31/09	250	0	0	0	0	0	0	0	0	0
Oleander (Extension)	06/01/07	05/31/12	156	156	156	0	0	0	0	0	0	0
Williams	03/01/06	12/31/09	106	0	0	0	0	0	0	0	0	0
Progress Energy Ventures	04/01/06	03/31/09	0	0	0	0	0	0	0	0	0	0
New Renewable Firm Capacity	Assumed	Assumed	0	0	0	0	0	50	50	50	50	50
Other Purchases Sub Total:			**512**	**156**	**156**	**0**	**0**	**50**	**50**	**50**	**50**	**50**

Total "Non-QF" Purchase Sub-Total =			**1,824**	**1,467**	**1,467**	**1,311**	**1,311**	**1,361**	**1,361**	**50**	**50**	**50**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Summer Firm Capacity Purchases Total MW:	**2,514**	**2,107**	**2,062**	**1,961**	**1,961**	**2,011**	**2,011**	**700**	**700**	**700**

Table I.B.2: FPL's Firm Purchased Power Winter MW

Summary of FPL's Firm Capacity Purchases: Winter MW (for January of Year Shown)

I. Purchases from QF's:

Cogeneration/Small Power Production Facilities	Start Date	End Date	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Broward South	04/01/91	08/01/09	51	0	0	0	0	0	0	0	0	0
Broward South	01/01/93	12/31/26	1	1	1	1	1	1	1	1	1	1
Broward South	01/01/95	12/31/26	2	2	2	2	2	2	2	2	2	2
Broward South	01/01/97	12/31/26	1	1	1	1	1	1	1	1	1	1
Broward North	04/01/92	12/31/10	45	45	0	0	0	0	0	0	0	0
Broward North	01/01/93	12/31/26	7	7	7	7	7	7	7	7	7	7
Broward North	01/01/95	12/31/26	2	2	2	2	2	2	2	2	2	2
Broward North	01/01/97	12/31/26	3	3	3	3	3	3	3	3	3	3
Cedar Bay Generating Co.	01/25/94	12/31/24	250	250	250	250	250	250	250	250	250	250
Indiantown Cogen., LP	12/22/95	12/01/25	330	330	330	330	330	330	330	330	330	330
Palm Beach SWA	04/01/92	03/31/10	50	50	0	0	0	0	0	0	0	0
Palm Beach SWA-extension	04/01/12	04/01/32	0	0	0	0	55	55	55	55	55	55
QF Purchases Sub Total:			**740**	**690**	**595**	**595**	**650**	**650**	**650**	**650**	**650**	**650**

II. Purchases from Utilities:

	Start Date	End Date	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
UPS from Southern Co.	07/20/88	05/31/10	931	931	0	0	0	0	0	0	0	0
UPS Replacement	06/01/10	12/31/15	0	0	930	930	930	930	930	0	0	0
SJRPP	04/02/82	04/01/16	390	390	390	390	390	390	390	390	0	0
Utility Purchases Sub Total:			**1,321**	**1,321**	**1,320**	**1,320**	**1,320**	**1,320**	**1,320**	**390**	**0**	**0**

Total of QF and Utility Purchases =	**2,061**	**2,011**	**1,915**	**1,915**	**1,970**	**1,970**	**1,970**	**1,040**	**650**	**650**

III. Other Purchases:

	Contract Start Date	Contract End Date	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Reliant/Indian River	01/01/06	12/31/09	250	0	0	0	0	0	0	0	0	0
Oleander (Extension)	06/01/07	05/31/12	180	180	180	180	0	0	0	0	0	0
Williams	03/01/06	12/31/09	106	0	0	0	0	0	0	0	0	0
Progress Energy Ventures	04/01/06	03/31/09	105	0	0	0	0	0	0	0	0	0
New Renewable Firm Capacity	Assumed	Assumed	0	0	0	0	0	50	50	50	50	50
Other Purchases Sub Total:			**641**	**180**	**180**	**180**	**0**	**50**	**50**	**50**	**50**	**50**

"Non-QF" Purchase Sub-Total =	**1,962**	**1,501**	**1,500**	**1,500**	**1,320**	**1,370**	**1,370**	**440**	**50**	**50**

	2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Winter Firm Capacity Purchases Total MW:	**2,702**	**2,191**	**2,095**	**2,095**	**1,970**	**2,020**	**2,020**	**1,090**	**700**	**700**

I.C Non-Firm (As Available) Energy Purchases

FPL purchases non-firm (as-available) energy from several cogeneration and small power production facilities. Table I.C.1 shows the amount of energy purchased in 2008 from these facilities.

Table I.C.1: As-Available Energy Purchases From Non-Utility Generators in 2008

Project	*County*	*Fuel*	*In-Service Date*	*Energy (MWH) Delivered to FPL in 2008*
Tropicana	Manatee	Natural Gas	2/90	24,266
Elliot	Palm Beach	Natural Gas	7/05	101
US Sugar-Bryant	Palm Beach	Bagassee	2/80	0
Okeelanta	Palm Beach	Bagassee/Wood	11/95	343,209
Georgia Pacific	Putnam	Paper by-product	2/94	1,232
Tomoka Farms	Volusia	Landfill Gas	7/98	20,140
Rothenbach Park	Sarasota	PV	10/07	269
Customer Owned PV	Various	PV	Various	167

I.D. Demand Side Management (DSM)

FPL has sought out and implemented cost-effective DSM programs since 1978. These programs include a number of conservation/energy efficiency and load management initiatives. FPL's DSM efforts through 2008 have resulted in a cumulative Summer peak reduction of approximately 4,109 MW at the generator and an estimated cumulative energy saving of approximately 46,646 Gigawatt Hour (GWh) at the generator. After accounting for reserve margin requirements, FPL's DSM efforts through 2008 have eliminated the need to construct the equivalent of approximately 12 new 400 MW generating units.

For purposes of the projections presented in this document, FPL is utilizing essentially the same projection of DSM that was utilized in FPL's 2008 Site Plan. This amount of DSM is based on: FPL's current DSM Goals that were approved by the Florida Public Service Commission through 2014, additional cost-effective DSM identified by FPL after these DSM Goals were established, and a projection of continued DSM implementation for 2015 – 2018 at an implementation rate commensurate with the projected annual rate of implementation for the years immediately preceding 2014.

FPL will be submitting proposed new DSM Goals for 2010 – 2019 to the FPSC in a June 2009 filing and the analysis work that will lead to FPL's proposed new DSM Goals is in its early stages as this document is prepared. A final order from the FPSC regarding the proposed DSM amounts is expected in the 4th Quarter of 2009. FPL will formally incorporate the approved new DSM Goals amounts into its resource planning work at that time. The new DSM Goals amounts, the approved DSM Plan with which FPL will achieve those Goals, and the resource planning work that incorporates this DSM will be presented in FPL's 2010 Site Plan.

Schedule 1

Existing Generating Facilities
As of December 31, 2008

(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/	
Plant Name	Unit No.	Location	Unit Type	Fuel Pri.	Fuel Alt.	Pri.	Alt.	Days Use	In-Service Month/Year	Retirement Month/Year	Nameplate KW	Winter MW	Summer MW
Cape Canaveral		Brevard County 19/24S/36F									804,100	796	792
	1		ST	FO6	NG	WA	PL	Unknown	Apr-65	Unknown	402,050	398	396
	2		ST	FO6	NG	WA	PL	Unknown	May-69	Unknown	402,050	398	396
Cutler		Miami Dade County 27/55S/40E									236,500	207	205
	5		ST	NG	No	PL	No	Unknown	Nov-54	Unknown	75,000	69	68
	6		ST	NG	No	PL	No	Unknown	Jul-55	Unknown	161,500	138	137
Fort Myers		Lee County 35/43S/25E									2,895,890	2,709	2,406
	2		CC	NG	No	PL	No	Unknown	Jun-02	Unknown	1,775,390	1,570	1,440
	3A & B		CT	NG	FO2	PL	PL	Unknown	Jun-03	Unknown	376,380	370	318
	1-12		GT	FO2	No	PL	No	Unknown	May-74	Unknown	744,120	769	648
Lauderdale		Broward County 30/50S/42E									1,873,968	1,988	1,724
	4		CC	NG	FO2	PL	PL	Unknown	May-93	Unknown	526,250	485	442
	5		CC	NG	FO2	PL	PL	Unknown	Jun-93	Unknown	526,250	485	442
	1-12		GT	NG	FO2	PL	PL	Unknown	Aug-70	Unknown	410,734	509	420
	13-24		GT	NG	FO2	PL	PL	Unknown	Aug-72	Unknown	410,734	509	420
Manatee		Manatee County 18/33S/20E									2,951,110	2,831	2,735
	1		ST	FO6	NG	WA	PL	Unknown	Oct-76	Unknown	863,300	822	812
	2		ST	FO6	NG	WA	PL	Unknown	Dec-77	Unknown	863,300	822	812
	3		CC	NG	No	PL	No	Unknown	Jun-05	Unknown	1,224,510	1,187	1,111

1/ These ratings are peak capability.

Schedule 1

Existing Generating Facilities
As of December 31, 2008

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
						Fuel		Alt. Fuel	Commercial	Expected	Gen.Max.	Net Capability 1/	
Plant Name	Unit No.	Location	Unit Type	Fuel Pri.	Fuel Alt.	Transport Pri.	Transport Alt.	Days Use	In-Service Month/Year	Retirement Month/Year	Nameplate KW	Winter MW	Summer MW
Martin		Martin County 29/29S/38E									4,317,510	3,827	3,701
	1		ST	FO6	NG	PL	PL	Unknown	Dec-80	Unknown	934,500	832	826
	2		ST	FO6	NG	PL	PL	Unknown	Jun-81	Unknown	934,500	832	826
	3		CC	NG	No	PL	No	Unknown	Feb-94	Unknown	612,000	498	472
	4		CC	NG	No	PL	No	Unknown	Apr-94	Unknown	612,000	498	472
	8*		CC	NG	FO2	PL	PL	Unknown	Jun-05	Unknown	1,224,510	1,167	1,105
Port Everglades		City of Hollywood 23/50S/42E									1,710,384	1,720	1,625
	1		ST	FO6	NG	WA	PL	Unknown	Jun-60	Unknown	247,775	214	213
	2		ST	FO6	NG	WA	PL	Unknown	Apr-61	Unknown	247,775	214	213
	3		ST	FO6	NG	WA	PL	Unknown	Jul-64	Unknown	402,050	389	387
	4		ST	FO6	NG	WA	PL	Unknown	Apr-65	Unknown	402,050	394	392
	1-12		GT	NG	FO2	PL	PL	Unknown	Aug-71	Unknown	410,734	509	420
Putnam		Putnam County 16/10S/27E									580,008	560	498
	1		CC	NG	FO2	PL	WA	Unknown	Apr-78	Unknown	290,004	280	249
	2		CC	NG	FO2	PL	WA	Unknown	Aug-77	Unknown	290,004	280	249
Riviera		City of Riviera Beach 33/42S/43E									620,840	571	565
	3		ST	FO6	NG	WA	PL	Unknown	Jun-62	Unknown	310,420	280	277
	4		ST	FO6	NG	WA	PL	Unknown	Mar-63	Unknown	310,420	291	288
Sanford		Volusia County 16/19S/30E									2,533,970	2,217	2,050
	3		ST	FO6	NG	WA	PL	Unknown	May-59	Unknown	156,250	140	138
	4		CC	NG	No	PL	No	Unknown	Oct-03	Unknown	1,188,860	1,040	958
	5		CC	NG	No	PL	No	Unknown	Jun-02	Unknown	1,188,860	1,037	954

1/ These ratings are peak capability.
* Martin 8 A and B combustion turbine units went into service on 6/14/2001 and the conversion to Combined Cycle went into service 6/30/2005.

Schedule 1

Existing Generating Facilities
As of December 31, 2008

(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
Scherer 2/		Monroe, GA									680,368	652	646
	4		BIT	BIT	No	RR	No	Unknown	Jul-89	Unknown	680,368	652	646
St. Johns River Power Park 3/		Duval County 12/15/28E (RPC4)									271,836	250	254
	1		BIT	BIT	Pet	RR	WA	Unknown	Mar-87	Unknown	135,918	125	127
	2		BIT	BIT	Pet	RR	WA	Unknown	May-88	Unknown	135,918	125	127
St. Lucie		St. Lucie County 16/36S/41E									1,573,775	1,579	1,553
	1		NP	UR	No	TK	No	Unknown	May-76	Unknown	850,000	853	839
	2	4/	NP	UR	No	TK	No	Unknown	Jun-83	Unknown	723,775	726	714
Turkey Point		Miami Dade County 27/57S/40E									3,560,548	3,451	3,334
	1		ST	FO6	NG	WA	PL	Unknown	Apr-67	Unknown	402,050	398	396
	2		ST	FO6	NG	WA	PL	Unknown	Apr-68	Unknown	402,050	394	392
	3		NP	UR	No	TK	No	Unknown	Nov-72	Unknown	759,900	717	693
	4		NP	UR	No	TK	No	Unknown	Jun-73	Unknown	759,900	717	693
	5		CC	NG	FO2	PL	PL	Unknown	May-07	Unknown	1,224,510	1213	1,148
	1-5		IC	FO2	No	TK	No	Unknown	Dec-67	Unknown	12,138	12	12
										Total System as of December 31, 2008 =		**23,358**	**22,087**

1/ These ratings are peak capability.

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

3/ 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%.

4/ Total capability of each unit is 853/839 MW. FPL's ownership share of St. Lucie 1 and 2 is 100%(853/839) and 85% (714/726) respectively as shown above. FPL's share of the deliverable capacity from each unit is approx. 92.5% and exclude the Orlando Utilities Commission (OUC) and Florida Municipal Power Agency (FMPA) combined portion of approximately 7.44776% per unit.

CHAPTER II

Forecast of Electric Power Demand

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II. Forecast of Electric Power Demand

II. A. Overview of the Load Forecasting Process

Long-term (20-year) forecasts of sales, net energy for load (NEL), and peak loads are typically developed on an annual basis for resource planning work at FPL. New long-term forecasts were developed by FPL in January 2009 that replaced the previous long-term load forecasts that were used by FPL during 2008 in much of its resource planning work and which were presented in FPL's 2008 Site Plan. These new load forecasts are utilized throughout FPL's 2009 Site Plan. These forecasts are a key input to the models used to develop FPL's integrated resource plan. The following pages describe how forecasts are developed for each component of the long-term forecast: sales, NEL, and peak loads.

Consistent with past forecasts, the primary drivers to develop these forecasts include economic conditions and weather.

The projections for the national and Florida economies are obtained from the consulting firm Global Insight. Population projections are obtained from the Bureau of Economic and Business Research (BEBR) of the University of Florida. These inputs are quantified and qualified using statistical models in terms of their impact on the future demand for electricity.

Weather is always a key factor that affects FPL's energy sales and peak demand. Two sets of weather variables are developed and used in FPL's forecasting models:

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

The Cooling and Heating Degree-Hours are used to capture the changes in the electric usage of weather-sensitive appliances such as air conditioners and electric space heaters. A composite temperature hourly profile 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. In developing the composite hourly profile, these regional temperatures are weighted by regional energy sales. This composite temperature is used to derive Cooling and Heating Degree-Hours which are based on starting point temperatures of 72°F and 66°F degrees, respectively. Similarly, composite temperature and hourly profile of temperatures are used for the Summer and Winter peak models.

II. B. Comparison of FPL's Current and Previous Load Forecasts

FPL's current load forecast is significantly different from the load forecast presented in its 2008 Site Plan. The current load forecast projects lower load growth. There are three factors that are the primary drivers behind the lower load forecast: projected lower population growth, higher energy efficiency impacts from new enhanced federal standards for appliance and lighting efficiency, and the effects of a lingering recession.

The customer forecast is based on a review of recent population projections from the University of Florida and Global Insight, as well as an analysis of historical population trends. Population projections through 2011 are derived from the University of Florida's October 2008 population projections which are significantly lower than prior projections. According to the University of Florida, net migration has fallen to a record low as a result of the economic slowdown and is expected to remain at historically low levels until 2010. Consequently, FPL's projects that customer growth in 2009 and 2010 will be significantly below the historical average. As population growth recovers, a modest rebound in customer growth is projected in 2011. Population growth after 2011 is based on the average levels experienced historically. As a result of lower growth in the initial years of the forecast, the total number of customers in the current load forecast remains below the levels projected in FPL's 2008 Site Plan in all years.

The impact of higher energy efficiency resulting from new federal standards for appliances and lighting is based on estimates developed by ITRON, an energy industry consulting firm. ITRON developed estimates for the impact of the 2005 National Energy Policy Act, the 2007 Energy Independence and Security Act, and the naturally occurring energy reductions resulting from the adoption of compact florescent light bulbs. As a result of these appliance and lighting standards, FPL now projects that by 2018, FPL's Summer peak demand will be approximately 2,095 MW lower than it otherwise would have been. This projected impact from higher appliance and lighting standards is 839 MW more than the 1,256 MW reduction assumed in the 2008 Site Plan. In the 2008 Site Plan, only the impact of the 2005 National Energy Policy Act was considered.

Economic conditions in the state are also projected to have a significant impact on the forecast. Economic conditions in the state have deteriorated significantly since the 2008 Site Plan was published. After leading the nation in job creation, Florida is now leading the nation in job losses. Likewise, Florida now ranks second in the nation in terms of foreclosures and personal bankruptcies. The severity of current economic conditions

suggests that Florida will likely experience a longer recession than that projected by Global Insight. Based on the examination of past recessions and review of forecasts from a number of outside experts, FPL developed an economic outlook reflecting a lingering recession through 2010 and below average growth in 2011. A resumption of cyclical growth, as forecasted by Global Insight, is forecasted by 2012.

Although the projected load growth for FPL is below that presented in FPL's 2008 Site Plan, the total growth projected by FPL for the ten-year reporting period of this document is still substantial. The Summer peak is projected to increase to 26,143 MW by 2018, an increase of 5,066 MW over the 2008 actual summer peak. Likewise, NEL is projected to reach 132,136 GWH in 2018, an increase of 21,092 GWH from the actual 2008 value. This compares to projected increases of 6,659 MW and 41,352 GWH over the ten-year reporting period presented in FPL's 2008 Site Plan compared to the 2007 actual values.

II.C. Long-Term Sales Forecasts

Long-term forecasts of electricity sales were developed for each revenue class for the forecasting period of 2009-2027 and are adjusted to match the NEL forecast. The results of these sales forecasts for the years 2009-2018 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 software package MetrixND. The methodologies used to develop energy sales forecasts for each jurisdictional revenue class and NEL forecast are outlined below.

1. **Residential Sales**

   Residential electric usage per customer is estimated by using an econometric model. Residential sales are a function of: Cooling Degree-Hours and Heating Degree-Hours, real price of electricity (a 12-month moving average), Florida real household disposable income, dummy variables for the month of January and the specific month of November 2005, and an intercept term. A dummy variable for the calendar month of January was included to improve the predictability of the model by accounting for the otherwise higher than predicted usage in that model. A dummy variable for November 2005 was included because an analysis of residuals identified that data point as an outlier. The price of electricity plays a role in explaining electric usage, because electricity, like all other goods and services, will be used in greater or lesser quantities depending upon its price. To capture economic conditions, the model includes Florida's real household disposable income. The degree of economic

prosperity can, and does, affect residential electricity sales. The impact of weather is captured by the Cooling Degree-Hours and Heating Degree-Hours. Residential energy sales are forecast by multiplying the residential use per customer forecast by the number of residential customers forecasted.

2. **Commercial Sales**

   The commercial sales forecast is also developed using an econometric model. Commercial sales are a function of the following variables: Florida non-agricultural employment, commercial real price of electricity (a 12-month moving average), Cooling Degree-Hours, as well as an autoregressive term. The price of electricity is also included as an explanatory variable in the model because it has an impact on customer usage. Cooling Degree-Hours are used to capture weather-sensitive load in the commercial sector. The model also includes an intercept and two binary variables to account for statistical outliers in November 2005 and January 2007.

3. **Industrial Sales**

   Industrial sales were forecasted using an econometric model. The model utilizes the following variables: Florida Housing Starts, Cooling Degree-Hours, industrial real price of electricity (a 24-month moving average), and several dummy variables for outliers. The Cooling Degree-Hour is used to capture the weather-sensitive load in the industrial class.

4. **Railroad & Railways Sales and Street and Highway Sales**

   The forecast for street and highway sales is developed using historical usage patterns and multiplying these usage levels by the number of forecasted customers. The projections for railroad & railways sales are based on historical average use per customer because the number of customers is projected to remain the same. This class consists solely of the Miami-Dade County's Metrorail system.

5. **Other Public Authority Sales**

   This revenue class is a closed class with no new customers being added. This class consists of sports fields and a government account. The forecast for this class is based on historical knowledge of its usage characteristics.

6. **Total Sales to Ultimate Customer**

   Sales forecasts by revenue class are summed to produce a total sales forecast.

7. Sales for Resale

Sales for resale (wholesale) customers are composed of municipalities and/or electric co-operatives. 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; City of Key West; Metro-Dade County; and Seminole Electric Cooperative. In addition, FPL will begin serving the Lee County load in 2010.

FPL provides service to the Florida Keys under a long-term partial requirements contract. The sales for Florida Keys are forecasted using a regression model.

FPL's sales to the City of Key West are expected to terminate in 2013. Forecasted sales to the City of Key West are based on assumptions regarding their contract demand and expected load factor.

Metro-Dade County sells 60 MW to Florida Progress. Line losses are billed to Metro-Dade under a wholesale contract.

Seminole Electric Cooperative has contracted for delivery of 75 MW for the period of December 2008 through December 2009. Also included in the forecast is a 200 MW sale to Seminole Electric beginning in June 2014 to December 2040.

Lee County has contracted for FPL to supply a portion of their load beginning in January 2010 and for FPL to supply their total load beginning in January 2014 through December 2033. Forecasted sales to Lee County are based on assumptions regarding their contract demand and expected load factor.

II.D. Net Energy for Load (NEL)

An econometric model is developed to produce an NEL forecast. The key inputs to the model are: the real price of electricity (a 12-month moving average), Cooling and Heating Degree-Hours, and Florida real household disposable income. In addition, the model also includes an autoregressive term as well as a dummy variable for the calendar month of February. A dummy variable for the calendar month of February was added to account for the lower than otherwise predicted usage associated with that month.

The forecast is further adjusted for the impacts of the 2005 National Energy Policy Act, the 2007 Energy Independence and Security Act, and compact florescent light bulbs. The forecast was also adjusted for additional load estimated from hybrid cars beginning in 2012 which resulted in an increase of approximately 244 GWH by the end of the ten-year reporting period. An adjustment was also made to the forecast to account for the increase in the number of empty homes which has resulted from the current housing slump. Because the increase in empty homes is viewed as a cyclical phenomenon, only the initial years of the forecast were impacted by this adjustment.

Once the NEL forecast is obtained using the above-mentioned model, total billed sales are computed using a historical ratio of sales to NEL. The sales by class forecasts previously discussed are then adjusted to match the NEL from the annual NEL model. The forecasted NEL values for 2009 – 2018 are presented in Schedule 3.3 that appears at the end of this chapter.

II.E. System Peak Forecasts

The rate of absolute growth in FPL system peak load has been a function of a growing customer base, varying weather conditions, projected economic growth, changing patterns of customer behavior (including an increased stock of electricity-consuming appliances), and more efficient appliances and lighting. FPL developed the peak forecast models to capture these behavioral relationships. Similar to the NEL forecast, the peak forecasts are also adjusted for the empty homes in the first three years of the forecast horizon as well as for the impacts of the 2005 National Energy Policy Act, the 2007 Energy Independence and Security Act, and the impact of compact fluorescent light bulbs. The forecast was also adjusted for additional load estimated from hybrid cars which resulted in an increase of approximately 49 MW by the end of the ten-year reporting period.

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 2009–2018 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 variables included in the model are the price of electricity, Florida real household disposable income, Cooling Degree-Hours in the day prior to the peak, and the average

temperature on the day of the peak. The model below is based on the Summer peak contribution per customer and is, therefore, multiplied by total customers to derive FPL's system Summer peak.

2. **System Winter Peak**

Like the system Summer peak model, this model is also an econometric model. The model consists of two weather-related variables: the average temperature on the peak day and Heating Degree-Hours for the prior day as well as for the morning of the Winter peak day. In addition, Florida real household disposable income is a variable used in the model. The model below is based on the Winter peak contribution per customer and is, therefore, multiplied by total customers to derive FPL's system Winter peak.

3. **Monthly Peak Forecasts**

The forecasting process for monthly peaks 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 peaks.

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.F. The Hourly Load Forecast

Forecasted values for system hourly load for the period 2009-2027 are produced using a System Load Forecasting "shaper" program. This model uses years of historical FPL hourly system load data to develop load shapes for weekdays, weekend days, and holidays. 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.

II.G. Uncertainty

In order to address uncertainty in the forecasts of aggregate peak demand and NEL, FPL first evaluates the assumptions underlying the forecasts. FPL takes a series of steps in evaluating the input variables, including comparing projections from different sources,

identifying outliers in the series, and assessing the series' consistency with past forecasts. In addition, FPL reviews factors which may affect the input variables. This may require reviewing data from local economic development boards or from FPL's own Customer Service Business Unit. Other factors which may be considered include demographic trends and housing characteristics such as starts, size, and vintage of homes.

Uncertainty is also addressed in the modeling process. Generally, econometric models are used to forecast the aggregate peak demand and NEL. During the modeling process, the relevant statistics (goodness of fit, F-statistic, P-values, mean absolute deviation (MAD), mean absolute percentage error (MAPE), etc.) are scrutinized to ensure that the models adequately explain historical variation. Once a forecast is developed, it is compared with past forecasts. Deviations from past forecasts are examined in light of changes in input assumption to ensure that the drivers underlying the forecast are well understood. Finally, forecasts of aggregate peak demand and NEL are compared with their actual values as they become available. An ongoing process of variance analyses is performed. To the extent that the variance analysis identifies large unexplained deviations between the forecast and actual values, revisions to the econometric model may be considered.

The inherent uncertainty in load forecasting is addressed in different ways in regard to FPL's overall resource planning and operational planning work. In regard to FPL's resource planning work, FPL's utilization of a 20% reserve margin criterion (approved by the FPSC) is designed, in part, to maintain reliable electric service for FPL's customers in light of forecasting uncertainty. In regard to operational planning, a extreme weather load forecast for the projected Summer peak day is produced. The maximum average temperature on the day of the Summer peak over the last twenty years is used to produce this extreme weather forecast. Likewise, the minimum average temperature on the day of the Winter peak is used to estimate the extreme weather Winter peak forecast. The extreme weather scenarios are typically estimated for a two-to- five year period.

II.H. DSM

The effects of FPL's DSM implementation to-date are assumed to be imbedded in the actual usage data for forecasting purposes. Any change in usage pattern, be it the impact of FPL's DSM efforts, price impact, or weather impact, is reflected in the actual observed load data. Therefore, energy efficiency impacts, whether market-driven or as a

result of FPL's DSM programs, are assumed to be included in the historical usage data for peaks and NEL.

The load forecasts provided in the schedules at the end of this chapter are not adjusted for incremental energy efficiency that FPL plans to implement in future years. The impacts of this incremental energy efficiency, plus the impacts of FPL's cumulative and incremental load management programs, are accounted for as "line item reductions" to the forecasts as part of the IRP process as shown in Schedules 7.1 and 7.2. After making these adjustments to the load forecasts, the resulting "firm" load forecast is then used in FPL's IRP work.

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 1/	Members per Household	GWH 2/	Average 3/ No. of Customers	Average KWH Consumption Per Customer	GWH 2/	Average 3/ No. of Customers	Average KWH Consumption Per Customer
1999	7,412,744	2.22	44,187	3,332,422	13,260	35,524	404,942	87,725
2000	7,603,964	2.23	46,320	3,414,002	13,568	37,001	415,295	89,096
2001	7,754,846	2.22	47,588	3,490,541	13,633	37,960	426,573	88,989
2002	7,898,628	2.21	50,865	3,566,167	14,263	40,029	435,313	91,955
2003	8,079,316	2.21	53,485	3,652,663	14,643	41,425	444,650	93,163
2004	8,247,442	2.20	52,502	3,744,915	14,020	42,064	458,053	91,832
2005	8,469,602	2.21	54,348	3,828,374	14,196	43,468	469,973	92,490
2006	8,620,855	2.21	54,570	3,906,201	13,970	44,487	478,930	92,889
2007	8,729,806	2.19	55,138	3,981,451	13,849	45,921	493,130	93,121
2008	8,771,694	2.20	53,229	3,992,257	13,333	45,561	500,748	90,987
2009	8,775,903	2.20	52,041	3,994,173	13,029	44,878	509,881	88,016
2010	8,812,518	2.20	51,427	4,010,837	12,822	45,417	521,804	87,039
2011	8,912,688	2.20	51,654	4,056,428	12,734	46,620	534,717	87,187
2012	9,100,508	2.20	52,438	4,141,910	12,660	48,460	548,319	88,380
2013	9,287,417	2.20	52,639	4,226,978	12,453	49,537	562,200	88,113
2014	9,472,518	2.20	52,818	4,311,223	12,251	51,273	576,590	88,924
2015	9,656,156	2.20	53,087	4,394,802	12,080	52,822	591,382	89,319
2016	9,838,819	2.20	53,614	4,477,937	11,973	54,515	606,467	89,889
2017	10,020,376	2.20	54,249	4,560,569	11,895	56,233	621,955	90,414
2018	10,200,558	2.20	55,175	4,642,575	11,885	58,198	637,980	91,222

Historical Values (1999 - 2008):

1/ Population represents only the area served by FPL.

2/ Actual energy sales include the impacts of existing conservation. These values are at the meter.

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

Projected Values (2009 - 2018):

1/ Population represents only the area served by FPL.

2/ Forecasted energy sales do not include the impact of incremental conservation. These values are at the meter.

3/ 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	Total [4/]
		Average [3/]	Average KWH	&	Highway	Sales to	Sales to
		No. of	Consumption	Railways	Lighting	Public	Ultimate
Year	GWH [2/]	Customers	Per Customer	GWH	GWH [2/]	Authorities GWH	Consumers GWH
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	3,964	18,512	214,139	93	413	58	99,095
2005	3,913	20,392	191,873	95	424	49	102,296
2006	4,036	21,216	190,232	94	422	49	103,659
2007	3,774	18,732	201,499	91	437	53	105,415
2008	3,587	13,377	268,168	81	423	37	102,919
2009	3,584	12,527	286,133	91	446	37	101,078
2010	3,606	12,686	284,271	91	451	36	101,029
2011	3,656	12,980	281,675	91	457	35	102,514
2012	3,690	13,257	278,319	91	464	34	105,177
2013	3,687	13,397	275,187	91	474	33	106,461
2014	3,676	13,497	272,380	91	484	33	108,375
2015	3,662	13,575	269,744	91	494	33	110,188
2016	3,645	13,604	267,928	91	504	33	112,401
2017	3,631	13,604	266,896	91	515	33	114,752
2018	3,622	13,610	266,117	91	525	33	117,644

Historical Values (1999 - 2008):

2/ Actual energy sales include the impacts of existing conservation.

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

4/ GWH Col. (16) = Col. (4) + Col. (7) + Col. (10) + Col. (13) + Col. (14) + Col. (15).

Projected Values (2009 - 2018):

2/ Forecasted energy sales do not include the impact of incremental conservation.

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

4/ 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 [5/] Energy For Load GWH [6/]	Average [3/] No. of Other Customers	Total Average [3,7/] Number of Customers
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	1,531	7,464	108,091	3,029	4,224,509
2005	1,506	7,498	111,301	3,157	4,321,896
2006	1,569	7,909	113,137	3,216	4,409,563
2007	1,499	7,401	114,315	3,276	4,496,589
2008	993	7,092	111,004	3,347	4,509,729
2009	1,149	7,213	109,440	3,405	4,519,986
2010	2,137	7,042	110,207	3,435	4,548,763
2011	2,252	7,161	111,926	3,470	4,607,594
2012	2,280	7,358	114,815	3,519	4,707,005
2013	2,172	7,394	116,027	3,580	4,806,155
2014	5,122	7,631	121,128	3,649	4,904,959
2015	5,844	7,768	123,800	3,722	5,003,480
2016	5,952	7,925	126,278	3,796	5,101,804
2017	6,070	8,087	128,908	3,871	5,199,999
2018	6,202	8,289	132,136	3,946	5,298,111

Historical Values (1999 - 2008):

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

5/ GWH Col. (19) = Col. (16) + Col. (17) + Col. (18). Actual NEL include the impacts of existing conservation and agrees to Col. (8) on Schedule 3.3.

6/ Actual energy sales include the impacts of existing conservation. These values are at the generator.

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

Projected Values (2009 - 2018):

2/ Forecasted energy sales do not include the impact of incremental conservation and agrees to Col. (2) on Schedule 3.3.

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

5/ GWH Col. (19) = Col. (16) + Col. (17) + Col. (18). Matches to Col (2) on Schedule 3.3 for Forecasted \

6/ 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)	(11)
August of Year	Total	Wholesale	Retail	Interruptible	Res. Load Management	Residential Conservation	C/I Load Management	Small Business Load Management	C/I Conservation	Net Firm Demand
1999	17,615	169	17,446	0	673	592	438	15	420	16,490
2000	17,808	161	17,647	0	719	645	448	19	451	16,622
2001	18,754	169	18,585	0	737	697	449	40	481	17,529
2002	19,219	261	18,958	0	770	755	441	49	517	17,960
2003	19,668	253	19,415	0	781	799	516	61	554	18,310
2004	20,545	258	20,287	0	783	847	517	71	578	19,174
2005	22,361	264	22,097	0	790	895	516	84	611	20,971
2006	21,819	256	21,563	0	809	948	516	120	640	20,375
2007	21,962	261	21,701	0	954	982	515	200	683	20,293
2008	21,060	181	20,879	0	974	1042	538	221	705	19,327
2009	21,124	241	20,882	0	1,016	76	753	86	65	19,128
2010	21,147	381	20,765	0	1,034	122	772	93	98	19,028
2011	21,368	385	20,983	0	1,053	171	780	100	132	19,132
2012	21,933	393	21,540	0	1,073	222	788	107	167	19,576
2013	22,249	354	21,895	0	1,095	275	796	114	203	19,766
2014	23,533	1,184	22,349	0	1,120	329	804	121	240	20,919
2015	24,142	1,205	22,937	0	1,146	385	812	128	278	21,393
2016	24,772	1,229	23,543	0	1,172	440	820	136	316	21,888
2017	25,401	1,256	24,145	0	1,198	496	828	143	353	22,383
2018	26,143	1,284	24,860	0	1,207	514	831	145	366	23,080

Historical Values (1999 - 2008):

Col. (2) - Col. (4) are actual values for historical summer peaks. As such, they incorporate the effects of conservation (Col. 7 & Col. 10), 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. (10) for 1999 through 2008 represent actual DSM capabilities starting from January 1988 and are annual (12-month) values. Note that the values for FPL's former Interruptible Rate are incorporated into Col. (8), which also includes Business On Call (BOC) and Commercial /Industrial Demand Reduction (CDR).

Col (9) represents FPL's Business On Call program.

Col. (11) represents a HYPOTHETICAL "Net Firm Demand" if the load control values had definitely been exercised on the peak. Col. (11) is derived by the formula:Col. (11) = Col.(2) - Col.(6) - Col.(8)- Col. (9).

Projected Values (2009 - 2018):

Col. (2) - Col.(4) represent FPL's forecasted peak w/o incremental conservation or cumulative load control. The effects of conservation implemented prior to 2004 are incorporated into the load forecast.

Col. (5) - Col. (10) represent all incremental conservation,current load management and incremental load management. These values are projected August values and the conservation values are based on projections with a 1/2008 starting point designed for use with the 2008 load forecast.

Col (9) represents FPL's Business On Call program.

Col. (11) 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. (11) is derived by using the formula: Col. (11) = Col. (2) - Col. (5) - Col. (6) - Col. (7) - Col. (8) - Col. (9)-Col (10).

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
January of Year	Total	Firm Wholesale	Retail	Interruptible	Res. Load Management	Residential Conservation	C/I Load Management	Small Business Load Management	C/I Conservation	Net Firm Demand
2000	17,057	142	16,915	0	741	434	438	0	176	15,878
2001	18,199	150	18,049	0	791	459	448	0	183	16,960
2002	17,597	145	17,452	0	811	500	457	0	196	16,329
2003	20,190	246	19,944	0	847	546	453	0	206	18,890
2004	14,752	211	14,541	0	857	570	532	0	230	13,363
2005	18,108	225	17,883	0	862	583	542	0	233	16,704
2006	19,683	225	19,458	0	870	600	550	0	240	18,263
2007	16,815	223	16,592	0	894	620	577	0	249	15,344
2008	18,055	163	17,892	0	879	644	635	0	279	16,541
2009	20,031	216	19,815	0	922	48	729	0	31	18,380
2010	18,790	329	18,461	0	938	73	767	0	41	16,971
2011	19,120	334	18,786	0	955	105	775	0	53	17,232
2012	19,710	340	19,370	0	973	138	783	0	67	17,749
2013	20,098	346	19,752	0	992	171	791	0	81	18,063
2014	21,154	878	20,276	0	1,012	205	799	0	97	19,041
2015	21,882	1,100	20,783	0	1,036	239	807	0	113	19,687
2016	22,396	1,123	21,273	0	1,060	273	815	0	130	20,118
2017	22,912	1,148	21,764	0	1,084	307	823	0	146	20,552
2018	23,466	1,173	22,293	0	1,106	338	831	0	161	21,030

Historical Values (1999 - 2008):

Col. (2) - Col. (4) are actual values for historical winter peaks. As such, they incorporate the effects of conservation (Col. 7 & Col. 10), 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.(10) for 2000 through 2008 represent actual DSM capabilities starting from January 1988 and are annual (12-month) values. Note that the values for FPL's former Interruptible Rate are incorporated into Col. (8), which also includes Business On Call (BOC) and Commercial/Industrial Demand Reduction (CDR).

Col (9) represents FPL's Business On Call program.

Col. (11) represents a HYPOTHETICAL "Net Firm Demand" if the load control values had definitely been exercised on the peak. Col. (11) is derived by the formula: Col. (11) = Col. (2) - Col. (6) - Col. (8).

Projected Values (2009 - 2018):

Col. (2) - Col.(4) represent FPL's forecasted peak w/o incremental conservation or cumulative load control. The effects of conservation implemented prior to 2004 are incorporated into the load forecast.

Col. (5) - Col.(10) represent all incremental conservation and cumulative load control. These values are projected January values and the conservation values are based on projections with a 1/2008 starting point designed for use with the 2008 load forecast.

Col (9) represents FPL's Business On Call program.

Col. (11) 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. (11) is derived by using the formula: Col. (11) = Col. (2) - Col. (5) - Col. (6) - Col. (7) - Col. (8) - Col. (9)- Col.(10).

Schedule 3.3
History of Annual Net Energy for Load - GWH: Base Case
(All values are "at the generator"value except for Col (8))

(1)	(2) = (3) + (3) + (5)	(3)	(4)	(5)	(6)	(7)	(8) = (5) - (6) - (7)	(9)
Year	Total Net Energy For Load without DSM	Residential Conservation	C/I Conservation	**Actual** Net Energy For Load	Sales for Resale GWH	Utility Use & Losses	**Actual** Total Billed Retail Energy Sales (GWH)	Load Factor(%)
1999	94,365	1,542	1,365	91,458	953	5,829	84,676	59.3%
2000	99,097	1,674	1,434	95,989	970	7,059	87,960	61.4%
2001	101,739	1,789	1,545	98,404	970	7,222	90,212	59.9%
2002	107,755	1,917	1,639	104,199	1,233	7,443	95,523	61.9%
2003	112,160	2,008	1,759	108,393	1,511	7,386	99,496	62.9%
2004	112,031	2,106	1,834	108,091	1,531	7,464	99,095	59.9%
2005	115,440	2,205	1,934	111,301	1,506	7,498	102,296	56.8%
2006	117,490	2,312	2,041	113,137	1,569	7,909	103,659	59.2%
2007	118,894	2,373	2,206	114,315	1,499	7,401	105,415	59.4%
2008	115,755	2,485	2,267	111,004	993	7,092	102,919	60.0%

Historical Values (1999 - 2008):

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. (5).

Col.(3) & Col.(4) for 1999 through 2008 are DSM values starting in January 1988 and are annual (12-month) values.Col. (3) and Col. (4) for 2008 are "estimated actuals" and are also annual (12-month) values. The values represent the total GWH reductions actually experienced each year .

Col. (5) is the actual Net Energy for Load (NEL) for years 1999 - 2008.

Col. (8) is the Total Retail Billed Sales. The values are calculated using the formula: Col. (8) = Col. (5) - Col. (6) - Col. (7).

Col. (9) is calculated using Col. (5) from this page and Col. (2), "Total", from Schedule 3.1 using the formula: Col. (9) = ((Col. (5)*1000) / ((Col.(2) * 8760) Adjustments are made for leap years.

Forecast of Annual Net Energy for Load - GWH: Base Case
(All values are "at the generator"value except for Col (8))

(1)	(2)	(3)	(4)	(5) = (2) - (3) - (4)	(6)	(7)	(8) = (2) - (6) - (7)	(9)
Year	**Forecasted** Net Energy For Load without DSM	Residential Conservation	C/I Conservation	Net Energy For Load Adjusted for DSM	Sales for Resale GWH	Utility Use & Losses	**Forecasted** Total Billed Retail Energy Sales (GWH) without DSM	Load Factor(%)
2009	109,440	142	106	109,192	1,149	7,213	101,078	59.1%
2010	110,207	236	155	109,816	2,137	7,042	101,029	59.5%
2011	111,926	334	207	111,386	2,252	7,161	102,514	59.8%
2012	114,815	434	261	114,119	2,280	7,358	105,177	59.6%
2013	116,027	539	319	115,169	2,172	7,394	106,461	59.5%
2014	121,128	647	380	120,102	5,122	7,631	108,375	58.8%
2015	123,800	754	440	122,605	5,844	7,768	110,188	58.5%
2016	126,278	862	501	124,915	5,952	7,925	112,401	58.0%
2017	128,908	970	562	127,376	6,070	8,087	114,752	57.9%
2018	132,136	1,078	564	130,494	6,202	8,289	117,644	57.7%

Forecasted Values (2009 - 2018):

Col. (2) represents Forecasted Net Energy for Load w/o DSM values. The values are extracted from Schedule 2.3, Col. (19).

Col. (3) & Col. (4) are forecasted values of the reduction on sales from incremental conservation and are mid-year (6-month) values. The effects of conservation implemented prior to 2009 are incorporated into the load forecast.

Col. (5) is the forecasted Net Energy for Load (NEL) with DSM for years 2008 - 2017. Col (5) = Col (2) -Col (3) - Col (4).

Col. (8) is the Retail Billed Sales. The values are calculated using the formula: Col. (8) = Col. (2) - Col. (6) - Col. (7).These values are at the meter.

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)
	2008 ACTUAL		2009* FORECAST		2010* FORECAST	
Month	Total Peak Demand MW	NEL GWH	Total Peak Demand MW	NEL GWH	Total Peak Demand MW	NEL GWH
JAN	18,055	8,230	18,697	7,970	18,790	7,981
FEB	15,735	7,843	15,443	7,225	15,533	7,265
MAR	16,226	8,258	16,260	8,039	16,265	8,094
APR	16,995	8,815	17,389	8,451	17,462	8,506
MAY	20,289	9,814	19,369	9,338	19,429	9,382
JUN	20,565	10,836	20,122	10,369	20,192	10,401
JUL	20,951	10,374	20,809	10,780	20,873	10,834
AUG	21,060	11,090	21,124	10,985	21,147	11,041
SEP	20,456	11,102	20,650	10,635	20,696	10,702
OCT	18,752	9,254	19,253	9,446	19,287	9,547
NOV	16,538	7,886	16,788	8,265	16,835	8,384
DEC	14,849	7,502	15,786	7,936	15,791	8,070
TOTALS		111,004		109,440		110,207

* 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.

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 1990s and has since utilized the process to determine when new resources are needed, what the magnitude of the needed resources are, and what type of resources should be added. The timing and type of new power plants, the primary subjects of this document, are determined as part of the IRP process work. This section discusses how FPL applied this process in its 2008 and early 2009 resource planning work.

Four Fundamental Steps of FPL's Resource Planning:

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

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

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

Step 3: Evaluate the competing options and resource plans in regard to system economics and non-economic factors; and,

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

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

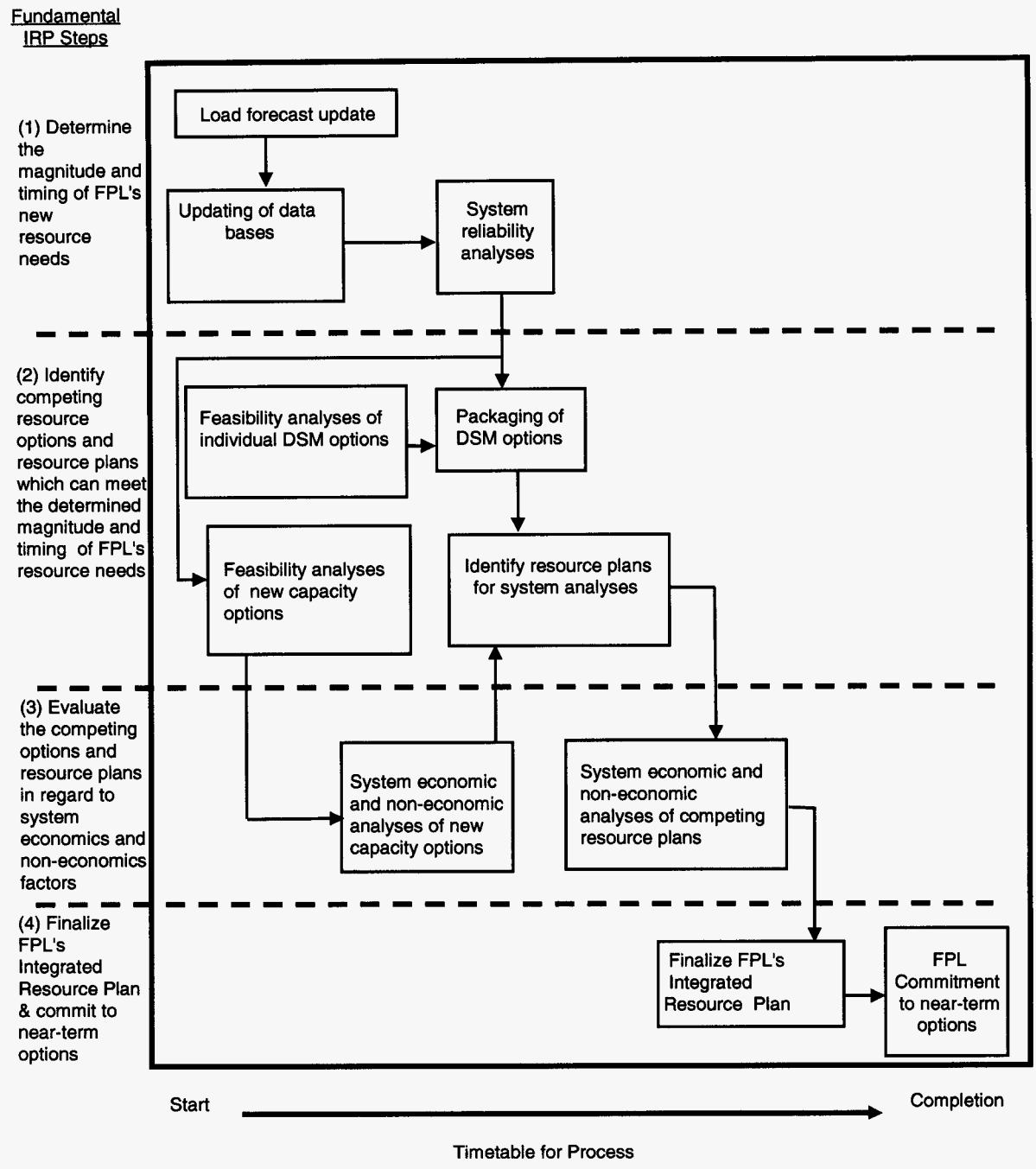

Figure III.A.1: Overview of FPL's IRP Process

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

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

Step 1 typically 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 that is used in many of the fundamental steps in resource planning. Examples of this new information include, but not limited to: delivered fuel price projections, current financial and economic assumptions, and power plant capability and reliability assumptions. FPL also includes key assumptions regarding three specific resource areas: (1) near-term construction capacity additions, (2) firm capacity power purchases, and (3) DSM implementation.

The first of these assumptions is based on new generating capacity additions that have been approved by the Florida Public Service Commission (FPSC) through Determination of Need hearings that evaluated both the need for, and the cost-effectiveness of, each of the new capacity additions. These generating capacity additions have also either received the necessary Site Certification approvals from either the Secretary of the Florida Department of Environmental Protection (FDEP) or the Governor and Cabinet (acting as the Siting Board) or, as in the case of the new nuclear units, are in the process of receiving the necessary state and federal approvals. A number of new generating unit additions will occur in the 2009 – 2018 time frame that is addressed in this document.

These generating unit additions include:

- Three new natural gas-fired CC units at FPL's West County Energy Center (WCEC) site that are scheduled to come in-service during 2009 through 2011. These new units will each add approximately 1,219 MW (Summer) of generation capacity. FPL selected these CC units, designated as WCEC Units 1, 2, & 3, after conducting two Request for Proposals (RFP) solicitations and evaluating the options received in response to the RFPs.

- Two new photovoltaic (PV) solar energy facilities are projected to be brought into service by 2010. One of these PV facilities will be placed in DeSoto County and will be named the DeSoto Next Generation Solar Energy Center. This facility is projected to have a nameplate rating of 25 MW. The second PV facility will be named the Space Coast Next Generation Solar Energy Center and is projected to have a nameplate rating of 10 MW. The FPSC approved the eligibility of expenditures for these PV facilities to be recovered through the environmental cost recovery clause in August 2008. The DeSoto Next Generation Solar Energy Center obtained an Environmental Resource Permit and an Army Corps of Engineers permit in October 2008. The Space Coast Next Generation Solar Energy Center received the Army Corps of Engineers permit in December 2008 and expects to receive the Environmental Resource Permit in mid-2009.
- A new solar thermal facility at FPL's existing Martin plant site is also projected to be brought into service in 2010. This solar thermal facility, named the Martin Next Generation Solar Energy Center, is projected to be able to produce up to 75 MW of steam capability, thus allowing reduced use of fossil fuels by FPL when the solar thermal facility is producing steam. The FPSC approved the eligibility of expenditures for this solar thermal facility to be recovered through the environmental cost recovery clause in August 2008. FPL received the site certification modification approval in August 2008.
- Two existing generating plants, each consisting of two older fossil fuel-fired generating units, are projected to be converted into new, highly efficient CC units. The existing plant at FPL's Cape Canaveral site will be replaced in 2013 by a new CC unit with a projected output of 1,219 MW. This new plant will be called the Cape Canaveral Next Generation Clean Energy Center. The existing plant at FPL's Riviera site will be replaced in 2014 by a new CC unit with a projected output of 1,207 MW. This new plant will be called the Riviera Beach Next Generation Clean Energy Center. These conversions were approved by the FPSC in September 2008. The site certification application for Cape Canaveral was filed in December 2008 and the site certification application for Riviera Beach was filed in February 2009. A decision is expected to be reached regarding these applications in early 2010.
- Two new nuclear units (Turkey Point Units 6 & 7) are projected to be brought into service in 2018 and 2020, respectively. Each unit is projected to produce approximately 1,100 MW. The FPSC approved the need for these new nuclear units in April 2008. As part of this approval, FPL will be providing a annual feasibility analysis as part of the annual nuclear cost recovery process. A multi-year permitting review process for these units is currently underway. Because this Site Plan

addresses the time period through 2018, the first of these two units, Turkey Point Unit 6, is now included in the 2009 Site Plan.

- In addition, FPL will be adding approximately 400 MW of increased generating capacity at its existing nuclear power plants at its Turkey Point and St. Lucie sites. This increased capacity is scheduled to come in-service in 2011 and 2012. These capacity "uprates" were approved by the FPSC in January 2008. The Final Order for the Site Certification was issued in September 2008 for the St. Lucie uprates and October 2008 for the Turkey Point uprates.

These new generating units were added for a variety of reasons including cost-effectiveness, significant system fuel savings, and significant system emission reductions, including greenhouse gas emission reductions. In addition, the solar projects will increase the contribution of renewable energy sources towards meeting the electricity needs of FPL's customers.

The second of these assumptions involves firm capacity power purchases. FPL's current projection of firm capacity purchases is very similar to the projection shown in FPL's 2008 Site Plan. These firm capacity purchases are from a combination of utility and independent power producers. Details, including the annual total capacity values for these purchases, are presented in Chapter I in Tables I.B.1 and I.B.2. These purchased capacity amounts were incorporated in FPL's resource planning work.

The third of these assumptions involves a projection of the amount of additional demand side management (DSM) that is projected to be implemented annually over the ten-year period. Since 1994, FPL's resource planning work has assumed that at least the DSM MW called for in FPL's approved DSM Goals will be achieved as planned. This is again the case with the resource plan FPL discusses in its 2009 Site Plan.

There is essentially no change in the amount of DSM shown between the 2008 Site Plan and the 2009 Site Plan. The DSM values that are presented in this 2009 Site Plan, are based on meeting FPL's currently approved DSM Goals through 2014, plus implementing additional cost-effective DSM through 2014 that was identified by FPL after the current DSM Goals were established, and a projection of continued DSM additions in 2015 through 2017 at an annual implementation rate commensurate with that in the years leading up to 2014. Because the 2009 Site Plan addresses one more year (2018) than did the 2008 Site Plan, FPL has extended its DSM projection out one more year to 2018 using a similar annual implementation rate.

However, FPL is scheduled to present its new projections of cost-effective DSM to the FPSC in June 2009. These new projections will be used to determine FPL's new DSM Goals for the years 2010 through 2019. The analyses to develop these new projections of cost-effective DSM for the new DSM Goals are currently a work in progress at the time the 2009 Site Plan is being filed. The final order from the FPSC establishing FPL's new DSM Goals is expected in the 4th Quarter of 2009. The subsequent development and approval of FPL's DSM Plan (with which FPL will meet the new Goals) will likely be made in early 2010. Therefore, the impact of FPL's new DSM Goals and DSM Plan will be reflected next year in FPL's 2010 Site Plan.

These key assumptions, plus the other updated information, are then applied in the first fundamental step: the determination of the magnitude and the timing of FPL's resource needs. This determination is accomplished by system reliability analyses which are typically based on a dual planning criteria of a minimum peak period reserve margin of 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, two types of methodologies, deterministic and probabilistic, have been employed in system reliability analysis. The calculation of excess firm capacity at the annual system peaks (reserve margin) is the most common method, and this relatively simple deterministic calculation can be performed on a spreadsheet. It provides an indication of the adequacy of a generating system's capacity resources compared to its load during peak periods. However, deterministic methods do not take into account probabilistic-related elements such as the impact of individual unit failures. For example: two 50 MW units which can be counted on to run 90% of the time are more valuable in regard to utility system reliability than is one 100 MW unit which can also be counted on to run 90% of the time. Probabilistic methods also recognize the value of being part of an interconnected system with access to multiple capacity sources.

For this reason, probabilistic methodologies have been used to provide an additional perspective on the reliability of a generating system. There are a number of probabilistic methods that are being used to perform system reliability analyses. Of these, the most widely used is loss-of-load probability or LOLP. Simply stated, LOLP is an index of how well a generating system may be able to meet its demand (i.e., a measure of how often load may exceed available resources). In contrast to reserve margin, the calculation of

LOLP looks at the daily peak demands for each year, while taking into consideration such probabilistic events as the unavailability of individual generators due to scheduled maintenance or forced outages.

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

The result of the first fundamental step of resource planning is a projection of how many new MW of resources are needed to meet both reserve margin and LOLP criteria, and thus maintain system reliability, and of when the MW are needed. Information regarding the timing and magnitude of these resource needs is used in the second fundamental step: identifying resource options and resource plans that can meet the determined magnitude and timing of FPL's resource needs.

Step 2: Identify Resource Options and Plans That 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 conducted to determine which new capacity options appear to be the most competitive on FPL's system. These analyses also establish capacity size (MW) values, projected construction/permitting schedules, and operating parameters and costs. In similar analyses, feasibility analyses of new DSM options and/or continued growth in existing DSM options are conducted.

The individual new resource options emerging from these feasibility options are then typically "packaged" into different resource plans which are designed to meet the system reliability criteria. In other words, resource plans are created by combining individual resource options so that the timing and magnitude of FPL's new resource needs are met. The creation of these competing resource plans is typically carried out using spreadsheet, dynamic programming, and/or linear and non-linear programming techniques.

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 are identified.

Step 3: Evaluate the Competing Options and Resource Plans in Regard to System Economics and Non-Economic Factors:

At the completion of fundamental steps 1 & 2, the most viable new resource options have been identified, and these resource options have been combined into a number of resource plans which meet the magnitude and timing of FPL's resource needs. The stage is set for evaluating these resource options and resource plans. In 2008, once the resource plans were developed, FPL utilized the P-MArea production cost model and a Fixed Cost Spreadsheet to perform the economic analyses. The P-MArea model is the model used by FPL to develop the Fuel Cost Budget and to conduct other production cost-related analyses.

FPL also utilized several other models in the economic evaluation portion of its resource planning work. For analyses of individual DSM options, FPL typically uses its DSM cost-effectiveness model which is an FPL spreadsheet model utilizing the FPSC's approved methodology for analyzing the cost-effectiveness of individual DSM measures/programs, and its non-linear programming model for analyzing the potential for lowering system peak loads through additional load management capacity.

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

Other factors are also included in FPL's evaluation of resource options and resource plans. While these factors may have an economic component or impact, they are often discussed in quantitative, but non-economic terms, such as percentages, etc. rather than

in terms of dollars. These factors are often referred to by FPL as "system concerns" that include (but are not necessarily limited to) maintaining/enhancing fuel diversity in the FPL system and maintaining a regional balance between load and generating capacity, particularly in Southeastern Florida. In conducting the evaluations needed to determine which resource options and resource plans are best for FPL's system, both the economic and non-economic evaluations are conducted with an eye to whether the system concern is positively or negatively impacted by a given resource option or resource plan.

Step 4: Finalizing FPL's Current Resource Plan

The results of the previous three fundamental steps were used to develop the future generation plan. This plan is presented in the following section.

III.B Incremental Resource Additions/Changes

FPL's projected incremental generation capacity additions/changes for 2009 through 2018 are depicted in Table III.B.1. These capacity additions/changes result from a variety of actions including: changes to existing units (which are frequently achieved as a result of plant component replacements during major overhauls), temporarily removing older, less efficient generating units from active service and placing them into Inactive Reserve status, changes in the amounts of purchased power being delivered under existing contracts as per the contract schedules or by entering into new purchase contracts, increases in generating capacity at FPL's four existing nuclear units, the conversion of FPL's existing steam generating units at its existing Cape Canaveral and Riviera sites into new, very fuel-efficient CC generating units, and by construction of approved new generating units.

As shown in Table III.B.1, the capacity additions are largely made up of construction of new CC and nuclear generating units, the conversion of existing steam units into new CC units, and capacity increases at FPL's existing nuclear generating units. (The DSM MW that FPL is adding each year are not presented in this table but have been accounted for by FPL and the FPSC in the process of obtaining approval for these new capacity additions.)

This table also shows the addition of the previously discussed 110 MW of new solar facilities (35 MW of PV and 75 MW of solar thermal). However, as indicated in the table and its footnotes, these new solar facilities are not projected to contribute new firm capacity. There are two reasons for this. First, one of these facilities – the 75 MW solar

thermal facility at the Martin site – is designed not to add new capacity, but to serve as a "fuel substitute" facility. When sufficient sunlight is available, the solar thermal facility will produce steam that would otherwise have been produced by burning fossil fuels. Second, in regard to the two new PV facilities that together have a 35 MW nameplate rating, it is unclear at this time what the output of these PV facilities will consistently be during FPL's late afternoon Summer and early morning Winter peak hours. Consequently, FPL is not assigning a firm capacity value (i.e., those values reflected in Table III.B.1) to these PV facilities at this time. Once FPL has actual operating experience with these PV facilities in these specific locations, it will evaluate what an appropriate firm capacity value for each of the facilities should be. However, FPL's economic and non-economic analyses fully capture the system fuel and emission savings from these three new solar facilities.

FPL is also currently assuming, for planning purposes, that it is likely to obtain additional capacity and/or energy from Renewable RFP solicitations, other proposed purchases, or its own renewable energy development efforts. For purposes of this planning document, FPL is assuming that 50 MW of firm capacity purchases from new renewable facilities will be added to FPL's system in the ten-year reporting period. In addition, one of FPL's existing renewable purchase power contracts is set to expire in 2010. For purposes of this planning document, FPL is assuming that a new contract for 55 MW of firm capacity and energy will be entered into. This is discussed further in Section III.F.

The significantly lower new load forecast, coupled with the approved additions of highly efficient new nuclear, solar, and natural gas-fired generating capacity, allow the opportunity for FPL to temporarily remove some older, less efficient generating capacity from active service, resulting in savings in operational and maintenance costs. A number of such units will be placed on Inactive Reserve status starting in 2009. The existing units that will be placed on Inactive Reserve include: Cutler Units 5 & 6, Sanford Unit 3, Port Everglades Units 1 & 2, Martin Unit 2, and Manatee Unit 2. These units will continue to be maintained and will be returned to active service when needed. The timing of the return of these units is uncertain at this time primarily due to the uncertainty regarding FPL's future load. However, for planning purposes, FPL is showing in this document that these units begin to return to active service starting in 2016.

In addition, the existing units at the Cape Canaveral and Riviera sites that will be converted to CC generation as part of the Conversions, will first be placed on Inactive Reserve status, then will be completely removed from service in preparation for the construction of the new units at those sites.

In regard to FPL's projected reserve margin values, these values are higher than the values projected in the 2008 Site Plan. As a consequence, no new uncommitted generation is projected to be needed in the 2009 – 2018 time frame, subject to changes in laws and regulations regarding renewable energy.[2]

[2] For purposes of establishing a Standard Offer Contract, and using the same forecasts and other assumptions presented in this document, FPL projects that it's next fossil-fueled new generating unit would be a Greenfield 3x1 G CC with a 2021 in-service date. Details of that unit are not provided in this Site Plan because its projected in-service date is beyond the 2009-2018 time period addressed in this document.

Table III.B.1: Projected Capacity Changes for FPL

Projected Capacity Changes and Reserve Margins for FPL [1]			
Year	Projected Capacity Changes	Net Capacity Changes (MW) Winter[2]	Summer[3]
2009	Changes to Existing Purchases [4]	---	(479)
	West County Unit 1 [5]	---	1,219
	DeSoto Next Generation Solar Energy Center (PV) [6]	---	---
	Riviera Unit 3 - offline for conversion	---	(276)
	Riviera Unit 4 - offline for conversion	---	(286)
	Changes to Existing Units	(78)	10
	Inactive Reserve of Existing Units - offline [8]	---	(766)
2010	Changes to Existing Purchases [4]	(559)	(352)
	West County Unit 1 [5]	1,335	---
	West County Unit 2 [5]	1,335	1,219
	Martin Next Generation Solar Energy Center (Solar Thermal) [7]	---	---
	Space Coast Next Generation Solar Energy Center (PV) [6]	---	---
	Riviera Unit 3 - offline for conversion	(277)	---
	Riviera Unit 4 - offline for conversion	(288)	---
	Cape Canaveral Unit 1 - offline for conversion	---	(395)
	Cape Canaveral Unit 2 - offline for conversion	---	(388)
	Changes to Existing Units	53	36
	Inactive Reserve of Existing Units - offline [8]	(777)	(1,648)
2011	Changes to Existing Purchases [4]	(46)	(45)
	West County Unit 3 [5]	---	1,219
	Cape Canaveral Unit 1 - offline for conversion	(397)	---
	Cape Canaveral Unit 2 - offline for conversion	(397)	---
	Inactive Reserve of Existing Units - offline [8]	(1,663)	10
	Changes to Existing Units	130	(92)
2012	Changes to Existing Purchases [4]	---	(156)
	West County Unit 3 [5]	1,335	---
	Changes to Existing Units	(11)	(11)
	Existing Nuclear Units Capacity Uprates - St. Lucie 1	103	103
	Existing Nuclear Units Capacity Uprates - St. Lucie 2	---	88
	Existing Nuclear Units Capacity Uprates - Turkey Point 3	---	104
2013	Changes to Existing Purchases [4]	(180)	---
	Existing Nuclear Units Capacity Uprates - St. Lucie 2	88	---
	Existing Nuclear Units Capacity Uprates - Turkey Point 3	104	---
	Existing Nuclear Units Capacity Uprates - Turkey Point 4	104	104
	Cape Canaveral Next Generation Clean Energy Center (5)	---	1,219
2014	Changes to Existing Purchases [4]	---	50
	Cape Canaveral Next Generation Clean Energy Center (5)	1,343	---
	Riviera Beach Next Generation Clean Energy Center	---	1,207
2015	Riviera Beach Next Generation Clean Energy Center	1,310	---
2016	Inactive Reserve of Existing Units - online [8]	---	814
	Changes to Existing Purchases [4]	---	(1,311)
2017	Inactive Reserve of Existing Units - online [8]	825	822
2018	Turkey Point Nuclear Unit 6 [5]	---	1,100
	Inactive Reserve of Existing Units - online [8]	834	---
	TOTALS =	**4,226**	**3,119**

(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 the year shown.
(3) Summer values are values for August of the year shown.
(4) These are firm capacity and energy contracts with QF, utilities, and other entities. See Table I.B.1 and Table I.B.2 for more details.
(5) All new unit additions are scheduled to be in-service in June of the year shown except for WCEC 1 and WCEC 2 that are projected to be in-service in August 2009 and December 2009, respectively. WCEC 1 is included in the Summer reserve margin calculation starting in 2009 and in the Winter reserve margin calculation starting in 2010. WCEC 2 is included in both the Summer and Winter starting in 2010. All additions assumed to start in June are included in the Summer reserve margin calculation starting in that year and in the Winter reserve margin calculation starting with the next year.
(6) Because of the intermittent nature of the photovoltaics (PV) resource, FPL is currently assigning no firm capacity benefit to these generating additions. FPL will reassess this once actual operating data from the PV facilities at these locations is available. This location-specific information is needed in order to gauge consistent output during the peak hours which are accounted for in FPL's reserve margin calculations.
(7) The Martin solar thermal facility is designed to provide steam for FPL's existing Martin Unit 8 combined cycle unit, thus reducing FPL's use of natural gas. No additional capacity (MW) will result from the operation of the solar thermal facility.
(8) A number of existing FPL power plants are being temporarily removed from service and placed on Inactive Reserve status. FPL plans to return these units to active service in the future as needed. The timing of the return of these units to full-time active status is uncertain at this time primarily due to the uncertainty regarding FPL's future load. However, for planning purposes, FPL is showing in this document that these units begin to return to active service starting in 2016.

III.C Issues Impacting FPL's Resource Planning Work

FPL's ongoing resource planning efforts will continue to be influenced by the two driving factors previously discussed: a new lower load forecast and the addition of a significant amount of new highly efficient nuclear, solar, and CC generating capacity that has been approved by the FPSC. In addition, there are at least four other issues that will impact FPL's resource planning work. FPL refers to two of these issues as on-going system concerns that FPL has considered in its resource planning work for a number of years. These on-going system concerns include: (1) maintaining/enhancing fuel diversity in the FPL system, and (2) maintaining a balance between load and generating capacity in Southeastern Florida.

In addition, two other relatively recent issues have emerged that will also influence FPL's resource planning efforts. These include: (3) the Executive Orders directive issued in 2007 by Governor Crist calling for reduction in greenhouse gas emissions and greater contribution from renewable energy sources, and (4) a Florida standard for renewable energy contributions to a utility system.

These four (4) issues that impact FPL's on-going resource planning work are briefly discussed below.

1. **System Fuel Diversity**

FPL is currently dependent upon using natural gas to generate approximately half of the electricity it delivers to its customers. Therefore, FPL is continually seeking to maintain and enhance the fuel diversity of its system.

In 2007, FPL sought approval from the FPSC to add two new advanced technology coal units to its system. These two new units would have been placed in-service in 2013 and 2014. However, due to concerns over greenhouse gas emissions, FPL was unable to obtain approval for these units. Consequently, FPL does not believe that new advanced technology coal units are viable fuel diversity enhancement options in Florida for the foreseeable future.

Therefore, FPL has turned its attention to nuclear energy, renewable energy, and more efficient ways in which to generate electricity using natural gas in order to enhance its fuel diversity. In regard to nuclear energy, FPL obtained approval to increase capacity at each of FPL's four existing nuclear units by up to 104 MW. In total, these capacity

"uprates" will add a total of approximately 400 MW to the FPL system in the 2011/2012 time period. In 2008, the FPSC approved the need for these uprates and the ability to recover expenditures related to these uprates. In 2008, FPL also obtained FPSC approval for the need to add two new nuclear units at FPL's existing Turkey Point site and the ability to recover expenditures related to these new units. These two new nuclear units are projected to add approximately 2,200 MW to FPL's system. The first of these units is projected to come in-service in 2018 and the second unit to come in-service in 2020 (i.e., outside of the ten-year reporting period of this document).

FPL also has been involved in activities to investigate adding or maintaining renewable resources as a part of its generation supply. One of these activities is a variety of discussions with existing facilities aimed at maintaining or extending current agreements that are scheduled to end during the ten-year reporting period of this document. Another activity is to attempt to solicit cost-effective new renewable projects from outside parties. With respect to the latter, FPL issued a second Request for Proposals (RFP) for new renewable energy capacity and energy in April 2008 and FPL is analyzing those responses. Also, as previously discussed, FPL sought and received approval from the FPSC to add 110 MW of new FPL-owned solar facilities, both solar thermal and PV, in 2008. These FPL facilities are all scheduled to be in-service by 2010. FPL's efforts to utilize renewable energy are discussed further in Section III.F.

In regard to using natural gas more efficiently, FPL received approvals in 2008 from the FPSC to build a third highly efficient CC unit at its West County Energy Center site (WCEC Unit 3) and to convert the older steam generating units at its existing Cape Canaveral and Riviera plant sites to new, highly efficient CC units. These new CC units will go in service in 2011, 2013, and 2014, respectively.

In the future, FPL will continue to identify and evaluate alternatives that may maintain or enhance system fuel diversity. FPL also plans to maintain the ability to utilize fuel oil at those existing units that have that capability, although cost factors currently limit the expected use of these facilities. Furthermore, FPL has traditionally purchased the gas transportation capacity required for new natural gas generating units from an existing natural gas pipeline company. As an alternative, FPL is developing plans with the goal of filing for a Need Determination by the FPSC for construction of a new natural gas pipeline in Florida capable of serving future generation needs. Such a pipeline would benefit FPL and its customers by increasing the diversity of FPL's fuel supply sources, the physical reliability of the pipeline delivery system, and competition among pipelines.

2. **Southeastern Florida Imbalance**

In recent years an imbalance had developed between regionally installed generation and peak load in Southeastern Florida. A significant amount of energy required in the Southeastern Florida region during peak periods was being provided through the transmission system from plants located outside the region. FPL's prior planning work concluded that either additional installed generating capacity in this region, or transmission capacity capable of delivering additional electricity from outside the region, would be required to address this imbalance.

Partly because of the lower transmission-related costs resulting from their location, four recent capacity additions: Turkey Point Unit 5, and WCEC Units 1, 2, & 3, were evaluated as the most cost-effective options to meet FPL's capacity needs in the near-term. Adding these units will significantly reduce the imbalance between generation and load in Southeastern Florida.

In addition, FPL will be adding increased capacity at FPL's existing two nuclear units at Turkey Point in 2011/2012 and will be increasing the generating capacity at its Riviera site through the conversion of the existing plants at that site in 2014. The result of these approved generating unit additions in Southeastern Florida are expected to address the imbalance for most, if not all, of the 2009-2018 reporting period addressed in this document even after accounting for temporarily placing some of the existing generating units in the region on Inactive Reserve status. However, the Southeastern Florida imbalance will remain a concern in FPL's on-going resource planning work.

3. **Governor Crist's Executive Orders**

The Executive Orders issued in 2007, particularly the portions of those Orders directing significant increases in renewable, non-emitting energy and decreases in greenhouse gas emissions, are being addressed by FPL in a variety of ways. With respect to renewable energy, FPL's efforts to procure capacity from renewable energy sources, and to build its own renewable energy facilities, were mentioned above in regard to fuel diversity and are also discussed in more detail in Section III.F.

These renewable energy efforts have the potential to help lower greenhouse gas emissions. In addition, significant reductions, particularly of carbon dioxide (CO_2), will be accomplished by the approved capacity uprates at FPL's existing nuclear units and the planned additions of two new nuclear units at FPL's existing Turkey Point site in 2018 and 2020. Further reductions in greenhouse gas emissions are also expected from

increasing the overall fuel efficiency of FPL's system through the addition of the approved new generating units WCEC Units 1, 2, & 3 and the approved conversions of FPL's existing Cape Canaveral and Riviera plants. FPL will also continue to look for cost-effective ways to further improve the efficiency of its system that will lead to even more greenhouse gas emission reductions.

FPL's system CO_2 emission rate (amount of CO_2 emitted per MWh of electricity generated) is already relatively low due in large part to the overall efficiency of FPL's system. The efforts described above have the potential not only to continue the trend of steadily lowering FPL's already low CO_2 emission rate, but also to begin to lower total system CO_2 emissions despite continued growth in population.

4. **Renewable Portfolio Standards**

The ongoing effort to establish a Florida standard for renewable energy contributions to a utility system is still underway at the time this document is being prepared. A Renewable Portfolio Standard (RPS) proposal prepared by the FPSC has been sent to the Florida Legislature for consideration during the legislative session that began in March 2009. Because the eventual RPS outcome is not known at the time the 2009 Site Plan is being prepared, the resource plan presented in FPL's 2009 Site Plan does not directly address an RPS decision. Assuming that an RPS decision is reached later in 2009, FPL will determine what steps need to be taken to address the standard. These steps will be discussed next year in FPL's 2010 Site Plan.

III.D Demand Side Management (DSM)

FPL offers a wide variety of cost-effective DSM programs to its customers. In addition, FPL is actively engaged in DSM research and development. These DSM efforts are discussed in the remainder of this section.

Residential DSM Programs

1. **Residential Building Envelope:** Offers incentives to residential customers to install energy efficient reflective roof and ceiling insulation measures.

2. **Duct System Testing and Repair:** Provides reduced cost duct system testing to identify leaks in air conditioning duct systems, and encourages the repair of those leaks by qualified contractors. Incentives are offered for duct system repair.

3. **Residential Air Conditioning:** Offers incentives to customers to purchase higher efficiency heating, ventilating, and air conditioning equipment. The program includes additional incentives for: 1) plenum repair measure; 2) air handler units with electronically commutated motors; and, 3) units properly sized using FPL approved sizing software.

4. **Residential Load Management (On Call Program):** Offers load control of major appliances/household equipment to residential customers in exchange for monthly electric bill credits. Direct load control equipment is installed on selected customer end-use equipment, allowing FPL to control these customer loads as needed. Qualifying equipment (and applicable monthly credits) includes central electric air conditioners, central electric heaters, conventional electric water heaters, and swimming pool pumps.

5. **Residential New Construction (BuildSmart):** Encourages the design and construction of energy efficient homes by offering education to contractors on energy efficiency measures, and providing construction design reviews and home inspections.

6. **Residential Low Income Weatherization:** Combines energy audits and incentives to encourage low income housing administrators to retrofit homes with energy efficiency measures. The housing authorities include: weatherization agency providers (WAPS), non-weatherization agency providers (non-WAPS), and other providers approved by FPL. The incentives are used by these providers to leverage their funds to increase the overall energy efficiency of the homes they are retrofitting. FPL offers incentives for HVAC maintenance, reduced air infiltration measures, and room air conditioning replacement.

7. **Residential Conservation Service:** Offers a walk-through energy audit, a computer-generated Class A audit, and a customer-assisted energy audit. For customer-assisted energy audits, a mail-in, phone, and Internet audit option may be offered. FPL does not apply demand and energy savings from this program towards its DSM Goals.

Business DSM Programs

1. **Business Heating, Ventilating, and Air Conditioning (HVAC):** Offers business customers financial incentives to upgrade to higher efficiency HVAC equipment that exceed the minimum efficiencies mandated by the Florida Energy Efficiency Code for Building Construction or ASHRAE Standard 90.1. The current FPL program includes

incentives for: 1) thermal storage; 2) chillers; 3) energy recovery ventilator units; 4) direct expansion (DX) units and efficient air conditioning room units; 5) demand control ventilation systems including kitchen hood control; and 6) electrically commutated motors for air conditioning systems.

2. **Business Efficient Lighting:** Offers business customers financial incentives to install high efficiency lighting measures at the time of replacement. The FPL current program offers incentives for linear fluorescent, plus other efficient, lighting technologies.

3. **Business Building Envelope:** Offers financial incentives to business customers to install high efficiency building envelope measures such as roof/ceiling insulation, reflective roof coatings, and window treatments.

4. **Business Custom Incentive:** Serves as a "catch-all" program for cost-effective business efficiency measures which are not included in other FPL programs. DSM measures must reduce or shift at least 25 kW during peak hours, have verifiable demand and energy savings, and pass FPL's cost-effectiveness testing.

5. **Business On Call:** Offers load control of central air conditioning units to both small non–demand-billed, and medium demand-billed, business customers in exchange for monthly electric bill credits.

6. **Commercial Industrial Demand Reduction (CDR):** Reduces peak demand by allowing the direct control of customer loads of 200 kW or greater. Participants contract for a firm demand level which may not be exceeded during load control periods. In return, participants receive a monthly credit. Participants must provide a 5-year termination notice to discontinue service under this rider.

7. **Business Energy Evaluation:** Offers free standard level energy evaluations on-site and on-line. More detailed evaluations are available through this audit program with costs shared between FPL and the participating customer. Participation in FPL's other business DSM programs is promoted through this program.

8. **Commercial/Industrial Load Control:** Reduces peak demand by controlling customer loads of 200 kW or greater in exchange for monthly electric bill credits. (This program was closed to new participants in 2000).

9. **Business Water Heating:** Provides financial incentives to encourage the installation of energy-efficient heat recovery units or heat pump water heaters.

10. **Business Refrigeration:** Provides financial incentives to encourage the installation of controls and equipment to reduce the usage of electric strip heat for defrosting purposes.

11. **Cogeneration and Small Power Production:** Facilitates FPL compliance with all regulatory requirements concerning qualifying facilities and small power producers. One role of the program is to assist customers in the evaluation of potential cogeneration projects, including self-generation. FPL does not project demand and energy savings from this program towards its DSM Goals.

Research And Development Programs

1. **Conservation Research and Development Program (CRD):** An umbrella research project under which new DSM technologies are analyzed. Several FPL DSM programs have emerged from the CRD program, including the business Building Envelope, Business On Call, and Residential New Construction programs. The program has also resulted in the addition of cost-effective measures to existing programs, such as the inclusion of Energy Recovery Ventilators in the Business HVAC Program. FPL operates the CRD program based on DSM Plan approval, or for 6 years, whichever occurs first, with a spending cap as approved in the most current DSM Plan.

2. **Residential Thermostat Load Control Pilot Project:** On June 15, 2007 FPL filed a petition with the FPSC for the Residential Thermostat Load Control Pilot Project. A typical barrier to customer acceptance of utility load control programs is reluctance to surrender control of heating and air conditioning appliances. Consequently, for an initial 24-month period, FPL proposed to evaluate whether the benefits of the existing On-Call Program can be expanded through use of a new generation of communication and control technologies that put residential customers in charge of decisions that could lower energy costs, while allowing customers to override FPL control of their heating and air conditioning appliances. The Commission approved FPL's request on August 14, 2007, and issued Consummating Order 07-0719 TRF-EG on September 28, 2007. The pilot project is underway and upon conclusion of the pilot, FPL will provide a final report on the results to the FPSC.

DSM Summary:

FPL has sought out and implemented cost-effective DSM programs since 1978. These programs include both conservation initiatives and load management. FPL's DSM efforts

through 2008 have resulted in a cumulative Summer peak reduction of approximately 4,109 MW at the generator and an estimated cumulative energy saving of approximately 46,646 Gigawatt Hour (GWh) at the generator. Accounting for reserve margin requirements, FPL's DSM efforts through 2008 have eliminated the need to construct more than 12 new 400 MW generating units.

FPL has consistently been among the leading utilities nationally in DSM achievement. For example, according to the U.S. Department of Energy's 2006 data (the last year for which the DOE data was available at the time this Site Plan was being developed), FPL ranked # 1 nationally in energy efficiency demand reduction and # 3 nationally in load management demand reduction.

In June 2009, FPL will be submitting its proposed DSM Goals for the 2010 – 2019 time period to the FPSC for its approval. At the time the 2009 Site Plan is being finalized, FPL's analyses to determine what its proposed DSM Goals for 2010 – 2019 are a work in progress. Consequently, FPL's 2009 Site Plan is retaining essentially the same level of projected DSM additions as was presented in its 2008 Site Plan. However, this level of projected DSM additions is likely to change due to the DSM Goals work.

Once FPL's DSM Goals are established, FPL will then send its proposed DSM Plan, with which it plans to meet these DSM Goals, to the FPSC for approval. FPL currently anticipates that both its DSM Goals and DSM Plan for the 2010 – 2019 time period will be approved by the first Quarter of 2010. Therefore, FPL expects that both its new DSM Goals and DSM Plan will be addressed in FPL's 2010 Site Plan.

III.E Transmission Plan

The transmission plan will allow for the reliable delivery of the required capacity and energy for FPL's retail and wholesale customers. The following table presents FPL's proposed future additions of 230 kV bulk transmission lines that must be certified under the Transmission Line Siting Act.

Table III.E.1: 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	St. Johns [1/]	Pringle	25	Jun-09	230	759
FPL	Manatee [2/]	BobWhite	30	Dec-12	230	1190

1/ Final order certifying the corridor was issued on April 21, 2006. This project will be completed in two phases. Phase I consists of 4 miles of new 230kV line (Pringle to Pellicer) and is scheduled to be completed by Dec-2009. Phase II consists of 21 miles of new 230kV line (St. Johns to Pellicer) and is scheduled to be completed by Dec-2013.

2/ Final order certifying the corridor was issued on November 6, 2008. This project consists of 30 miles of new 230kV line (Manatee to Bobwhite) and is scheduled to be completed by Dec-2012

In addition, there will be transmission facilities needed to connect several of FPL's committed capacity increases and additions to the system transmission grid. These transmission facilities for the committed capacity additions at the DeSoto solar photo-voltaic (PV) site, the West County Energy Center site Units 1, 2, and 3, the capacity increases (uprates) at the existing St. Lucie and Turkey Point nuclear sites, the Cape Canaveral and Riviera Beach conversions, and the new nuclear unit addition Turkey Point Unit 6, are described on the following pages.

Certain new generation additions will not need new transmission facilities. These generation additions include the Martin Next Generation Solar Energy Center and the Space Coast Next Generation Solar Energy Center. The Martin facility does not add any new generation capacity at the site and, therefore, no new transmission facilities are required. The Space Coast facility is an addition of 10 MW of PV generation that will be connected at distribution voltage at the Grissom substation. No new transmission facilities are needed.

In regard to the existing generating units that are projected to be placed on Inactive Reserve status beginning in 2009, there are no projected impacts to FPL's transmission system from these units because these units can be returned to active service with adequate notice.

III.E.1 Transmission Facilities for West County Energy Center (WCEC) Unit 1

The work required to connect West County Energy Center (WCEC) Unit 1 in 2009 to the FPL grid is projected to be as follows:

I. Substation:

1. Build new collector yard containing two collector busses with four breakers to connect the three combustion turbines (CT) and one steam turbine (ST).
2. Construct two string busses to connect the collector busses and main switchyard to Corbett 230 kV Substation.
3. Add four main step-up transformers (3-370 MVA, 1-580 MVA), one for each CT, and one for the ST.
4. Add a new Bay #4 with three 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. Breaker replacements:
   Corbett Substation – Replace eight 230 kV breakers
   Ranch Substation – Replace five 138 kV breakers
   Levee Substation – Replace one 230 kV breaker
   Dade Substation – Replace two 138 kV breakers

II. Transmission:

1. No upgrades expected to be necessary at this time.

III.E.2 Transmission Facilities for West County Energy Center (WCEC) Unit 2

The work required to connect West County Energy Center (WCEC) Unit 2 in 2009 to the FPL grid is projected to be as follows:

I. Substation:

1. Build new collector yard containing two collector busses with four breakers to connect the three combustion turbines (CT), and one steam turbine (ST).
2. Construct two string busses to connect the collector busses and main switchyard to Corbett 500kV Substation.
3. Add four main step-up transformers (3-370 MVA, 1- 580 MVA), one for each CT, and one for the ST.
4. At Corbett Substation, install one breaker and relocate Martin #2 500 kV line from Bay 2S to Bay 2N. Install one West County 500 kv string bus into Bay 2S.
5. At Corbett Substation, install one breaker and second West County 500 kV string bus into Bay 1S.
6. Add relays and other protective equipment.
7. Breaker replacements:
   Dade Substation – Replace one 138 kV breaker
   Levee Substation – Replace two 230 kV breakers
   Ranch Substation – Replace one 230 kV breaker

II. Transmission:

1. No upgrades expected to be necessary at this time.

III.E.3 Transmission Facilities for DeSoto Next Generation Solar Energy Center

The work required to connect the Desoto Next Generation Solar Energy Center project in 2009 to the FPL grid is projected to be as follows:

I. Substation:

1. Build a new Sunshine 230/23 kV Substation on FPL's Keentown-Whidden 230 kV line to connect the solar PV arrays.
2. Add relays and other protective equipment.
3. Breaker replacements: None

II. Transmission:

1. Loop Keentown-Whidden 230 kV line approximately 0.5 miles to Sunshine Substation.

III.E.4 Transmission Facilities for West County Energy Center (WCEC) Unit 3

The work required to connect West County Energy Center (WCEC) Unit 3 in 2011 to the FPL grid is projected to be as follows:

I. Substation:

1. Build new collector yard containing two collector busses with four breakers to connect the three combustion turbines (CT), and one steam turbine (ST).
2. Build new Sugar 230 kV Substation on WCEC site.
3. Construct two string busses to connect the collector busses and main switchyard to Sugar 230kV Substation.
4. Add four main step-up transformers (3-370 MVA, 1- 580 MVA), one for each CT, and one for the ST.
5. At Corbett Substation relocate Germantown 230 kV line terminal from Corbett to Sugar Sub.
6. At Corbett Substation relocate Broward/Yamato 230 kV line terminal from Corbett to Sugar Sub.
7. At Corbett Substation install new Sugar 230 kV line terminal in Bay 2W.
8. At Corbett Substation, install one 5-ohm inductor on the 230 kV side of the 500/230 kV autotransformer.
9. Add relays and other protective equipment.

II. Transmission:

1. Relocate Germantown 230 kV line from Corbett to Sugar.
2. Relocate Broward/Yamato 230 kV line from Corbett to Sugar.
3. Construct one mile 230 kV 1190 MVA line from Sugar to Corbett.

III.E.5 Transmission Facilities for St. Lucie Units 1 & 2 Capacity Uprates

The work required to accommodate the St. Lucie Units 1 & 2 uprates in 2011 for Unit 1 and in 2012 for Unit 2 to the FPL grid is projected to be as follows:

I. Substation:

1. At Midway Substation replace two 230 kV breaker and eleven 230 kV disconnect switches, and six wave traps. Also upgrade associated jumpers, bus work and equipment connections.
2. At St. Lucie Switchyard replace twenty-six 230 kV disconnect switches and six wave traps.
3. Uprate the Unit 1A and 1B main step-up transformers to 635 MVA.
4. Uprate the spare main step-up transformer to 635 MVA to replace Unit 2A main step-up transformer.
5. Replace the Unit 2B main step-up transformer with a new one rated at 635 MVA.

II. Transmission:

1. Upgrade the existing string busses for both units 1 & 2 between the main step-up transformers and the switchyard with spacers between the conductors.
2. Upgrade the three existing St. Lucie-Midway 230 kV lines with spacers between the conductors to achieve a normal (continuous) rating of 2790 Amperes.
3. Overhead ground wire and grounding improvements.

III.E.6 Transmission Facilities for Turkey Point Units 3 & 4 Capacity Uprates

The work required to accommodate the Turkey Point Units 3 & 4 uprates in 2012 for Unit 3 and in 2012 for Unit 4 to the FPL grid is projected to be as follows:

I. Substation:

1. At Turkey Point Switchyard install two 5-Ohm series phase inductors combined with external shunt capacitors on the southeast and southwest 230 kV operating busses.
2. At Turkey Point Switchyard replace twelve 230 kV disconnect switches. Also upgrade associated jumpers, bus work and equipment connections.
3. Uprate the Unit 3 and Unit 4 main step-up transformers to 970 MVA.
4. Replace spare main step-up transformer with 970-1050 MVA transformer.
5. Add relays and other protective equipment.

II. Transmission:

1. Upgrade the existing string busses for both Units 3 & 4 between the main step-up transformers and the switchyard with spacers between the conductors.

III.E.7 Transmission Facilities for Cape Canaveral Next Generation Clean Energy Center (Conversion)

The work required to connect the Cape Canaveral Next Generation Clean Energy Center in 2013 to the FPL grid is projected to be as follows:

I. Substation:

1. Build new collector yard containing two collector busses with four breakers to connect the three combustion turbines (CT), and one steam turbine (ST).
2. Construct two string busses to connect the collector busses to Cape Canaveral 230kV Substation.
3. Add four main step-up transformers (3-370 MVA, 1- 580 MVA), one for each CT, and one for the ST.
4. At Cape Canaveral Switchyard replace eight 230 kV disconnect switches. Also upgrade associated jumpers, bus work and equipment connections.
5. Expand switchyard relay vault and add relays and other protective equipment.
6. Breaker replacements:
   Cape Canaveral Switchyard – Replace four 230 kV breakers.

II. Transmission:

1. Relocate the Cape Canaveral-Grissom 115 kV line.

III.E.8 Transmission Facilities for Riviera Beach Next Generation Clean Energy Center (Conversion)

The work required to connect the Riviera Beach Next Generation Clean Energy Center in 2014 to the FPL grid is projected to be as follows:

I. Substation:

1. Expand the Riviera 230 kV Switchyard five breakers to accommodate terminals for one combustion turbine (CT), and one steam turbine (ST).
2. Construct a new 138 kV Riviera Switchyard - five bays, fourteen breakers with terminals to connect two CT units and seven 138 kV lines.
3. Add four main step-up transformers (3-370 MVA, 1- 580 MVA), one for each CT, and one for the ST.
4. Add relays and other protective equipment.
5. At Ranch Substation add a new 230 kV bay 5 and upgrade bay 4 to 3000 Amperes.
6. Breaker replacements:
   Ranch Substation – Replace one 230 kV breaker
   Broward Substation – Replace one 230 kV breaker

II. Transmission:

1. Break the Indiantown-Riviera 230kV and extend each of the line segments south (approx 4 miles) to connect to the Ranch 230 kV Substation forming Indiantown-Ranch and a Ranch-Riviera 230 kV circuits.
2. Remove Corbett-Ranch #2 230 kV line at Ranch and:
   a. extend to meet the Cedar-Lauderdale 230 kV line N/S corridor (approx 10 miles).
3. Break Cedar -Corbett 230 kV (near Ranch Sub in Corbett-Jog section) and:
   a. extend Cedar side to Riviera, (Approx 15 miles) creating new Cedar-Riviera 230 kV.
   b. extend Corbett side to meet the Cedar-Lauderdale 230 kV N/S corridor (approx 10 miles).
4. Break Cedar-Lauderdale 230 kV (near 230 corridor running N/S)
   a. connect Cedar side to meet 3.b. to create a Cedar to Corbett 230 kV.
   b. connect Lauderdale side to meet 2.a. to create a Corbett to Lauderdale 230 kV.
5. Upgrade the existing IBM-Yamato 138 kV line to 1200 Amperes.
6. New underground 138 kV tie line between new Riviera 138 kV Switchyard and 560 MVA, 230/138 kV autotransformer in the expanded Riviera 230 kV Substation.
7. Relocate six existing 138 kV lines from existing Ranch 138 kV Switchyard to new Riviera 138 kV Switchyard.

III.E.9 Transmission Facilities for Turkey Point Nuclear Unit 6

The work required to connect the Turkey Point Nuclear Unit 6 in 2018 to the FPL grid is projected to be as follows:

I. Substation:

1. Build new Clear Sky 500/230kV Switchyard with six bays on the 230 kV section for generator main step-up transformer connection, reserve auxiliary transformer connections, four 230 kV line terminals, two autotransformers and two 500 kV line terminals.
2. At Turkey Point Switchyard add a new bay to accommodate the Turkey Point-Clear Sky 230 kV line terminal.
3. At Gratigny Substation install a second 230/138 kV autotransformer with one 230 kV breaker and one 138 kV breaker.
4. At Pennsuco Substation install a fourth line terminal to accommodate the Pennsuco-Clear Sky 230 kV line by converting the ring bus to a breaker and a half scheme and adding four 230 kV breakers.
5. At Davis Substation construct two new 230kV line terminals for the Clear Sky-Davis 230 kV line and the Davis-Miami 230 kV line with a switchable inductor to be installed on the Davis-Miami 230 kV line.
6. At Levee Substation expand 500 kV section to accommodate the two Levee-Clear Sky 500 kV lines.
7. At Andytown Substation install two 5-Ohm inductors combined with external shunt capacitors on the 230kV side of the 500/230 autotransformers (one per auto).
8. At Miami Substation expand the 230kV section to a double bus configuration and add a new 230kV line terminal for Davis line and replace one autotransformer.
9. At Flagami Substation install a small inductor on one end of the Flagami-Miami 230kV #2 circuit.
10. Breaker replacements:
    Flagami Substation – Replace five 230 kV breakers and three 138 kV breakers
    Miami Substation – Replace one 230 kV breaker and four 138 kV breakers
    Davis Substation - Replace two 230 kV breakers
    Dade Substation - Replace seven 230 kV breakers
    Court Substation – Replace one 138 kV breaker.

II. Transmission:

1. FPL will design and construct two 500 kV transmission lines from the new Clear Sky Substation to the existing FPL Levee 500 kV Substation switchyard. The lines will be approximately 43 miles long.
2. Construct a new Clear Sky-Davis 230 kV line (approximately 19 miles) with a rating of 2990 Amperes.
3. Construct a new Clear Sky-Pennsuco 230 kV line (approximately 52 miles) with a rating of 2990 Amperes.
4. Construct a new Davis-Miami 230 kV line (approximately 18 miles) with a rating of 2297 Amperes.
5. Construct a new Clear Sky-Turkey Point 230 kV line (approximately 0.5 miles) with a rating of 2990 Amperes.

III.F. 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 renewable energy technologies. For purposes of discussing FPL's renewable energy efforts in this document, those efforts will be placed into five categories.

1) **Early Research & Development Efforts:**

FPL assisted the Florida Solar Energy Center (FSEC) in the late 1970s 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 in Florida on both a daily and annual basis. 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. (The system was removed in 1990 to make room for substation expansion after the testing of this PV installation was completed.)

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 below).

2) **Demand Side & Customer Efforts:**

In terms of utilizing renewable energy sources to meet its customers' needs, FPL initiated the first 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 no longer cost-effective), FPL paid incentives to approximately 48,000 customers who installed solar water heaters.

In the mid-1980s, FPL introduced another renewable energy program, FPL's Passive Home Program. This 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 FPSC 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 were deemed to 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 the high cost of PV, but facilitated the use of renewable energy by customers who were interested. 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 displacing an equivalent amount of fossil fuel-generated electricity.

FPL's basic approach for this program, which was termed Green Pricing, was initially discussed with the FPSC in 1994. FPL's 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 began the effort in 1998 and received approximately $89,000 in contributions (that significantly exceeded the goal of $70,000). FPL purchased the 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 FPL's Photovoltaic Research, Development, and Education Project. This demonstration project's objectives were 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. This project was completed in 2003.

The second effort initiated in 2000 was the Green Energy Project. The objectives of this Project were to: determine customer interest in an on–going renewable energy program, determine their price responsiveness and views on the different renewable technologies, and identify potential renewable energy supply sources that would meet the forecasted customer demand for this type of product. This Project formed the basis for FPL's Green Power Pricing Research Project, and then led to FPL's Business Green Energy Research Project.

Both the Green Power Pricing Research Project and the Business Green Energy Research Project examined the feasibility of purchasing tradable renewable energy credits generated from renewable resources including solar-powered technologies, biomass energy, landfill methane, wind energy, low impact hydroelectric energy, and/or other renewable sources. Customers who participate are charged a premium for purchasing the tradable renewable energy credits associated with electric energy generated by these sources.

Development of the Green Pricing Research Project was completed and filed with the FPSC in August 2003. As part of this process, a supply contract was put into place that allowed FPL to match supply with demand for green energy. Tradable renewable energy credits were used to supply the renewable benefits required of this project. The FPSC approved the program in December 2003 and program implementation began during the first Quarter of 2004. The project was offered to customers as FPL's Sunshine Energy® program. As part of the project, FPL made a commitment that 150 kilowatts (kW) of solar capacity would be put in place for every 10,000 program participants. The Business Green Energy Research Project focused on determining the interest and needs for business customers in this area. In 2006 FPL petitioned the FPSC for approval to make the Green Pricing Research Project a

permanent program and expand eligibility to business customers. This approval was granted in the fourth Quarter of 2006.

As Florida entered the next phase in promotion of renewable energy, with FPL requesting approval to build three new solar energy centers in the state (which are discussed below), in 2008 the FPSC voted to end the Sunshine Energy program. At its conclusion, the Sunshine Energy Program included approximately 38,000 participants and resulted in 494 kW of PV installed, including the largest PV array in the state at that time, a 250 kW facility at Rothenbach Park in Sarasota County. Several additional solar initiatives had also been developed through the Sunshine Energy Program including support for schools. The Sunshine Energy Program support of installing PV at schools was a continuation of previous FPL renewable activities involving schools. In 2003, as part of the State of Florida's PV for Schools program, FPL worked with three schools to install 4.8 kW of PV systems.

FPL has also been investigating fuel cell technologies through monitoring of industry trends, discussions with manufacturers, and direct field trials. From 2002 through the end of 2005, FPL conducted field trials and demonstration projects of Proton Exchange Membrane (PEM) fuel cells with the objectives of serving customer end-uses while evaluating the technical performance, reliability, economics, and relative readiness of the PEM technology. The demonstration projects were conducted in partnership with customers and included 5 locations. The research projects were useful to FPL in identifying specific issues that can occur in field applications and the current commercial viability of this technology. FPL will continue to monitor the progress of these technologies and conduct additional field evaluations as significant developments in the fuel cell technologies occur.

In addition, FPL assists customers who are interested in installing PV equipment at their facilities. In support of Florida Administrative Code Rule 25-6.065, Interconnection and Net Metering of Customer-Owned Renewable Generation, FPL works with customers to interconnect these customer-owned PV systems. Through December 2008, approximately 270 customer systems (predominantly residential) have been interconnected.

3) **Supply Side Efforts – Power Purchases:**

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 types of facilities. (Please refer to Tables I.B.1, I.B.2, and Table I.C.1 in Chapter I).

FPL is seeking cost-effective Power Purchase Agreements (PPAs) with any and all potential renewable energy providers. FPL issued a Renewable Request for Proposals (RFP) in 2007 that solicited proposals that offered capacity and/or energy from new renewable energy facilities. None of the responsive bids in this RFP were at or below FPL's projected avoided cost. FPL issued another Renewable Energy RFP in April 2008, which resulted in six bids received by July. Analysis of the bids was delayed by the extreme volatility in the commodity fuel and capital markets in late 2008. Current analysis indicates that none of the bids may have the potential to provide firm capacity and/or energy at avoided cost prices (and the FPSC has ruled that costs above FPL's projected avoided costs cannot be recovered for purchase contracts).

With regard to certain of the existing contracts that are currently scheduled to end in the near-term, and proposals resulting from the RFP process, FPL has assumed that some of this firm capacity will be available during the ten-year reporting period of this document through extended and/or new contracts. Firm renewable energy capacity from these sources, and from the FPL development activities discussed below, are assumed for planning purposes to provide 105 MW through this reporting period. 55 MW of the 105 MW total is expected to come from an extension of an existing purchased power contract that will expire soon. The remaining 50 MW are projected, for planning purposes, to come from a new purchase power contract (but could be delivered by a new FPL renewable energy facility).

4) **Supply Side Efforts – FPL Facilities:**

FPL is in the process of developing a wind generation project on South Hutchinson Island in St. Lucie County. This project is known as the St. Lucie Wind project and it consists of up to 6 wind turbine generators capable of generating up to approximately 13.8 MW. In 2007, FPL began the St. Lucie County land use approval process, and soon after applied for the necessary federal and state permitting. However, a decision by the state and federal agencies on the St. Lucie Wind project's permitting will not be finalized until the local land use approval process is completed. The in-service date will depend on the approval and permitting process.

FPL is currently constructing 110 MW of solar capacity at three sites in Florida. These projects are in response to the Florida's Legislature House Bill 7135 which was signed into law by Governor Crist in June 2008. House Bill 7135 (hereafter referred to as the 2008 Energy Bill), was enacted to enable the development of clean, zero greenhouse gas emitting renewable generation in State of Florida. Specifically, the 2008 Energy Bill authorized cost recovery for the first 110 MW of eligible renewable projects that had the proper land, zoning and transmission rights in place. FPL's three solar projects discussed in this section met the specified criteria, and were granted approval for cost recovery in 2008. Each of the three solar projects is discussed below.

a. **The Martin Next Generation Solar Energy Center:**

This project will provide 75 MW of solar thermal capacity in an innovative way that directly displaces fossil fuel usage in an existing FPL generating unit. This project will involve the installation of solar thermal technology that will be integrated into the existing steam cycle for the Martin Unit 8 natural gas-fired CC plant. This project will be the first "hybrid" solar plant in the world, the second largest solar facility in the world, and the largest solar plant of any kind in the U.S. outside of California. Construction began in December 2008 and is expected to be completed by the end of 2010.

b. **The DeSoto Next Generation Solar Energy Center:**

This project will provide 25 MW of photovoltaic (PV) capacity, making it the largest PV facility in the U.S.. The facility will utilize a tracking array that is designed to follow the sun as it traverses through the sky. Construction began in November 2008 and is expected to be completed by the end of 2009 or early 2010.

c. **The Space Coast Next Generation Solar Energy Center:**

This project will provide 10 MW of PV capacity in an innovative public/private partnership with NASA at the Kennedy Space Center. Construction is expected to begin in 2009 and is expected to be completed in 2010.

Each of these facilities is a significant and innovative renewable generating plant in its own right. Collectively, these Next Generation Solar Energy Centers are expected to produce a total of 223,000 megawatt hours (MWh) of electricity each year, and at

peak production provide enough power and energy to serve the requirements of more than 15,000 homes.

For resource planning purposes, FPL projects that the energy delivered from these renewable facilities will be "as available", non-firm energy. This is due to several factors. First, the Martin solar thermal facility is designed as a "fuel-substitute" facility, not as a facility that will result in additional capacity and energy being generated. The solar thermal facility will displace the use of fossil fuel on the FPL system when the solar thermal facility is operating. Second, in regard to the two PV facilities, the intermittent nature of the solar resource makes it difficult to accurately determine what contribution the PV facilities at these specific locations can consistently make at FPL late Summer afternoon and early Winter morning peak load hours. Once site-specific operating data has been gathered for an appropriate amount of time, FPL will then re-evaluate the actual output from each PV facility to determine what portion, if any, of its output can be projected as firm capacity at the projected peak hours in FPL's resource planning work.

In addition to these three approved projects; FPL is currently in the process of identifying other potential solar sites in the state in the event that a future Renewable Portfolio Standard (RPS) or other enabling legislation is enacted by the Florida legislature. FPL is evaluating existing FPL generation sites along with potential greenfield sites within FPL's service territory. Sites which are considered potential candidates will be developed so that the necessary local land use and zoning designations are consistent with the future development of solar generation. Sites that have been identified for further evaluation include the potential expansion of the DeSoto site for additional PV, and the expansion of the Manatee site for a solar thermal facility. These sites are discussed further in Chapter IV.

5) **Ongoing Research & Development Efforts:**

FPL has developed alliances with several Florida universities to promote development of emerging technologies. For example, an alliance as been established with the newly formed Center for Ocean Energy Technology at Florida Atlantic University (FAU), which will focus on the commercialization of ocean current, ocean thermal (i.e., energy conversion as well as cold water air conditioning) and hydrogen technologies. FPL has been taking the lead in assisting FAU with the discussions being held with the U.S. Department of the Interior's Minerals

Management Service Department (MMS). MMS is working to establish the permitting process for ocean energy development on the outer continental shelf.

FPL has also developed an alliance with the University of Florida to support its studies of biomass renewable potential and wind studies in the state. In addition, FPL has partnered with the Florida Institute of Technology on fuel cell technology and with the Florida State Universities Center for Applied Power System in regard to grid integration of ocean energy and other renewables.

FPL is also developing a "living lab" to demonstrate FPL's solar energy commitment to employees and visitors at its Juno Beach facility. FPL will evaluate multiple solar technologies and applications to develop a renewable business model resulting in the most cost-effective and reliable source(s) of solar energy to FPL customers.

FPL has also been in discussion with several private companies on multiple emerging technology initiatives including ocean current, ocean thermal, hydrogen, fuel cell technology, biomass, biofuels, and energy storage.

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

1. FPL's Fuel Mix

Until the mid-1980s, FPL relied primarily on a combination of fuel oil, natural gas, and nuclear energy to generate electricity with significant reliance on oil–fired generation. In the early 1980s, FPL began to purchase "coal-by-wire." In 1987, coal was first added to the fuel mix through FPL's partial ownership and additional purchases from the St. Johns River Power Park (SJRPP). This allowed FPL to meet its customers' energy needs with a more diversified mix of energy sources. Additional coal resources were added with the partial acquisition (76%) of Scherer Unit 4 which began serving FPL's customers in 1991. Starting in 1997, petroleum coke was added to the fuel mix as a blend stock with coal at SJRPP.

The trend since the early 1990s has been a steady increase in the amount of natural gas that is used by FPL to provide electricity due, in part, to the introduction of highly efficient and cost-effective CC generating units and the ready availability of natural gas. This planning document reflects an evolution in that trend in recognition that, although efficient gas-fired generation continues to provide significant benefits to FPL's customers, adding natural gas-fired additions exclusively would, in the long

term, create an unbalanced generation portfolio. FPL has committed to add three new gas-fired CC units at the West County Energy Center (WCEC) site in the 2009 – 2011 time frame. In addition, FPL has also committed to convert the existing steam generating units at its existing Cape Canaveral and Riviera sites into two highly efficient new CC units, one at each site. These five new CC units will provide highly efficient generation that will dramatically improve FPL's overall system generation efficiency.

In addition, FPL is increasing its utilization of nuclear energy through capacity uprates of its four existing nuclear units. These uprates will add a total of approximately 400 MW of nuclear generation capacity by 2012. FPL has also received approval from the FPSC to pursue plans to permit and build two new nuclear units at its existing Turkey Point site that, in total, will add approximately 2,200 MW of new nuclear generating capacity. The first of these two new units, Turkey Point Unit 6, is projected to go in-service in 2018 and is presented in this document. The second new nuclear unit, Turkey Point Unit 7, is projected to have a 2020 in-service date and will be presented in future FPL Site Plans.

In regard to utilizing renewable energy, FPL has committed to add 110 MW of solar generating capacity by 2010 through a 75 MW solar thermal facility at FPL's existing Martin site, a 25 MW PV facility in DeSoto County, and a 10 MW PV facility in Brevard County.

FPL's future resource planning work will continue to focus on identifying and evaluating alternatives that would maintain and/or enhance FPL's long-term fuel diversity. These fuel diverse alternatives may include: the purchase of power from renewable energy facilities, addition of FPL-owned renewable energy facilities, obtaining access to diversified sources of natural gas such as liquefied natural gas (LNG) and natural gas from the newly developed Mid-Continent unconventional reserves, preserving FPL's ability to utilize fuel oil at its existing units, and increased utilization of nuclear energy. (New advanced technology coal generating units are not currently considered as viable options in Florida in the ten-year reporting period of this document due to concerns over greenhouse gas emissions.) The evaluation of the feasibility and cost-effectiveness of these, and other possible alternatives, will be an ongoing part of future planning cycles.

FPL's current use of various fuels to supply energy to customers, plus a projection of this "fuel mix" through 2018 based on the resource plan presented in this document, is presented in Schedules 5, 6.1, and 6.2 later in this chapter.

2. Fossil Fuel Price Forecasts

Fossil fuel price forecasts, and the resulting projected price differentials between fuels, are major drivers used in evaluating alternatives for meeting future generating capacity needs. FPL's forecasts are generally consistent with other published contemporary forecasts.

Future oil and natural gas prices, and to a lesser extent, coal and petroleum coke prices, are inherently uncertain due to a significant number of unpredictable and uncontrollable drivers that influence the short-and long-term price of oil, natural gas, coal, and petroleum coke. These drivers include:

a. Current and projected worldwide demand for crude oil and petroleum products;

b. Current and projected worldwide refinery capacity/production;

c. Expected worldwide economic growth, in particular in China, India, and the other Pacific Rim countries;

d. Organization of Petroleum Exporting Countries (OPEC) production and the availability of spare OPEC production capacity and the assumed growth in spare OPEC production capacity;

e. Non-OPEC production and expected growth in non-OPEC production;

f. The geopolitics of the Middle East, West Africa, the Former Soviet Union, Venezuela, etc., as well as, the uncertainty and impact upon worldwide energy consumption related to U. S. and worldwide environmental legislation, politics, etc.;

g. Current and projected North American natural gas demand;

h. Current and projected U.S., Canadian, and Mexican natural gas production;

i. The worldwide supply and demand for LNG; and

j. The growth in solid fuel generation on a U. S. and worldwide basis.

The inherent uncertainty and unpredictability in these factors today and tomorrow clearly underscores the need to develop a set of plausible oil, natural gas, and solid fuel (coal and petroleum coke) price scenarios that will bound a reasonable set of long-term price outcomes. In this light, FPL developed and utilized Low, Medium, and High price forecasts for oil, natural gas, and solid fuel in much of its 2008 resource planning work, particularly in regard to the Determination of Need filings for WCEC Unit 3 and the conversions of FPL's existing Cape Canaveral and Riviera plants, and the nuclear cost recovery filings.

FPL's Medium price forecast methodology is consistent for oil and natural gas. For oil and natural gas commodity prices, FPL's Medium price forecast applies the following methodology:

a. For 2008 through 2010, the methodology used the November 6, 2008 forward curve for New York Harbor 1% sulfur heavy oil, U. S. Gulf Coast 1% sulfur heavy oil, ultra low sulfur diesel, and Henry Hub natural gas commodity prices;

b. For the next two years (2011 and 2012), FPL used a 50/50 blend of the November 6, 2008 forward curve and the most current projections at the time from The PIRA Energy Group;

c. For the 2013 through 2020 period, FPL used the annual projections from The PIRA Energy Group, and;

d. For the period beyond 2020, FPL used the real rate of escalation provided in the Energy Information Administration (EIA) *Annual Energy Outlook 2008* publication. FPL assumed a 2.5% annual rate of escalation to convert real prices to nominal prices prior to 2020, with no escalation from 2020 forward. In addition to the development of oil and natural gas commodity prices, nominal price forecasts also were prepared for oil and natural gas transportation costs. The addition of commodity and transportation forecasts resulted in delivered price forecasts.

FPL's Medium price forecast methodology is also consistent for coal and petroleum coke prices. Coal and petroleum coke prices were based upon the following approach:

a. The price forecasts for Central Appalachian coal (CAPP), South American coal, and petroleum coke were provided by JD Energy;

b. The marine transportation rates from the loading port for coal and petroleum coke to an import terminal were also provided by JD Energy;

c. The Terminal Throughput Fee was based on a range of offers from comparable facilities throughout the Southeast U.S.. The coal price forecast for FPL's existing coal plants at SJRPP and Plant Scherer assume the continuation of the existing mine-mouth and transportation contracts until expiration, along with the purchase of spot coal, to meet generation requirements.

The development of FPL's Low and High price forecasts for oil, natural gas, coal, and petroleum coke prices were based upon the historical relationship of prices compared to the average prices for the 2000 through 2007 time frame. FPL developed these forecasts to account for the uncertainty which exists within each commodity as well as across commodities. These forecasts reflect a range of reasonable forecast outcomes.

3. Nuclear Fuel Cost Forecast

This section reviews the various steps needed to fabricate nuclear fuel for delivery to the nuclear power plants, the method used to forecast the price for each step, and other comments regarding FPL's nuclear fuel cost forecast.

a) Steps Required for Nuclear Fuel to be delivered to FPL's Plants

Four separate steps are required before nuclear fuel can be used in a commercial nuclear power reactor. These steps are summarized below.

(1) Mining: Uranium is produced in many countries such as Canada, Australia, Kazakhstan, and the United States. During the first step, uranium is mined from the ground using techniques such as open pit mining, underground mining, in-situ leaching operations, or production as a by-product from other mining operations, such as gold, copper, or phosphate rocks. The product from this first step is the raw uranium delivered as an oxide, U3O8 (sometimes referred to as yellowcake).

(2) Conversion: During the second step, the U3O8 is chemically converted into UF6 which, when heated, changes into a gaseous state. This second step further

removes any chemical impurities and serves as preparation for the third step, which requires uranium to be in a gaseous state.

(3) Enrichment: The third step is called enrichment. Natural uranium contains 0.711% of uranium at an atomic mass of 235 (U-235) and 99.289% of uranium at an atomic mass of 238 (U-238). FPL's nuclear reactors use uranium with a higher percentage of up to five percent (5%) of U-235 atoms. Because natural uranium does not contain a sufficient amount of U-235, the third step increases the percentage amount of U-235 from 0.711% to a level specified when designing the reactor core (typically in a range from approximately 3% to as high as 5%). The output of this enrichment process is enriched uranium in the form of UF6.

(4) Fabrication: During the last step, fuel fabrication, the enriched UF6 is changed to a UO2 powder, pressed into pellets, and fed into tubes, which are sealed and bundled together into fuel assemblies. These fuel assemblies are then delivered to the plant site for insertion in a reactor.

Like other utilities, FPL has purchased raw uranium and the other components of the nuclear fuel cycle separately from numerous suppliers from different countries.

b) Price Forecasts for Each Step

(1) Mining: There is a significant volatility in the current uranium market. Demand is rather stable but inventory sales are a significant source of supply to complement outputs from production facilities. To the extent that source of supply can be restricted and inventories held from the market, price will rise significantly. The following are the current major contributors to this uranium price volatility:

- Hedge funds have been purchasing a significant amount of uranium, reducing availability of uranium. However, the recent financial crisis has caused significant sales of inventories and has caused the market to drop earlier than predicted.
- The large inventory from the U.S. Department of Energy (DOE) is being withheld from the market due to political pressure from suppliers concerned about further price drop already affected by the current financial downturn.

- The Russians have announced that they would not supply down-blended weapons material to the U.S. government after 2013 for sale in the U.S. market.

- The U.S. Department of Commerce (DOC) has imposed restrictions on the import of nuclear fuel from France and Russia.

However, FPL expects these issues to be addressed within the next few years, returning price behavior to be more consistent with market fundamentals. 2008 saw a number of actions to resolve restrictions of imports of foreign uranium. Recent law enacted in 2008 resolved the import of Russian-enriched uranium, by allowing some imports of Russian-enriched uranium to about 20-25% of needs for currently operating units, but with no restriction on the first core for new units and no restrictions after 2020. The financial crisis has also had a major impact and eliminated speculative demands with uranium pricing returning to close to the fundamentals earlier than was expected last year. The hedge funds have significantly reduced their activities.

FPL's nuclear fuel price forecasts are the result of FPL's analysis based on inputs from various nuclear fuel market expert reports and studies.

(2) Conversion: FPL's price forecast considers the construction of new nuclear units. Just like for raw uranium, an increase in demand for conversion services would result from this need. Insufficient planned production is currently forecast after 2013 to meet the higher demand scenario. As with additional raw uranium production, supply will expand beyond current level once more firm commitments are made including commitments to building new nuclear units.

(3) Enrichment: With no new production capacity, and if the current restrictions on imports of enrichment services from Russia continue, the current tight market supply for economically produced enrichment services will continue until 2013. A high projection of new nuclear unit construction shows a shortage of low cost enrichment services starting in 2010. The current expensive diffusion plant can make up any gaps in supply of enrichment services. In addition, there are a number of new facilities coming on-line starting in 2009 through 2013, using more efficient and proven processes such as the use of centrifuges for enrichment of uranium. In addition, as with supply for the other steps of the

nuclear fuel cycle, expansion of future capacity is feasible within the lead time for constructing new nuclear units and any other projected increase in demand.

(4) Fabrication: Because the nuclear fuel fabrication process is highly regulated by the Nuclear Regulatory Commission (NRC), not all production facilities can qualify as suppliers to nuclear reactors in the U.S. Although world supply and demand is expected to show significant excess capacity for the foreseeable future, the gap is not as wide for U.S. supply and demand. The supply for the U.S. market is expected to be sufficient to meet U.S. demand for the foreseeable future.

c) **Other Comments Regarding FPL's Nuclear Fuel Cost Forecast**

The calculations for the nuclear fuel costs are performed consistent with the method currently used for FPL's Fuel Clause filings, including the assumption of a fuel lease and the assumption of refueling outages every 18 months. The costs for each step to fabricate the nuclear fuels are added and capitalized to come up with the total costs of the fresh fuel to be loaded at each refueling (capitalized acquisition costs). The capitalized acquisition cost for each group of fresh fuel assemblies are then amortized over the energy produced by each group of fuel assemblies, and carrying costs are also added on the total unrecovered costs to derive the total fuel costs to be charged to customers. FPL also adds 1 mill per kilowatt hour net to reflect payment to DOE for spent fuel disposal.

Schedule 5
Fuel Requirements [1/]

Fuel Requirements	Units	Actual 2/ 2007	2008	Forecasted 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
(1) Nuclear	Trillion BTU	240	261	262	247	253	275	304	309	299	305	309	305
(2) Coal	1,000 TON	2,961	3,599	4,047	3,349	4,098	3,356	4,116	3,976	3,983	3,985	3,969	3,956
(3) Residual (FO6)- Total	1,000 BBL	15,524	9,379	13,317	1,788	980	852	325	285	408	1,096	1,470	1,356
(4) Steam	1,000 BBL	15,524	9,379	13,317	1,788	980	852	325	285	408	1,096	1,470	1,356
(5) Distillate (FO2)- Total	1,000 BBL	114	38	12	211	149	130	2	1	18	120	80	41
(6) Steam	1,000 BBL	0	11	0	0	0	0	0	0	0	0	0	0
(7) CC	1,000 BBL	64	8	0	0	0	0	0	0	0	0	0	0
(8) CT	1,000 BBL	50	20	12	211	149	130	2	1	18	120	80	41
(9) Natural Gas -Total	1,000 MCF	447,354	449,619	375,691	470,309	494,198	504,620	481,036	507,792	524,072	580,258	598,896	585,348
(10) Steam	1,000 MCF	66,914	143,581	17,180	18,364	19,092	18,193	7,691	6,450	8,901	22,942	28,899	26,913
(11) CC	1,000 MCF	370,039	303,942	357,811	449,246	473,101	485,010	473,261	501,270	514,850	556,001	568,953	557,878
(12) CT	1,000 MCF	10,401	2,296	700	2,699	2,004	1,417	84	73	322	1,316	1,044	557

1/ Reflects fuel requirements for FPL only.
2/ Source: A Schedules.

Schedule 6.1
Energy Sources

	Energy Sources	Units	Actual 1/ 2007	Actual 1/ 2008	Forecasted 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
(1)	Annual Energy Interchange 2/	GWH	10,688	10,141	11,109	8,462	5,962	5,867	5,648	5,462	5,976	796	0	0
(2)	Nuclear	GWH	21,899	24,024	23,510	22,116	22,730	24,705	27,276	27,751	26,790	27,355	27,751	32,816
(3)	Coal	GWH	6,856	6,423	7,381	6,205	7,462	6,138	7,378	7,142	7,160	7,161	7,131	7,108
(4)	Residual(FO6) -Total	GWH	9,651	5,702	8,844	1,208	658	573	218	191	274	735	983	906
(5)	Steam	GWH	9,651	5,702	8,844	1,208	658	573	218	191	274	735	983	906
(6)	Distillate(FO2) -Total	GWH	27	17	3	70	52	39	0	0	4	39	26	13
(7)	Steam	GWH	0	6	0	0	0	0	0	0	0	0	0	0
(8)	CC	GWH	6.7	3	0	0	0	0	0	0	0	0	0	0
(9)	CT	GWH	20	9	3	70	52	39	0	0	4	39	26	13
(10)	Natural Gas -Total	GWH	59,300	58,820	52,723	66,854	70,179	72,030	69,662	74,106	76,449	83,660	86,064	84,241
(11)	Steam	GWH	6,205	7,257	1,683	1,813	1,889	1,800	759	636	880	2,269	2,855	2,656
(12)	CC	GWH	52,717	51,368	50,990	64,860	68,156	70,140	68,898	73,465	75,548	81,311	83,142	81,549
(13)	CT	GWH	378	195	50	181	134	90	6	5	22	81	67	36
(14)	Other 3/	GWH	5,893	5,877	5,871	5,294	4,884	5,464	5,844	6,476	7,147	6,533	6,953	7,052
	Net Energy For Load 4/	GWH	114,314	111,004	109,440	110,207	111,926	114,815	116,027	121,128	123,800	126,278	128,908	132,135

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, net of Economy and other Power Sales.
4/ Net Energy For Load values for the years 2009 - 2018 are also shown in Schedule 2.3.

Schedule 6.2
Energy Sources % by Fuel Type

	Energy Source	Units	Actual 1/ 2007	Actual 1/ 2008	Forecasted 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
(1)	Annual Energy Interchange 2/	%	9.3	9.1	10.2	7.7	5.3	5.1	4.9	4.5	4.8	0.6	0.0	0.0
(2)	Nuclear	%	19.2	21.6	21.5	20.1	20.3	21.5	23.5	22.9	21.6	21.7	21.5	24.8
(3)	Coal	%	6.0	5.8	6.7	5.6	6.7	5.3	6.4	5.9	5.8	5.7	5.5	5.4
(4)	Residual (FO6) -Total	%	8.4	5.1	8.1	1.1	0.6	0.5	0.2	0.2	0.2	0.6	0.8	0.7
(5)	Steam	%	8.4	5.1	8.1	1.1	0.6	0.5	0.2	0.2	0.2	0.6	0.8	0.7
(6)	Distillate (FO2) -Total	%	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(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	%	0.0	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	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(10)	Natural Gas -Total	%	51.9	53.0	48.2	60.7	62.7	62.7	60.0	61.2	61.8	66.3	66.8	63.8
(11)	Steam	%	5.4	6.5	1.5	1.6	1.7	1.6	0.7	0.5	0.7	1.8	2.2	2.0
(12)	CC	%	46.1	46.3	46.6	58.9	60.9	61.1	59.4	60.7	61.0	64.4	64.5	61.7
(13)	CT	%	0.3	0.2	0.0	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0
(14)	Other 3/	%	5.2	5.3	5.4	4.8	4.4	4.8	5.0	5.3	5.8	5.2	5.4	5.3
			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, net of Economy and other Power Sales.

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)
August of Year	Total Installed [1] Capacity MW	Firm Capacity Import MW	Firm Capacity Export MW	Firm QF MW	Total Firm Capacity Available [2] MW	Total Peak [3] Demand MW	DSM [4] MW	Firm Summer Peak Demand MW	Reserve Margin Before Maintenance [5] MW	% of Peak	Scheduled Maintenance MW	Reserve Margin After Maintenance [6] MW	% of Peak
2009	21,985	1,824	0	690	24,499	21,124	1,997	19,126	5,372	28.1	0	5,372	28.1
2010	20,809	1,467	0	640	22,916	21,147	2,119	19,027	3,889	20.4	0	3,889	20.4
2011	21,946	1,467	0	595	24,008	21,368	2,236	19,132	4,876	25.5	0	4,876	25.5
2012	22,230	1,311	0	650	24,191	21,933	2,357	19,576	4,614	23.6	0	4,614	23.6
2013	23,553	1,311	0	650	25,514	22,249	2,483	19,766	5,748	29.1	0	5,748	29.1
2014	24,760	1,361	0	650	26,771	23,533	2,615	20,918	5,853	28.0	0	5,853	28.0
2015	24,760	1,361	0	650	26,771	24,142	2,749	21,393	5,377	25.1	0	5,377	25.1
2016	25,574	50	0	650	26,274	24,772	2,884	21,888	4,386	20.0	0	4,386	20.0
2017	26,396	50	0	650	27,096	25,401	3,019	22,383	4,713	21.1	0	4,713	21.1
2018	27,496	50	0	650	28,196	26,143	3,064	23,079	5,116	22.2	0	5,116	22.2

1/ Capacity additions and changes projected to be in-service by June 1st are generally considered to be available to meet Summer peak loads 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 2009 load forecast without incremental DSM or cumulative load management.

4/ The DSM MW shown represent cumulative load management capability plus incremental conservation from 1/2008-on designed for use with the 2008 load forecast. 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)
January of Year	Total Installed [1] Capability MW	Firm Capacity Import MW	Firm Capacity Export MW	Firm QF MW	Total Firm Capacity Available [2] MW	Total Peak [3] Demand MW	DSM [4] MW	Firm Winter 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
2009	23,280	1,962	0	740	25,982	18,697	1,730	16,968	9,014	53.1	0	9,014	53.1
2010	24,661	1,501	0	690	26,852	18,790	1,819	16,971	9,880	58.2	0	9,880	58.2
2011	22,338	1,500	0	595	24,433	19,120	1,888	17,231	7,201	41.8	0	7,201	41.8
2012	23,765	1,500	0	595	25,860	19,710	1,960	17,749	8,110	45.7	0	8,110	45.7
2013	24,061	1,320	0	650	26,031	20,098	2,035	18,063	7,967	44.1	0	7,967	44.1
2014	25,404	1,370	0	650	27,424	21,154	2,113	19,041	8,382	44.0	0	8,382	44.0
2015	26,714	1,370	0	650	28,734	21,882	2,196	19,687	9,047	46.0	0	9,047	46.0
2016	27,539	440	0	650	28,629	22,396	2,278	20,118	8,510	42.3	0	8,510	42.3
2017	28,373	50	0	650	29,073	22,912	2,361	20,551	8,521	41.5	0	8,521	41.5
2018	28,373	50	0	650	29,073	23,466	2,436	21,030	8,043	38.2	0	8,043	38.2

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 2009 load forecast without incremental DSM or cumulative load management.

4/ The DSM MW shown represent cumulative load management capability plus incremental conservation from 1/2008-on desinged for use with the 2008 load forecast. 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)	(5)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
				Fuel		Fuel Transport						Net Capability		
Plant Name	Unit No.	Location	Unit Type	Pri.	Alt.	Pri.	Alt.	Const. Start Mo./Yr.	Comm. In-Service Mo./Yr.	Expected Retirement Mo./Yr.	Gen. Max. Nameplate KW	Winter MW	Summer MW	Status
ADDITIONS/ CHANGES														
2009														
Cape Canaveral	1	Brevard County	ST	FO6	NG	WA	PL	Jan-09	Jun-09	Unknown	402,050	(1)	(1)	OT
Cape Canaveral	2	Brevard County	ST	FO6	NG	WA	PL	Jan-09	Jun-09	Unknown	402,050	(8)	(8)	OT
Cutler	5	Miami Dade County	ST	NG	No	PL	No	Jan-09	May-09	Unknown	75,000	(4)	---	OT
DeSoto Next Generating Solar Energy Center (PV)		DeSoto County	PV											P
Ft. Myers	2	Lee County	CC	NG	No	PL	No	Jan-09	Jun-09	Unknown	1,775,390	5	5	OT
Ft. Myers	3	Lee County	CT	NG	FO2	PL	PL	Jan-09	Jun-09	Unknown	376,380	5	8	OT
Lauderdale	4	Broward County	CC	NG	FO2	PL	PL	Jan-09	Jun-09	Unknown	526,250	4	2	OT
Lauderdale	5	Broward County	CC	NG	FO2	PL	PL	Jan-09	Jun-09	Unknown	526,250	1	(1)	OT
Manatee	1	Manatee County	ST	FO6	NG	WA	PL	Jan-09	Jun-09	Unknown	863,300	(3)	(1)	OT
Manatee	2	Manatee County	ST	FO6	NG	WA	PL	Jan-09	Jun-09	Unknown	863,300	12	10	OT
Manatee	3	Manatee County	CC	NG	No	PL	No	Jan-09	Jun-09	Unknown	1,224,510	(55)	9	OT
Martin	1	Martin County	ST	FO6	NG	PL	PL	Jan-09	Jun-09	Unknown	934,500	7	---	OT
Martin	2	Martin County	ST	FO6	NG	PL	PL	Jan-09	Jun-09	Unknown	934,500	7	---	OT
Martin	3	Martin County	CC	NG	No	PL	No	Jan-09	Jun-09	Unknown	612,000	(17)	(30)	OT
Martin	4	Martin County	CC	NG	No	PL	No	Jan-09	Jun-09	Unknown	612,000	(3)	(5)	OT
Martin	8	Martin County	CC	NG	FO2	PL	PL	Jan-09	Jun-09	Unknown	1,224,510	13	8	OT
Port Everglades	3	City of Hollywood	ST	FO6	NG	WA	PL	Jan-09	Jun-09	Unknown	402,050	6	6	OT
Port Everglades	4	City of Hollywood	ST	FO6	NG	WA	PL	Jan-09	Jun-09	Unknown	402,050	5	5	OT
Putnam	1	Putnam County	CC	NG	FO2	PL	WA	Jan-09	Jun-09	Unknown	290,004	5	---	OT
Putnam	2	Putnam County	CC	NG	FO2	PL	WA	Jan-09	Jun-09	Unknown	290,004	6	1	OT
Riviera	3	City of Riviera Beach	ST	FO6	NG	WA	PL	Jan-09	Jun-09	Unknown	310,420	(3)	(276)	OT
Riviera	4	City of Riviera Beach	ST	FO6	NG	WA	PL	Jan-09	Jun-09	Unknown	310,420	(3)	(286)	OT
Sanford	3	Volusia County	ST	FO6	NG	WA	PL	Jan-09	5/1/2009	---	156,250	1	---	OT
Sanford	4	Volusia County	CC	NG	No	PL	No	Jan-09	Jun-09	Unknown	1,188,860	12	9	OT
Sanford	5	Volusia County	CC	NG	No	PL	No	Jan-09	Jun-09	Unknown	1,188,860	11	9	OT
Scherer	4	Monroe, GA	BIT	BIT	No	RR	No	Jan-09	Jun-09	Unknown	680,368	(10)	(15)	OT
SJRPP	2	Duval County	BIT	BIT	Pet	RR	WA	Jan-09	Jun-09	Unknown	135,918	2	(3)	OT
SJRPP	1	Duval County	BIT	BIT	Pet	RR	WA	Jan-09	Jun-09	Unknown	135,918	2	(3)	OT
Space Coast Next Generating Solar Energy Center (PV)	1	Brevard County	PV											P
Turkey Point	2	Miami Dade County	ST	FO6	NG	WA	PL	Jan-09	Jun-09	Unknown	402,050	(4)	(4)	OT
Turkey Point	5	Miami Dade County	CC	NG	No	PL	No	Jan-09	Jun-09	Unknown	1,224,510	(71)	11	OT
West County Combined Cycle	1	Palm Beach County	CC	NG	FO2	PL	PL	Jan-07	Aug-09	Unknown	Unknown	---	1,219	V
								2009 Changes/Additions w/o Inactive Reserve Total:				(78)	670	
Cutler	5	Miami Dade County	ST	NG	No	PL	No	---	---	---	75,000	—	(64)	OT
Cutler	6	Miami Dade County	ST	NG	No	PL	No	---	---	---	161,500	—	(137)	OT
Sanford	3	Volusia County	ST	FO6	NG	WA	PL	---	---	---	156,250	—	(139)	OT
Port Everglades	1	City of Hollywood	ST	FO6	NG	WA	PL	---	---	---	247,775	—	(213)	OT
Port Everglades	2	City of Hollywood	ST	FO6	NG	WA	PL	---	---	---	247,775	—	(213)	OT
								2009 Changes/Additions with Inactive Reserve Total:				(78)	(96)	

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 MW additions/changes occuring later in the year will be picked up for reporting/planning purposes in the following year.

Note 2: Changes shown may include different ratings than shown in Schedule 1 due solely to ambient temperature consistent with those in FPL 's peak load forecast to maintain consistency in reserve margin calculations.

Note 3: The Photovoltaic MWs are not included in the total at this time because these facilities are assumed to provide non-firm energy only.

Schedule 8
Planned And Prospective Generating Facility Additions And Changes

Plant Name	(2) Unit No.	(3) Location	(4) Unit Type	(5) Fuel Pri.	(5) Fuel Alt.	(7) Fuel Transport Pri.	(8) Fuel Transport Alt.	(9) Const. Start Mo./Yr.	(10) Comm. In-Service Mo./Yr.	(11) Expected Retirement Mo./Yr.	(12) Gen. Max. Nameplate KW	(13) Net Capability Winter MW	(14) Net Capability Summer MW	(15) Status
ADDITIONS/ CHANGES														
2010														
Cape Canaveral	1	Brevard County	ST	FO6	NG	WA	PL		May-10	Unknown	402,050	---	(395)	
Cape Canaveral	2	Brevard County	ST	FO6	NG	WA	PL		May-10	Unknown	402,050	---	(388)	
DeSoto Next Generating Solar Energy Center (PV)	1	DeSoto County	PV											P
Lauderdale	4	Broward County	CC	NG	FO2	PL	PL	Jan-10	Jun-10	Unknown	526,250	1	1	OT
Manatee	1	Manatee County	ST	FO6	NG	WA	PL	Jan-10	Jun-10	Unknown	863,300	15	11	OT
Martin	3	Martin County	CC	NG	No	PL	No	Jan-10	Jun-10	Unknown	612,000	14	13	OT
Riviera	3	City of Riviera Beach	ST	FO6	NG	WA	PL	Jan-10	Jun-09	Unknown	310,420	(277)	---	OT
Riviera	4	City of Riviera Beach	ST	FO6	NG	WA	PL	Jan-10	Jun-09	Unknown	310,420	(288)	---	OT
Sanford	4	Volusia County	CC	NG	No	PL	No	Jan-10	Jun-10	Unknown	1,188,860	5	5	OT
Scherer	4	Monroe, GA	BIT	BIT	No	RR	No	Jan-10	Jun-10	Unknown	680,368	4	4	OT
SJRPP	2	Duval County	BIT	BIT	Pet	RR	WA	Jan-10	Jun-10	Unknown	135,918	(2)	(2)	OT
Space Coast Next Generating Solar Energy Center (PV)	1	Brevard County	PV											P
Turkey Point	2	Miami Dade County	ST	FO6	NG	WA	PL	Jan-10	Jun-10	Unknown	402,050	4	4	OT
West County Combined Cycle	1	Palm Beach County	CC	NG	FO2	PL	PL	Jan-07	Aug-09	Unknown	Unknown	1,335	---	V
West County Combined Cycle	2	Palm Beach County	CC	NG	FO2	PL	PL	Jan-08	Dec-09	Unknown	Unknown	1,335	1,219	V
									2010 Changes/Additions w/o Inactive Reserve Total:			**2,146**	**472**	
Martin	2	Martin County	ST	FO6	NG	PL	PL	---	---	---	934,500	---	(826)	OT
Manatee	2	Manatee County	ST	FO6	NG	WA	PL	---	---	---	863,300	---	(822)	OT
Cutler	5	Miami Dade County	ST	NG	No	PL	No	---	---	---	75,000	(69)	---	OT
Cutler	6	Miami Dade County	ST	NG	No	PL	No	---	---	---	161,500	(139)	---	OT
Sanford	3	Volusia County	ST	FO6	NG	WA	PL	---	---	---	156,250	(141)	---	OT
Port Everglades	1	City of Hollywood	ST	FO6	NG	WA	PL	---	---	---	247,775	(214)	---	OT
Port Everglades	2	City of Hollywood	ST	FO6	NG	WA	PL	---	---	---	247,775	(214)	---	OT
									2010 Changes/Additions with Inactive Reserve Total:			**1,369**	**(1,176)**	
2011														
Cape Canaveral	1	Brevard County	ST	FO6	NG	WA	PL	Jan-11	Jun-11	Unknown	402,050	(397)	---	OT
Cape Canaveral	2	Brevard County	ST	FO6	NG	WA	PL	Jan-11	Jun-11	Unknown	402,050	(397)	---	OT
Fort Myers	2	Lee County	CC	NG	No	PL	No	Jan-11	Jun-11	Unknown	1,775,390	(22)	(22)	OT
Fort Myers	3	Lee County	CT	NG	FO2	PL	PL	Jan-11	Jun-11	Unknown	376,380	(3)	(2)	OT
Lauderdale	4	Broward County	CC	NG	FO2	PL	PL	Jan-11	Jun-11	Unknown	526,250	(5)	(9)	OT
Lauderdale	5	Broward County	CC	NG	FO2	PL	PL	Jan-11	Jun-11	Unknown	526,250	(1)	(5)	OT
Manatee	1	Manatee County	ST	FO6	NG	WA	PL	Jan-11	Jun-11	Unknown	863,300	(9)	(8)	OT
Manatee	2	Manatee County	ST	FO6	NG	WA	PL	Jan-11	Jun-11	Unknown	863,300	(9)	(8)	OT
Manatee	3	Manatee County	CC	NG	No	PL	No	Jan-11	Jun-11	Unknown	1,224,510	65	(16)	OT
Martin	1	Martin County	ST	FO6	NG	PL	PL	Jan-11	Jun-11	Unknown	934,500	(5)	(4)	OT
Martin	2	Martin County	ST	FO6	NG	PL	PL	Jan-11	Jun-11	Unknown	934,500	(5)	(4)	OT
Martin	3	Martin County	CC	NG	No	PL	No	Jan-11	Jun-11	Unknown	612,000	8	23	OT
Martin	4	Martin County	CC	NG	No	PL	No	Jan-11	Jun-11	Unknown	612,000	8	11	OT
Martin	5	Martin County	CC	NG	FO2	PL	PL	Jan-11	Jun-11	Unknown	1,224,510	(10)	(9)	OT
Port Everglades	3	City of Hollywood	ST	FO6	NG	WA	PL	Jan-11	Jun-11	Unknown	402,050	(6)	(6)	OT
Port Everglades	4	City of Hollywood	ST	FO6	NG	WA	PL	Jan-11	Jun-11	Unknown	402,050	(5)	(5)	OT
Putnam	1	Putnam County	CC	NG	FO2	PL	WA	Jan-11	Jun-11	Unknown	290,004	12	---	OT
Putnam	2	Putnam County	CC	NG	FO2	PL	WA	Jan-11	Jun-11	Unknown	290,004	11	(1)	OT
Sanford	4	Volusia County	CC	NG	No	PL	No	Jan-11	Jun-11	Unknown	1,188,860	14	(10)	OT
Sanford	5	Volusia County	CC	NG	No	PL	No	Jan-11	Jun-11	Unknown	1,188,860	19	(5)	OT
SJRPP	1	Duval County	BIT	BIT	Pet	RR	WA	Jan-11	Jun-11	Unknown	135,918	(2)	(2)	OT
Turkey Point	5	Miami Dade County	CC	NG	No	PL	No	Jan-11	Jun-11	Unknown	1,224,510	71	(11)	OT
West County Combined Cycle	3	Palm Beach County	CC	NG	FO2	PL	PL	Jan-09	Jun-11	Unknown	Unknown	---	1219	T
									2011 Changes/Additions w/o Inactive Reserve Total:			**(668)**	**1,125**	
Martin	2	Martin County	ST	FO6	NG	PL	PL	---	---	---	934,500	(834)	---	OT
Manatee	2	Manatee County	ST	FO6	NG	WA	PL	---	---	---	863,300	(825)	---	OT
									2011 Changes/Additions with Inactive Reserve Total:			**(2,327)**	**1,125**	

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 MW additions/changes occuring later in the year will be picked up for reporting/planning purposes in the following year.

Note 2: Changes shown may include different ratings than shown in Schedule 1 due solely to ambient temperature consistent with those in FPL 's peak load forecast to maintain consistency in reserve margin calculations.

Note 3: The Photovoltaic MWs are not included in the total at this time because these facilities are assumed to provide non-firm energy only.

Schedule 8
Planned And Prospective Generating Facility Additions And Changes

Plant Name	(2) Unit No.	(3) Location	(4) Unit Type	(5) Fuel Pri.	(5) Fuel Alt.	(7) Fuel Transport Pri.	(8) Fuel Transport Alt.	(9) Const. Start Mo./Yr.	(10) Comm. In-Service Mo./Yr.	(11) Expected Retirement Mo./Yr.	(12) Gen. Max. Nameplate KW	(13) Net Capability Winter MW	(14) Net Capability Summer MW	(15) Status
ADDITIONS/ CHANGES														
2012														
Scherer	4	Monroe, GA	BIT	BIT	No	RR	No	Jan-12	Jun-12	Unknown	680,368	(11)	(11)	OT
St. Lucie Uprates	1	St. Lucie County	NP	UR	No	TK	No	See Note 3	Dec-11	Unknown	850,000	103	103	T
St. Lucie Uprates	2	St. Lucie County	NP	UR	No	TK	No	See Note 3	Jun-12	Unknown	723,775	---	88	T
Turkey Point Uprates	3	Miami Dade County	NP	UR	No	TK	No	See Note 3	May-12	Unknown	759,900	---	104	T
West County Combined Cycle	3	Palm Beach County	CC	NG	FO2	PL	PL	Jan-09	Jun-11	Unknown	Unknown	1,335	---	T
								2012 Changes/Additions w/o Inactive Reserve Total:				1,427	284	
												---	---	
								2012 Changes/Additions with Inactive Reserve Total:				1,427	284	
2013														
Cape Canaveral Next Generation Clean Energy Center	1	Brevard County	CC	NG	FO2	PL	PL	Jun-11	Jun-13	Unknown	Unknown	---	1,219	T
St. Lucie Uprates	2	St. Lucie County	NP	UR	No	TK	No	See Note 3	Jun-12	Unknown	723,775	88	---	T
Turkey Point Uprates	3	Miami Dade County	NP	UR	No	TK	No	See Note 3	May-12	Unknown	759,900	104	---	T
Turkey Point Uprates	4	Miami Dade County	NP	UR	No	TK	No	See Note 3	Dec-12	Unknown	759,900	104	104	T
								2013 Changes/Additions w/o Inactive Reserve Total:				296	1,323	
												---	---	
								2013 Changes/Additions with Inactive Reserve Total:				296	1,323	
2014														
Cape Canaveral Next Generation Clean Energy Center	1	Brevard County	CC	NG	FO2	PL	PL	Jun-11	Jun-13	Unknown	Unknown	1,343	---	T
Riviera Beach Next Generation Clean Energy Center	1	City of Riviera Beach	CC	NG	FO2	PL	PL	Jun-12	Jun-14	Unknown	Unknown	---	1,207	T
								2014 Changes/Additions w/o Inactive Reserve Total:				1,343	1,207	
												---	---	
								2014 Changes/Additions with Inactive Reserve Total:				1,343	1,207	
2015														
Riviera Beach Next Generation Clean Energy Center	1	City of Riviera Beach	CC	NG	FO2	PL	PL	Jun-12	Jun-14	Unknown	Unknown	1,310	---	T
								2015 Changes/Additions w/o Inactive Reserve Total:				1,310	0	
												---	---	
								2015 Changes/Additions with Inactive Reserve Total:				1,310	0	
2016														
												---	---	
								2016 Changes/Additions w/o Inactive Reserve Total:				---	---	
Manatee	2	Manatee County	ST	FO6	NG	WA	PL		Jun-16	Unknown	863,300	---	814	OT
								2016 Changes/Additions with Inactive Reserve Total:				0	814	
2017														
												---	---	
								2017 Changes/Additions w/o Inactive Reserve Total:				---	---	
Manatee	2	Manatee County	ST	FO6	NG	WA	PL		Jun-16	Unknown	863,300	825		OT
Martin	2	Martin County	ST	FO6	NG	PL	PL		Jun-17	Unknown	934,500	---	822	OT
								2017 Changes/Additions w/o Inactive Reserve Total:				825	822	
2018														
Turkey Point Nuclear Unit	6	Miami Dade County	NP	UR	No	TK	No	Jan-11	Jun-18	Unknown	Unknown	---	1,100	T
								2018 Changes/Additions w/o Inactive Reserve Total:				0	1,100	
Martin	2	Martin County	ST	FO6	NG	PL	PL			Jun-17	934,500	834	---	OT
								2018 Changes/Additions with Inactive Reserve Total:				834	1,100	

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 MW additions/changes occuring later in the year will be picked up for reporting/planning purposes in the following year.*

Note 2: Changes shown may include different ratings than shown in Schedule 1 due solely to ambient temperature consistent with those in FPL 's peak load forecast to maintain consistency in reserve margin calculations.

Note 3: The nuclear uprates will be performed during the scheduled refueling outages for each unit.

Note 4: Certain existing FPL units that have been placed on temporarily on Inactive Reserve status are assumed, for planning purposes in this document, to being returning to active reserve starting in 2016.

Schedule 9

Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** West County Energy Center Combined Cycle Unit 1

(2) **Capacity**
- a. Summer 1,219 MW
- b. Winter 1,335 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:** V (Under construction, more than 50% complete)

(10) **Certification Status:** V (Under construction, more than 50% complete)

(11) **Status with Federal Agencies:** V (Under construction, more than 50% complete)

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

Planned Outage Factor (POF):	2.1%	
Forced Outage Factor (FOF):	1.1%	
Equivalent Availability Factor (EAF):	96.8%	(Base & Duct Firing Operation)
Resulting Capacity Factor (%):	Approx. 90%	(First Full Year Base Operation)
Average Net Operating Heat Rate (ANOHR): Base Operation 75F,100%	6,582 Btu/kWh	(Base Operation)

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

Book Life (Years):	25 years
Total Installed Cost (2009 $/kW):	565
Direct Construction Cost ($/kW):	
AFUDC Amount ($/kW):	55
Escalation ($/kW):	
Fixed O&M ($/kW -Yr.): (2009 $kW-Yr)	11.65
Variable O&M ($/MWH): (2009 $/MWH)	0.138
K Factor:	1.5834

* $/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:** West County Energy Center Combined Cycle Unit 2

(2) **Capacity**
- a. Summer 1,219 MW
- b. Winter 1,335 MW

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

(4) **Anticipated Construction Timing**
- a. Field construction start-date: 2008
- 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:** V (Under construction, more than 50% complete)

(10) **Certification Status:** V (Under construction, more than 50% complete)

(11) **Status with Federal Agencies:** V (Under construction, more than 50% complete)

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

Planned Outage Factor (POF):	2.1%	
Forced Outage Factor (FOF):	1.1%	
Equivalent Availability Factor (EAF):	96.8%	(Base & Duct Firing Operation)
Resulting Capacity Factor (%):	Approx. 88%	(First Full Year Base Operation)
Average Net Operating Heat Rate (ANOHR): Base Operation 75F,100%	6,582 Btu/kWh	(Base Operation)

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

Book Life (Years):	25 years
Total Installed Cost (2010 $/kW):	519
Direct Construction Cost ($/kW):	
AFUDC Amount ($/kW):	57
Escalation ($/kW):	
Fixed O&M ($/kW -Yr.): (2010 $kW-Yr)	10.11
Variable O&M ($/MWH): (2010 $/MWH)	0.138
K Factor:	1.5873

* $/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:** DeSoto Next Generation Solar Energy Center

(2) **Capacity**
a. Summer 25 MW
b. Winter 25 MW

(3) **Technology Type:** Photovoltaic

(4) **Anticipated Construction Timing**
a. Field construction start-date: 2009
b. Commercial In-service date: 2010

(5) **Fuel**
a. Primary Fuel Solar
b. Alternate Fuel N/A

(6) **Air Pollution and Control Strategy:** N/A

(7) **Cooling Method:** N/A

(8) **Total Site Area:** 180 Acres

(9) **Construction Status:** U (Under construction, less than 50% complete)

(10) **Certification Status:** Pemitted (Individual Permits)

(11) **Status with Federal Agencies:** Permitted

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

Planned Outage Factor (POF):	N/A
Forced Outage Factor (FOF):	N/A
Equivalent Availability Factor (EAF):	0.98
Resulting Capacity Factor (%):	Approx. 25% (First Full Year of Operation)
Average Net Operating Heat Rate (ANOHR):	N/A Btu/kWh
Base Operation 75F,100%	

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

Book Life (Years):	25 years
Total Installed Cost (2010 $/kW):	6,937
Direct Construction Cost ($/kW):	-
CWIP Amount ($/kW):	369
Escalation ($/kW):	-
Fixed O&M ($/kW -Yr.): (2010 $kW-Yr)	54
Variable O&M ($/MWH): (2010 $/MWH)	0
K Factor:	1.15

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

NOTE: Total installed cost includes transmission interconnection.

Schedule 9

Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** Space Coast Next Generation Energy Center

(2) **Capacity**
- a. Summer 10 MW
- b. Winter 10 MW

(3) **Technology Type:** Photovoltaic

(4) **Anticipated Construction Timing**
- a. Field construction start-date: 2009
- b. Commercial In-service date: 2010

(5) **Fuel**
- a. Primary Fuel: Solar
- b. Alternate Fuel: N/A

(6) **Air Pollution and Control Strategy:** N/A

(7) **Cooling Method:** N/A

(8) **Total Site Area:** 60 Acres

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

(10) **Certification Status:** P (Planned- Individual Permits)

(11) **Status with Federal Agencies:** Permitted

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

Planned Outage Factor (POF):	N/A
Forced Outage Factor (FOF):	N/A
Equivalent Availability Factor (EAF):	0.98
Resulting Capacity Factor (%):	Approx. 21.3% (First Full Year of Operation)
Average Net Operating Heat Rate (ANOHR):	N/A Btu/kWh
Base Operation 75F,100%	

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

Book Life (Years):	25 years
Total Installed Cost (2010 $/kW):	7,890
Direct Construction Cost ($/kW):	-
CWIP Amount ($/kW):	427.7
Escalation ($/kW):	-
Fixed O&M ($/kW -Yr.): (2010 $kW-Yr)	54
Variable O&M ($/MWH): (2010 $/MWH)	0
K Factor:	1.2100

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

NOTE: Total installed cost includes transmission interconnection.

Schedule 9

Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** West County Energy Center Combined Cycle Unit 3

(2) **Capacity**
- a. Summer 1,219 MW
- b. Winter 1,335 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:** Cooling Tower

(8) **Total Site Area:** 220 Acres

(9) **Construction Status:** T (Regulatory approval received, but not under construction)

(10) **Certification Status:** T (Regulatory approval received, but not under construction)

(11) **Status with Federal Agencies:** T (Regulatory approval received, but not under construction)

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

Planned Outage Factor (POF):	2.1%	
Forced Outage Factor (FOF):	1.1%	
Equivalent Availability Factor (EAF):	96.8%	(Base & Duct Firing Operation)
Resulting Capacity Factor (%):	Approx. 93%	(First Full Year Base Operation)
Average Net Operating Heat Rate (ANOHR): Base Operation 75F,100%	6,582 Btu/kWh	(Base Operation)

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

Book Life (Years):	25 years
Total Installed Cost (2011 $/kW):	709
Direct Construction Cost ($/kW):	
AFUDC Amount ($/kW):	71
Escalation ($/kW):	
Fixed O&M ($/kW -Yr.): (2011 $kW-Yr)	11.63
Variable O&M ($/MWH): (2011 $/MWH)	0.480
K Factor:	1.4697

* $/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:** St. Lucie 1 Nuclear Uprate

(2) **Capacity**
a. Summer 103 MW (Incremental)
b. Winter 103 MW (Incremental)

(3) **Technology Type:** Nuclear

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

(5) **Fuel**
a. Primary Fuel Uranium
b. Alternate Fuel ---

(6) **Air Pollution and Control Strategy:** No change from existing unit

(7) **Cooling Method:** No change from existing unit

(8) **Total Site Area:** No change from existing unit

(9) **Construction Status:** T (Regulatory approval received, but not under construction)

(10) **Certification Status:** T (Regulatory approval received, but not under construction)

(11) **Status with Federal Agencies:** T (Regulatory approval received, but not under construction)

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

Planned Outage Factor (POF):	No change from existing unit
Forced Outage Factor (FOF):	No change from existing unit
Equivalent Availability Factor (EAF):	No change from existing unit
Resulting Capacity Factor (%):	No change from existing unit
Average Net Operating Heat Rate (ANOHR):	No change from existing unit
Base Operation 75F,100%	No change from existing unit

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

Book Life (Years):	25	years (Matches the current operating license period.)
Total Installed Cost ($/kW): **	3,054	(See Note (1) for explanation.)
Direct Construction Cost:	3,054	(See Note (1) for explanation.)
AFUDC Amount ($/kW):		(See Note (2) for explanation.)
Escalation ($/kW):		(See Note (3) for explanation.)
Fixed O&M ($/kW -Yr.):	There is no additional O&M impact from this project.	
Variable O&M ($/MWH):	There is no additional O&M impact from this project.	
K Factor:		(See Note (2) for explanation.)

NOTE:

(1) This value does not include a plant-specific portion of the early recovery of approx. $353 million of capital carrying costs in total associated with the uprates at the four existing nuclear units, nor a plant-specific portion of a projected $45 million in total for transmission costs associated with the uprates at the four existing nuclear units.
(2) Not applicable due to early recovery of capital carrying costs.
(3) These costs are included in the Total Installed Cost value.

* $/kW values are based on incremental Summer capacity.
** $/incremental kW

Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** Turkey Point 3 Nuclear Uprate

(2) **Capacity**
a. Summer 104 MW (Incremental)
b. Winter 104 MW (Incremental)

(3) **Technology Type:** Nuclear

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

(5) **Fuel**
a. Primary Fuel Uranium
b. Alternate Fuel ---

(6) **Air Pollution and Control Strategy:** No change from existing unit

(7) **Cooling Method:** No change from existing unit

(8) **Total Site Area:** No change from existing unit

(9) **Construction Status:** T (Regulatory approval received, but not under construction)

(10) **Certification Status:** T (Regulatory approval received, but not under construction)

(11) **Status with Federal Agencies:** T (Regulatory approval received, but not under construction)

(12) **Projected Unit Performance Data:**
Planned Outage Factor (POF): No change from existing unit
Forced Outage Factor (FOF): No change from existing unit
Equivalent Availability Factor (EAF): No change from existing unit
Resulting Capacity Factor (%): No change from existing unit
Average Net Operating Heat Rate (ANOHR): No change from existing unit
Base Operation 75F,100% No change from existing unit

(13) **Projected Unit Financial Data** *
Book Life (Years): 20 years (Matches the current operating license period.)
Total Installed Cost ($/kW): ** 3,580 (See Note (1) for explanation.)
Direct Construction Cost ($/kW): 3,580 (See Note (1) for explanation.)
AFUDC Amount ($/kW): (See Note (2) for explanation.)
Escalation ($/kW): (See Note (3) for explanation.)
Fixed O&M ($/kW -Yr.): There is no additional O&M impact from this project.
Variable O&M ($/MWH): There is no additional O&M impact from this project.
K Factor: (See Note (2) for explanation.)

NOTE:
(1) This value does not include a plant-specific portion of the early recovery of approx. $353 million of capital carrying costs in total associated with the uprates at the four existing nuclear units, nor a plant-specific portion of a projected $45 million in total for transmission costs associated with the uprates at the four existing nuclear units.
(2) Not applicable due to early recovery of capital carrying costs.
(3) These costs are included in the Total Installed Cost value.

* $/kW values are based on incremental Summer capacity.
** $/incremental kW

Schedule 9

Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** St. Lucie 2 Nuclear Uprate

(2) **Capacity**
a. Summer 103 MW (Total Incremental), 88 MW (incremental FPL's ownership share)
b. Winter 104 MW (Total Incremental), 88 MW (incremental FPL's ownership share)

(3) **Technology Type:** Nuclear

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

(5) **Fuel**
a. Primary Fuel Uranium
b. Alternate Fuel ---

(6) **Air Pollution and Control Strategy:** No change from existing unit

(7) **Cooling Method:** No change from existing unit

(8) **Total Site Area:** No change from existing unit

(9) **Construction Status:** T (Regulatory approval received, but not under construction)

(10) **Certification Status:** T (Regulatory approval received, but not under construction)

(11) **Status with Federal Agencies:** T (Regulatory approval received, but not under construction)

(12) **Projected Unit Performance Data:**
Planned Outage Factor (POF): No change from existing unit
Forced Outage Factor (FOF): No change from existing unit
Equivalent Availability Factor (EAF): No change from existing unit
Resulting Capacity Factor (%): No change from existing unit
Average Net Operating Heat Rate (ANOHR): No change from existing unit
Base Operation 75F,100% No change from existing unit

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

Book Life (Years):	31	years (Matches the current operating license period.)
Total Installed Cost ($/kW): **	3,271	(See Note (1) for explanation.)
Direct Construction Cost ($/kW):	3,271	(See Note (1) for explanation.)
AFUDC Amount ($/kW):		(See Note (2) for explanation.)
Escalation ($/kW):		(See Note (3) for explanation.)
Fixed O&M ($/kW -Yr.):	There is no additional O&M impact from this project.	
Variable O&M ($/MWH):	There is no additional O&M impact from this project.	
K Factor:		(See Note (2) for explanation.)

NOTE:
(1) This value does not include a plant-specific portion of the early recovery of approx. $353 million of capital carrying costs in total associated with the uprates at the four existing nuclear units, nor a plant-specific portion of a projected $45 million in total for transmission costs associated with the uprates at the four existing nuclear units.
(2) Not applicable due to early recovery of capital carrying costs.
(3) These costs are included in the Total Installed Cost value.

* $/kW values are based on incremental Summer capacity.
** $/incremental kW

Schedule 9

Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** Turkey Point 4 Nuclear Uprate

(2) **Capacity**
- a. Summer 104 MW (Incremental)
- b. Winter 104 MW (Incremental)

(3) **Technology Type:** Nuclear

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

(5) **Fuel**
- a. Primary Fuel: Uranium
- b. Alternate Fuel: ---

(6) **Air Pollution and Control Strategy:** No change from existing unit

(7) **Cooling Method:** No change from existing unit

(8) **Total Site Area:** No change from existing unit

(9) **Construction Status:** T (Regulatory approval received, but not under construction)

(10) **Certification Status:** T (Regulatory approval received, but not under construction)

(11) **Status with Federal Agencies:** T (Regulatory approval received, but not under construction)

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

Planned Outage Factor (POF):	No change from existing unit
Forced Outage Factor (FOF):	No change from existing unit
Equivalent Availability Factor (EAF):	No change from existing unit
Resulting Capacity Factor (%):	No change from existing unit
Average Net Operating Heat Rate (ANOHR):	No change from existing unit
Base Operation 75F,100%	No change from existing unit

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

Book Life (Years):	22	years (Matches the current operating license period.)
Total Installed Cost ($/kW): **	3,630	(See Note (1) for explanation.)
Direct Construction Cost ($/kW):	3,630	(See Note (1) for explanation.)
AFUDC Amount ($/kW):		(See Note (2) for explanation.)
Escalation ($/kW):		(See Note (3) for explanation.)
Fixed O&M ($/kW -Yr.):	There is no additional O&M impact from this project.	
Variable O&M ($/MWH):	There is no additional O&M impact from this project.	
K Factor:		(See Note (2) for explanation.)

NOTE:

(1) This value does not include a plant-specific portion of the early recovery of approx. $353 million of capital carrying costs in total associated with the uprates at the four existing nuclear units, nor a plant-specific portion of a projected $45 million in total for transmission costs associated with the uprates at the four existing nuclear units.

(2) Not applicable due to early recovery of capital carrying costs.

(3) These costs are included in the Total Installed Cost value.

* $/kW values are based on incremental Summer capacity.

** $/incremental kW

Schedule 9

Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** Cape Canaveral Next Generation Clean Energy Center

(2) **Capacity**
- a. Summer 1,219 MW
- b. Winter 1,343 MW

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

(4) **Anticipated Construction Timing**
- a. Field construction start-date: 2011
- b. Commercial In-service date: 2013

(5) **Fuel**
- a. Primary Fuel: Natural Gas
- b. Alternate Fuel: Ultra-low sulfur distillate

(6) **Air Pollution and Control Strategy:** Dry Low No_x Burners, SCR, Natural Gas, 0.0015% S. Distillate and Water Injection on Distillate

(7) **Cooling Method:** Once-through cooling water

(8) **Total Site Area:** 43 Acres

(9) **Construction Status:** T (Regulatory approval received, but not under construction)

(10) **Certification Status:** T (Regulatory approval received, but not under construction)

(11) **Status with Federal Agencies:** T (Regulatory approval received, but not under construction)

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

Planned Outage Factor (POF):	2.1%
Forced Outage Factor (FOF):	1.1%
Equivalent Availability Factor (EAF):	96.8%
Resulting Capacity Factor (%):	Approx.90 % (First Full Year Base Operation)
Average Net Operating Heat Rate (ANOHR):	6,580 Btu/kWh
Base Operation 75F,100%	

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

Book Life (Years):	25 years
Total Installed Cost (2013 $/kW):	915
Direct Construction Cost ($/kW):	
AFUDC Amount ($/kW):	98
Escalation ($/kW):	
Fixed O&M ($/kW -Yr.): (2013 $kW-Yr)	14.81
Variable O&M ($/MWH): (2013 $/MWH)	0.15
K Factor:	1.494

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

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

Schedule 9

Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** Riviera Beach Next Generation Clean Energy Center

(2) **Capacity**
- a. Summer 1,207 MW
- b. Winter 1,310 MW

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

(4) **Anticipated Construction Timing**
- a. Field construction start-date: 2012
- b. Commercial In-service date: 2014

(5) **Fuel**
- a. Primary Fuel: Natural Gas
- b. Alternate Fuel: Ultra-low sulfur distillate

(6) **Air Pollution and Control Strategy:** Dry Low No_x Burners, SCR, Natural Gas, 0.0015% S. Distillate and Water Injection on Distillate

(7) **Cooling Method:** Once-through cooling water

(8) **Total Site Area:** 33 Acres

(9) **Construction Status:** T (Regulatory approval received, but not under construction)

(10) **Certification Status:** T (Regulatory approval received, but not under construction)

(11) **Status with Federal Agencies:** T (Regulatory approval received, but not under construction)

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

Planned Outage Factor (POF):	2.1%
Forced Outage Factor (FOF):	1.1%
Equivalent Availability Factor (EAF):	96.8%
Resulting Capacity Factor (%):	Approx. 90% (First Full Year Base Operation)
Average Net Operating Heat Rate (ANOHR): Base Operation 75F,100%	6,576 Btu/kWh

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

Book Life (Years):	25 years
Total Installed Cost (2014 $/kW):	1,057
Direct Construction Cost ($/kW):	
AFUDC Amount ($/kW):	122
Escalation ($/kW):	
Fixed O&M ($/kW -Yr.): (2014 $kW-Yr)	15.32
Variable O&M ($/MWH): (2014 $/MWH)	0.12
K Factor:	1.494

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

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

Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** Turkey Point Unit 6 Nuclear Unit

(2) **Capacity**
a. Summer 1,100 MW
b. Winter 1,100 MW

(3) **Technology Type:** Nuclear

(4) **Anticipated Construction Timing**
a. Field construction start-date: 2011
b. Commercial In-service date: 2018

(5) **Fuel**
a. Primary Fuel uranium dioxide
b. Alternate Fuel NA

(6) **Air Pollution and Control Strategy:** NA

(7) **Cooling Method:** Mechanical Draft Cooling Towers

(8) **Total Site Area:** 211 Acres

(9) **Construction Status:** T (Regulatory approval received, but not under construction)

(10) **Certification Status:** T (Regulatory approval received, but not under construction)

(11) **Status with Federal Agencies:** T (Regulatory approval received, but not under construction)

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

Planned Outage Factor (POF):	TBD	
Forced Outage Factor (FOF):	TBD	
Equivalent Availability Factor (EAF):	TBD	
Resulting Capacity Factor (%):	Approx. 90%	(First Full Year Base Operation)
Average Net Operating Heat Rate (ANOHR):	TBD	Btu/kWh
Base Operation 75F,100%		

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

Book Life (Years):	TBD	years
Total Installed Cost ($/kW):	TBD	
Direct Construction Cost ($/kW):	TBD	
AFUDC Amount ($/kW):	TBD	
Escalation ($/kW):	TBD	
Fixed O&M ($/kW -Yr.): ($kW-Yr)	TBD	
Variable O&M ($/MWH): ($/MWH)	TBD	
K Factor:		

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

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

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

West County Energy Center Unit 1

The new West County Energy Center Unit 1 does not require any "new" transmission lines.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

West County Energy Center Unit 2

The new West County Energy Center Unit 2 does not require any "new" transmission lines.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Desoto Next Generation Solar Energy Center (PV)

The new Desoto Next Generation Solar Energy Center (PV) does not require any "new" transmission lines.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Space Center Next Generation Solar Energy Center (PV)

The new Space Center Next Generation Solar Energy Center (PV) does not require any "new" transmission lines.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

West County Energy Center Unit 3

(1)	Point of Origin and Termination:	New Sugar Substation – Corbett Substation
(2)	Number of Lines:	1
(3)	Right-of-way	FPL Owned
(4)	Line Length:	1 mile
(5)	Voltage:	230 kV
(6)	Anticipated Construction Timing:	Start date: May 2009 End date: November 2010
(7)	Anticipated Capital Investment: (Trans. and Sub.)	$11,300,000
(8)	Substations:	New Sugar Substation and Corbett Substation
(9)	Participation with Other Utilities:	None

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

St. Lucie 1 Nuclear Uprate

The St. Lucie 1 Nuclear Uprate does not require any "new" transmission lines.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Turkey Point 3 Nuclear Uprate

The Turkey Point 3 Nuclear Uprate does not require any "new" transmission lines.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

St. Lucie 2 Nuclear Uprate

The St. Lucie 2 Nuclear Uprate does not require any "new" transmission lines.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Turkey Point 4 Nuclear Uprate

The Turkey Point 4 Nuclear Uprate does not require any "new" transmission lines.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Cape Canaveral Next Generation Clean Energy Center (Conversion)

The Cape Canaveral Next Generation Clean Energy Center, that is the result of the conversion of the exiting Cape Canaveral power plant site, does not require any "new" transmission lines.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Riviera Beach Next Generation Clean Energy Center (Conversion)

The Riviera Beach Energy Center Conversion, that is the result of the conversion of the existing Riviera Beach power plant site, does not require any "new" transmission lines. Several lines will be extended and reconfigured to accommodate the increased capacity.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Turkey Point Unit 6

(1)	Point of Origin and Termination:	New Clear Sky Substation – Levee Substation
(2)	Number of Lines:	2
(3)	Right-of-way	FPL Owned
(4)	Line Length:	43 miles
(5)	Voltage:	500 kV
(6)	Anticipated Construction Timing:	Start date: TBD End date: TBD
(7)	Anticipated Capital Investment: (Trans. and Sub.)	$ TBD
(8)	Substations:	New Clear Sky Substation and Levee Substation
(9)	Participation with Other Utilities:	None

(1)	Point of Origin and Termination:	New Clear Sky Substation – Pennsuco Substation
(2)	Number of Lines:	1
(3)	Right-of-way	FPL Owned
(4)	Line Length:	52 miles
(5)	Voltage:	230 kV
(6)	Anticipated Construction Timing:	Start date: TBD End date: TBD
(7)	Anticipated Capital Investment: (Trans. and Sub.)	$ TBD
(8)	Substations:	New Clear Sky Substation and Pennsuco Substation
(9)	Participation with Other Utilities:	None

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Turkey Point Unit 6

(1)	Point of Origin and Termination:	New Clear Sky Substation – Davis Substation
(2)	Number of Lines:	1
(3)	Right-of-way	FPL Owned
(4)	Line Length:	19 miles
(5)	Voltage:	230 kV
(6)	Anticipated Construction Timing:	Start date: TBD End date: TBD
(7)	Anticipated Capital Investment: (Trans. and Sub.)	$ TBD
(8)	Substations:	New Clear Sky Substation and Davis Substation
(9)	Participation with Other Utilities:	None

(1)	Point of Origin and Termination:	Davis Substation – Miami Substation
(2)	Number of Lines:	1
(3)	Right-of-way	FPL Owned
(4)	Line Length:	18 miles
(5)	Voltage:	230 kV
(6)	Anticipated Construction Timing:	Start date: TBD End date: TBD
(7)	Anticipated Capital Investment: (Trans. and Sub.)	$ TBD
(8)	Substations:	Davis Substation and Miami Substation
(9)	Participation with Other Utilities:	None

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Turkey Point Unit 6

(1)	Point of Origin and Termination:	New Clear Sky Substation – Turkey Point Substation
(2)	Number of Lines:	1
(3)	Right-of-way	FPL Owned
(4)	Line Length:	0.5 miles
(5)	Voltage:	230 kV
(6)	Anticipated Construction Timing:	Start date: TBD End date: TBD
(7)	Anticipated Capital Investment: (Trans. and Sub.)	$ TBD
(8)	Substations:	New Clear Sky Substation and Turkey Point Substation
(9)	Participation with Other Utilities:	None

Existing FIRM and NON-FIRM Capacity and Energy by Primary Fuel Type
Actuals for the Year 2008

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Net (MW) Capability				NEL	Fuel Mix
	Generation by Primary Fuel	Summer (MW)	Summer (%)	Winter (MW)	Winter (%)	GWH	%
(1)	Coal	900	3.6%	902	3.4%	6,423	5.8%
(2)	Nuclear	2,939	11.7%	3,013	11.4%	24,024	21.6%
(3)	Residual	6,764	27.0%	6,818	25.8%	5,702	5.1%
(4)	Distillate	660	2.6%	781	3.0%	17	0.0%
(5)	Natural Gas	10,824	43.2%	11,844	44.9%	58,820	53.0%
(6)	***FPL Existing Units Total (1):***	***22,087***	***88.1%***	***23,358***	***88.5%***	***94,986***	***85.6%***
(7)	Renewables (Purchases)- Firm	157.6	0.6%	157.6	0.6%	1,262	1.1%
(8)	Renewables (Purchases)- Non-Firm	Not Applicable		Not Applicable		365	0.3%
(9)	***Renewable Total:***	***157.6***	***0.6%***	***157.6***	***0.6%***	***1,627***	***1.47%***
(10)	***Purchases Other:***	***2,834.0***	**11.3%**	***2,868.0***	**10.9%**	***14,391***	**13.0%**
(11)	***Total (2):***	***25,078.6***	***100.0%***	***26,383.6***	***100.0%***	***111,004***	***100.0%***

Note:
(1) FPL Existing Units Total of 22,087 MW matches Total System found on Schedule 1.
(2) Net Energy for Load GWH of 111,004 GWH matches Schedule 6.1

Schedule 11.2

Existing NON-FIRM Self-Service Renewable Generation Facilities
Actuals for the Year 2008

(1)	(2)	(3)	(4)	(5)	(6) = (3+4)-(5)
Type of Facility	**Installed Capacity (MW)**	**Projected Annual Output (MWH)**	**Annual Energy Purchased from FPL (MWH)**	**Annual Energy Sold to FPL (MWH)**	**Projected Annual Energy Used by Customer (MWH)**
Customer-Owned PV (less than or equal to 10 kw AC)	0.839	900	33,220	153	33,967
Customer-Owned PV greater than 10 kw and less than or equal to 100 kw AC	0.233	192	558	15	735
Total:	**1.072**	**1,092**	**33,777**	**167**	**34,702**

Notes:

(1) There were approximately 262 customer-owned operating PV facilities interconnected with FPL during 2008.
(2) The Installed Capacity value is the sum of the nameplate ratings (AC kw) for all of the customer-owned PV facilities.
(3) The Projected Annual Output value is based on NREL's PV Watts program and the Installed Capacity value in column (2), adjusted for the date when each facility was installed and assuming each facility operated as planned.
(4) The Annual Energy Purchased from FPL is an actual value from FPL's metered data for 2008.
(5) The Annual Energy Sold to FPL is an actual value from FPL's metered data for 2008.
(6) The Projected Annual Energy Used by Customers is a projected value that is the difference between the (Projected Annual output + Annual Output value in column (2) and the actual Annual Energy Sold to FPL in column (4).

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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 or threatened plant and animal species. FPL competes for air, land, and water resources that are necessary to meet the 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 electric utilities for its commitment to the environment. FPL's environmental leadership has been heralded by many outside organizations as demonstrated by a few recent examples. For the second time (2007 and 2008), FPL Group is ranked first among electric and gas utilities in FORTUNE ® magazine's, "America's Most Admired Companies" edition. FPL scored number one in each of the eight attributes considered: innovation, people management, use of corporate assets, social responsibility, quality of management, financial soundness, long-term investments, and quality of products and services.

In May 2007, FPL Group was included on the KLD Global Climate 100SM Index for the third time since the Global Climate 100 was launched in 2005. The Global Climate 100 is designed to promote investment in public companies whose activities demonstrate the greatest potential for reducing the social and economic consequences of climate change. The Global Climate 100 Index includes a mix of 100 global companies that demonstrate leadership in providing near term solutions to climate change through renewable energy, alternative fuels, clean technology, and efficiency.

In January 2007, FPL Group was named one of the Global 100 Most Sustainable Corporations in the World by Corporate Knights, Inc., a Canadian media company. Some 1,800 companies from a wide range of sectors were evaluated regarding effective management of environmental, social, and governance risks and opportunities. FPL Group was one of the only two United States utility companies to make the list of 100.

FPL Group is one of America's cleanest energy providers and the emissions rates of FPL's power plants are among the lowest in the electric industry. FPL's environmental

achievements were reflected by its No. 1 environmental ranking, for five consecutive years, in the Innovest Strategic Value Advisor's report that compares the environmental performance of 26 United States electric utilities. Innovest is an internationally recognized independent investment research firm specializing in environmental finance and investment opportunities.

In June 2007, FPL's Green (Vehicle) Fleet Program was named the winner of the 2007 Council for Sustainable Florida Large Business Best Practice Award for FPL's commitment to reducing fuel consumption in utilities' vehicle fleets. FPL received the award from the Council for Sustainable Florida, which honors businesses, organizations, and individuals whose work demonstrates that a healthy environment and healthy economy are mutually supportive. Since 1990, the Council has been committed to promoting and recognizing best sustainability practices in Florida.

For the third time, FPL Group was one of only four corporations in the North America Electric Power sector named in the "Climate Leadership Index," an honor roll of global corporations addressing the challenges of climate change.

In 2006, FPL and the Palm Beach County-based Arthur R. Marshall Foundation joined as "partners for the environment." FPL's support included a $25,000 donation to the non-profit organization for educational and restoration programs, including the planting of native Florida wetland trees. In 2007, FPL volunteers returned to help take care of the growing saplings.

FPL has also been the recipient of earlier environmental awards and recognition. In 2001, FPL was awarded Edison Electric Institute's National Land Management Award for its stewardship of 25,000 acres surrounding its Turkey Point Plant. In 2001, FPL was awarded the 2001 Waste Reduction and Pollution Prevention Award from the Solid Waste Association of North America. FPL 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" in 2001 for its emission-reducing "repowering" projects at its Fort Myers and Sanford Plants. FPL won the Council for Sustainable Florida's award in 2002 for its sea turtle conservation and education programs at its St. Lucie Plant. Finally, FPL has been recognized by numerous federal and state agencies for its innovative endangered species protection programs which include such species as manatees, crocodiles, and sea turtles.

As mentioned above, FPL Group has taken a leadership role to address climate change and the call for action for a national climate change policy. The decision to step into the forefront of this issue goes hand-in-hand with FPL Group's longtime commitment to managing operations with sensitivity to the environment.

FPL is taking action now in Florida to address climate change with a number of actions. According to the U.S. Department of Energy (DOE) data, FPL is one of the nation's leaders among electric utilities for its energy efficiency/conservation and load management achievement. FPL's nationally recognized leadership in the implementation of demand side management (DSM) within its system has avoided the need to build the equivalent of more than 12 medium-sized power plants as discussed in Chapters I and III of this document. Also discussed in Chapter III are FPL's plans for adding a significant amount of renewable energy resources. FPL is the nation's leader in power plant "repowerings" and "conversions," significantly increasing the efficiency of a number of its existing power plants while reducing FPL system emissions. Currently, two of FPL's older power plants are slated for conversion to state-of-the-art CC natural gas plants. In addition, FPL's future generation plans include nuclear uprates and two new nuclear units that are projected to significantly reduce air emissions in Florida.

IV.B FPL's Environmental Statement

To reaffirm its commitment to conduct business in an environmentally responsible manner, FPL developed an Environmental Commitment in 1992 to clearly define its position. This statement reflects how FPL incorporates environmental values into all aspects of its activities and serves as a framework for new 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, a dedicated environmental corporate governance program, 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 and/or emergency response, environmental risk assessment/management, environmental regulatory development and tracking, and environmental management information systems.

IV.D Environmental Assurance Program

FPL's Environmental Assurance Program consists of activities which are designed to evaluate environmental performance, verify compliance with corporate 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 FPL 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 2008 environmental outreach activities are noted in Table IV.E.1.

Table IV.E.1: 2008 FPL Environmental Outreach Activities

Activity	# of Participants
Visitors to FPL's Energy Encounter at St. Lucie	20,000
Visitors to Manatee Park	150,000
Number of visits to FPL's Environmental Website	358,000
Number of pieces of Environmental literature distributed	>80,000

IV.F Preferred and Potential Sites

Based upon its projection of future resource needs, FPL has identified eight Preferred Sites and four Potential Sites for future generation additions. Preferred Sites are those locations where FPL has conducted significant reviews and has either taken action, or is planning to take action, to site new generation capacity. Potential Sites are those sites that have attributes that support the siting of generation and are under consideration as a location for future generation. Some of these sites are currently in use as existing generation sites and some are not. The identification of a Potential Site does not indicate that FPL has made a definitive decision to pursue generation (or generation expansion in the case of an existing generation site) at that location, nor does this designation indicate that the size or technology of a generator has been determined. The Preferred Sites and Potential Sites are discussed in separate sections below.

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 and other Greenfield sites.

IV.F.1 Preferred Sites

FPL identifies eight Preferred Sites in this Site Plan: the West County Energy Center (WCEC) adjacent to the existing Corbett FPL substation, the existing St. Lucie plant site, the existing Turkey Point plant site, the existing Cape Canaveral plant site, the existing Riviera plant site, and three locations for new solar power generation: DeSoto County, Brevard County, and the existing Martin plant site.

The West County Energy Center site is the location for three CC capacity additions FPL will make in 2009 through 2011. The St. Lucie site is the location for nuclear capacity uprates that FPL will make in 2011 and 2012. The St. Lucie site is also the location for a

proposed wind generation addition. The Turkey Point site is the location for nuclear capacity uprates that FPL will make in 2011 and 2012 and is the site for two new nuclear units, Turkey Point Units 6 & 7, that are projected to be added in 2018 and 2020, respectively. The existing Cape Canaveral and Riviera plant sites are being proposed for conversion of the two existing steam generating units at each site into one state-of-the-art CC unit at each site in 2013 and 2014, respectively. The three solar projects (DeSoto County, Brevard County, and Martin County) are being proposed for operation in 2009, 2010, and 2010, respectively.

The eight Preferred Sites are discussed below.

Preferred Site # 1: West County Energy Center , Palm Beach County

FPL has identified the property adjacent to the existing Corbett Substation property in unincorporated western Palm Beach County as a Preferred Site for the addition of new generating capacity. The site was selected for the addition of three new CC natural gas power plants with ultra-low sulfur light fuel oil (distillate) as a backup fuel. WCEC Units 1 & 2 have been approved by both the FPSC and the Governor and Cabinet acting as the Siting Board. WCEC Unit 3 has been approved by both the FPSC and the Secretary of the FDEP in lieu of the Governor and Cabinet. The units are scheduled to come in-service in 2009 through 2011, respectively. All three CC units will be identical in regard to technology and capacity.

The existing site is accessible to both natural gas and electrical transmission through existing structures or through additional lateral connections. The facility will use natural gas as the primary fuel and state-of-the-art combustion controls.

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

A USGS map of the West County Energy Center (WCEC) plant site is found at the end of this chapter.

b. Proposed Facilities Layout

A map of the general layout of the WCEC 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

The site was inactive until February 2007 when construction of WCEC Units 1 & 2 was initiated. The site was previously dedicated to industrial (mining) and agricultural use. The site had been excavated, back-filled, and totally re-graded to an elevation of approximately 10 feet above the surrounding land surface. Prior to initiation of power plant construction, no structures were present on the site and vegetation was virtually non-existent. Structures are now being built on the site for work associated with WCEC Units 1 & 2. Construction of WCEC Unit 3 is scheduled to begin in 2009.

e. General Environment Features On and In the Site Vicinity

1. Natural Environment

The plant site had been significantly altered by the construction and operation of a limestone mine where vegetation had been cleared and removed. The surrounding land use is predominantly sugar cane, agriculture, and limestone mining. FPL's existing Corbett substation is located north of the site. The Arthur R. Marshall Loxahatchee National Wildlife Refuge is located to the south of the site.

2. Listed Species

Construction and operation of new units at the site is not expected to affect any rare, endangered, or threatened species. Wildlife utilization of the property is minimal as a result of the prior mining activities. Common wading birds can be observed on areas adjacent to, and occasionally within, the property. The property is adjacent to areas that have been identified as potential habitat for wood stork.

3. Natural Resources of Regional Significance Status

The construction and operation of a gas-fired CC generating facility at this location is not expected to have any adverse impacts on parks, recreation areas, or environmentally sensitive lands including the Arthur R. Marshall Loxahatchee National Wildlife Refuge. Construction will not result in any onsite wetland impacts under federal, state, or local agency permitting criteria.

4. **Other Significant Features**

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

f. Design Features and Mitigation Options

The design of each of the three units is comprised of the following: new 1,219 MW (Summer capacity) unit with each unit consisting of three new combustion turbines (CT) and three new heat recovery steam generators (HRSG) and a new steam turbine. Natural gas delivered via pipeline is the primary fuel type for this facility with ultra-low sulfur light fuel oil (distillate) serving as a backup fuel.

g. Local Government Future Land Use Designations

Local government future land use designation for the project site is "Rural Residential" according to the Palm Beach County Future Land Use Map. Designations for the area under the Palm Beach County Unified Land Development Code classified the project site and surrounding area as Special Agricultural District. The site has been granted conditional use for electrical power facilities under a General Industrial zoning district.

h. Site Selection Criteria Process

The site 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.

i. Water Resources

In regard to WCEC Units 1 & 2, water from the Floridan Aquifer and surface water from the L10/L12 canal (when available) will be used for cooling, service, and process water. Potable water will be purchased from the Palm Beach County water municipality.

In regard to WCEC Unit 3, the primary water source for the project will be reclaimed (reuse) water that will come from Palm Beach County Water Utilities Department. FPL will obtain the necessary approvals to also supply WCEC Units 1 & 2 using reclaimed water once WCEC Unit 3 is operational. Reclaimed water will be used for cooling, service, and process water. Backup water sources include utilizing the Floridan Aquifer allocation permitted for WCEC Units 1 & 2, potable water from Palm Beach County, and the L10/L12 canal when made available by the South Florida

Water Management District (SFWMD). Potable water will be purchased from the Palm Beach County water municipality.

j. Geological Features of Site and Adjacent Areas

The 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 in 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, clay, and phosphate grains. The deepest formation in Palm Beach County on which significant published data are available is the Eocene Age Avon Park. Limited information is available from wells penetrating the underlying Oldsmar formation. The published information on the sediments comprising the formations below the Avon Park Limestone is based on projections from deep wells in Okeechobee, St. Lucie, and Palm Beach counties.

Testing during construction of Exploratory Well 2 (EW-2) demonstrated the presence of a highly permeable zone (Boulder Zone) below a depth of 2,790 feet below pad level (bpl) overlain by a thick confining interval from approximately 2,000 to 2,790 feet bpl. The base of the Underground Source of Drinking Water (USDW) was identified between the depths of 1,932 and 1,959 feet bpl through interpretation of packer tests, water quality data, and geophysical logs. Injection testing has confirmed that the hydrogeology of the EW-2 site is favorable for disposal of fluids via a deep injection well system.

k. Projected Water Quantities for Various Uses

The estimated quantity of water required for industrial processing for all 3 units is approximately 675 gallons per minute (gpm) for uses such as process water and service water. Approximately 22.5 million gallons per day (mgd) of cooling water for the three generating units would be cycled through the cooling towers. Water quantities needed for other uses such as potable water are estimated to be approximately 35,000 gallons per day (gpd) for the entire WCEC site.

l. **Water Supply Sources by Type**

WCEC Units 1 & 2 will use available surface or ground water as the source of cooling water for the cooling towers. The cooling towers will also act as a heat sink for the facility auxiliary cooling system. Such needs for cooling and process water will comply with the existing SFWMD regulations for consumptive water use.

WCEC Unit 3 will use reclaimed water as the primary source of cooling water for the cooling tower. The cooling tower will also act as a heat sink for the facility auxiliary cooling system. Such needs for cooling and process water will comply with the existing SFWMD regulations for consumptive water use. In addition, reclaimed water used at WCEC must meet all relevant requirements of Chapter 62-610, F.A.C., Part III, for use in cooling towers.

It is anticipated that once WCEC Unit 3 is operational, reclaimed water will also become the primary cooling water source for WCEC Units 1 & 2.

m. **Water Conservation Strategies Under Consideration**

The use of reclaimed water is a water conservation strategy because it is a beneficial use of wastewater. Impacts on the surficial aquifer would be minimized and used only for potable water, if necessary. Water from the Floridan Aquifer or the L10/L12 canal will be used for cooling purposes as a backup water source and cooling towers will be utilized. In addition, captured stormwater may be reused in the cooling tower whenever feasible. Stormwater captured in the stormwater ponds will also recharge the surficial aquifer.

n. **Water Discharges and Pollution Control**

Heat will be dissipated in the cooling towers. Blowdown water from the cooling towers, along with other wastestreams, will be injected into the boulder zone of the Floridan Aquifer. Non-point source discharges are not an issue since there will be none at this facility. Storm water runoff will be collected and used to recharge the surficial aquifer via a storm water management system. Design elements will be included to capture suspended sediments. In addition, captured stormwater may be reused in the cooling towers, whenever feasible. The facility will employ a Best Management Practices (BMP) plan and Spill Prevention, Control, and Countermeasure (SPCC) plan to prevent and control the inadvertent release of pollutants.

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

The site is serviced by a new natural gas transmission pipeline that is capable of providing a sufficient quantity of gas to the entire site. Ultra-low sulfur light fuel oil (distillate) would be received by truck and stored in above-ground storage tanks to serve as backup fuel for the WCEC generating units.

p. **Air Emissions and Control Systems**

The use of natural gas and ultra-low sulfur light fuel oil (distillate) and combustion controls will minimize air emissions from these units and ensure compliance with applicable emission limiting standards. Using these fuels minimizes emissions of sulfur dioxide (SO_2), particulate matter, and other fuel-bound contaminants. 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 operations when using ultra-low sulfur light fuel oil (distillate) as backup fuel. These design alternatives constitute the Best Available Control Technology for air emissions, and minimize such emissions while balancing economic, environmental, and energy impacts. Taken together, the design of the WCEC generating units will incorporate features that will make them among the most efficient and cleanest power plants in the State of Florida.

q. **Noise Emissions and Control Systems**

Noise expected to be caused by construction at the site is expected to be below current noise levels for the residents nearest the site. Noise from the operation of the new units will be within allowable levels.

r. **Status of Applications**

In regard to WCEC Units 1 & 2, a Site Certification Application (SCA) for the construction and operation of the West County Energy Center project under the Florida Electrical Power Plant Siting Act was filed in April 2005 and received Site Certification by the Governor and Cabinet, acting as the Siting Board, in December 2006. The Florida Department of Environmental Protection (FDEP) issued an Underground Injection Control (UIC) Exploratory Well permit in January 2006 and another Exploratory Well Permit in December 2006. FDEP issued the Final UIC permit in May 2008. FDEP issued a Prevention of Significant Deterioration (PSD) air

permit in January 2007. After acquiring these permits and authorizations, FPL initiated construction in February 2007 and anticipates an in-service date for WCEC Unit 1 of mid-2009 and Unit 2 by end of 2009.

In regard to WCEC Unit 3, an SCA was filed in December 2007 and received Site Certification by the Secretary of the FDEP, in lieu of the Governor and Cabinet, in November 2008. A Prevention of Significant Deterioration (PSD) air permit was filed in December 2007. The permit was issued by FDEP in July 2008. FPL proposes to initiate construction in 2009 and anticipates an in-service date of mid-2011. WCEC Unit 3 will utilize the UIC system permitted for the entire site.

Preferred Site # 2: St. Lucie Plant, St. Lucie County

FPL's St. Lucie Plant is located in St. Lucie County on Hutchinson Island on an FPL-owned 1,130-acre site. The plant site is bordered by the Atlantic Ocean to the east and the Indian River Lagoon to the west. Located on the site are two nuclear-powered generating units, St. Lucie Units 1 & 2, which have been in operation since 1976 and 1983, respectively. The St. Lucie site has been selected as a Preferred Site for the addition of two types of new generating capacity.

The first type of generating capacity addition is an increase in the capacity of the two existing nuclear generating units that is used to serve FPL's customers of approximately 103 MW for St. Lucie Unit 1 and 88 MW for St. Lucie Unit 2. This difference is due to FPL's 100% ownership share of St. Lucie 1 and its 85% ownership share of St. Lucie Unit 2. This work will involve changes to several existing main components within the existing facilities to increase their capability to produce steam for the generation of electricity. No new facilities are required as part of this capacity "uprate." This capacity uprate, along with a similar capacity uprate of FPL's existing Turkey Point nuclear units, was approved by the FPSC in January 2008. The capacity uprates at St. Lucie for the two nuclear units sited there are projected to be in-service in late 2011 and 2012.

The second type of generating capacity addition is the proposed installation of FPL wind generation turbines at the plant site. In 2007, FPL began the St. Lucie County land use approval process, and soon after applied for the necessary federal and state permitting. However, a decision by the state and federal agencies on the St. Lucie Wind project's permitting won't be finalized until the local land use approval process is completed. The in-service date will depend on the approval and permitting process. Six

wind turbines are being proposed that, in total, would have a maximum output of approximately 13.8 MW.

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

A USGS map of the FPL St. Lucie Nuclear site is found at the end of this chapter.

b. Proposed Facilities Layout

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

St. Lucie Units 1 & 2 are pressurized water reactors, each having two steam generators. The prominent structures, enclosed facilities, and equipment associated with St. Lucie Units 1 & 2 include the containment building, the turbine generator building, the auxiliary building, and the fuel handling building.

Prominent features beyond the power block area include the intake and discharge canals, switchyard, spent-fuel storage facilities, technical and administrative support facilities, and public education facilities (the Energy Encounter and the College of Turtle Knowledge). Significant features surrounding the St. Lucie Units 1 & 2 are predominately undeveloped land and water bodies including; Big Mud Creek, the Atlantic Ocean, Herman's Bay, and Indian River Lagoon.

In regard to the nuclear capacity uprates, the only changes will be modifications to the existing power generation facilities within the power block area, modifications to the switchyard facilities, and modifications to the transmission lines from St. Lucie to Midway substation. None of the other existing facilities at the plant will change as a result of the uprates. No changes to the nuclear power generation facilities are projected as a result of the proposed wind turbine additions.

e. General Environment Features On and In the Site Vicinity

1. Natural Environment

FPL's St. Lucie Plant is located in St. Lucie County on Hutchinson Island on an FPL-owned 1,130-acre site. The St. Lucie Plant includes the reactor buildings, turbine buildings, access/security building, auxiliary building, maintenance facilities, and miscellaneous warehouses and other buildings associated with the operation of Units 1 & 2. The site includes adjacent undeveloped mangrove areas. As a result of the approved capacity uprates, the site characteristics will not change.

The proposed wind turbines are also located on the FPL-owned site. Impacts to the site characteristics are projected to be minimal from the proposed wind turbines.

2. Listed Species

Some listed species known to occur in the area of the plant location are atlantic sturgeon, smalltooth sawfish, loggerhead sea turtle (*Caretta caretta*), green sea turtle (*Chelonia mydas)*, leatherback sea turtle (*Dermochelys coriacea*), hawksbill sea turtle (*Eretmochelys imbriccata*), gopher tortoise (*Gopherus polyphemus*), kemp's ridley sea turtle (*Lepidochelys kempi*), wood stork (*Mycteria americana*), black skimmer (*Rynchops niger*), and least tern (*Sterna antillarum*).

In regard to the nuclear capacity uprates, neither the development work, nor the continued operation of the two nuclear units after the uprate work has been completed, are expected to adversely affect any rare, endangered, or threatened species. No changes in wildlife populations at the adjacent undeveloped areas are anticipated, including listed species. Noise and lighting impacts will not change and it is expected that wildlife will continue to use the undeveloped areas within the St. Lucie Plant boundary.

In regard to the wind turbines, some changes to the adjacent undeveloped areas are anticipated. Noise and lighting impacts will not change and the wind turbines are not anticipated to deter the continued use by wildlife of the undeveloped areas within the St. Lucie Plant boundary or any adjacent areas.

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

Significant features surrounding the St. Lucie Units 1 & 2 are predominately undeveloped land and water bodies including; Big Mud Creek, the Atlantic Ocean, Herman's Bay, and Indian River Lagoon.

4. **Other Significant Features**

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

f. Design Features and Mitigation Options

The source of cooling water for the St. Lucie Plant is the Atlantic Ocean. It is a once-through system. The effects of the discharge of cooling water via these discharge structures were evaluated and mixing zones were established to allow compliance with thermal water quality standards as a part of the Plant's NPDES (Permit No. FL0002208). These mixing zones include the volume of water beyond the discharge structures, at the edge of which the water temperature is no greater than 17°F above the ambient temperature of the intake water.

In regard to the nuclear capacity uprates, the once-through system will continue to be used for the nuclear units. In regard to the wind turbines, no water will be required.

g. Local Government Future Land Use Designations

St. Lucie Units 1 & 2 are located in unincorporated St. Lucie County, Florida. The County has adopted a comprehensive plan, which is updated on a periodic basis. The County Comprehensive Plan incorporates a map that depicts the future land use categories of all property falling within the unincorporated portions of the County. The St. Lucie Plant has a Future Land Use category of Transportation/Utilities (T/U) according to the St. Lucie County Future Land Use Map. The T/U category is described in the St. Lucie County Comprehensive Plan Future Land Use Element Future Land Use.

In regard to the wind turbines, FPL has submitted an application to St. Lucie County to rezone the land that would serve as the footprint of the turbines to the T/U category.

h. Site Selection Criteria Process

The site has been selected as a Preferred Site for the nuclear capacity uprates because it is an existing nuclear plant site and, therefore, offers the opportunity for

increased nuclear capacity. The site has been selected as a Preferred Site for the wind turbines because of the available wind resource at that location.

i. Water Resources

The source of cooling water for the St. Lucie Plant is the Atlantic Ocean. The once-through system flow will not change as a result of the nuclear uprates. No water will be required to operate the wind turbines. Due to the existing nature of the St. Lucie Plant, surrounding surface waters will not be adversely affected by either of the generation capacity additions. Stormwater will be handled by the existing facilities and no new areas will be impacted. Wetlands, groundwater, and nearby surface waters will not be impacted.

j. Geological Features of Site and Adjacent Areas

Beneath the land surface, there is a peat layer 4 to 6 feet thick. Below this layer is the Anastasia Formation, a sedimentary rock formation composed of clay lenses, sandy limestone, and silty fine to medium sand with fragmented shells. This highly permeable stratum extends 35 to 90 feet below mean sea level (msl). Underlying this stratum there is a semi-permeable zone, The Hawthorn Formation, consisting of slightly clayey and very fine silt which extends 600 feet below msl.

The original surficial deposits at the St. Lucie Plant were excavated to a depth of 60 feet and backfilled with Category I or II fill. The fill is underlain by the Anastasia formation, a sequence of partially cemented sand and sandy limestone, which extend to an average depth of about 145 feet. The Anastasia is underlain to an depth of about 600 to 700 feet by the partially cemented and indurated sands, clays, and sandy limestones of The Hawthorn Formation. Underlying these surface strata are about 13,000 feet of Jurassic through Tertiary Formations, primarily carbonate rocks. These formations have a relatively gentle slope to the southeast.

k. Projected Water Quantities for Various Uses

In regard to the nuclear capacity uprates, no change is expected in the quantity or characteristics of industrial wastewaters generated by the facility. Therefore, no change in that compliance achievement status is expected. The capacity uprates will not cause any changes in hydrologic or water quality conditions due to diversion, interception, or additions to surface water flow. The St. Lucie Plant does not directly withdraw groundwater under its current operations and it will not withdraw groundwater after the capacity uprates work is completed. The use of water supplied

by the City of Fort Pierce, which does withdraw groundwater, will remain unchanged and there will be no changes to the groundwater discharges. There will be no quality, quantity, or hydrological changes, either by withdrawal or discharge to a drinking water source. Therefore, there will be no impacts on drinking water.

The wind turbines will not require water for operations and will not cause any changes in the hydrologic or water quality conditions due to diversion, interception, or additions to surface water flow.

l. Water Supply Sources by Type

The source of cooling water for the St. Lucie Plant is the Atlantic Ocean. General plant service water, fire protection water, process water, and potable water are obtained from City of Fort Pierce. Process water uses include demineralizer regeneration, steam cycle makeup, and general service water use for washdowns.

The existing St. Lucie Plant water use is projected to be unchanged as a result of the nuclear capacity uprates. The wind turbines will not require water for operations.

m. Water Conservation Strategies Under Consideration

The existing water resources will not change as a result of the nuclear capacity uprates. The wind turbines will not require water for operations.

n. Water Discharges and Pollution Control

St. Lucie Units 1 & 2 use once-through cooling water from the Atlantic Ocean to remove heat from the main (turbine) condensers via the Circulating Water System (CWS), and to remove heat from other auxiliary equipment via the Auxiliary Equipment Cooling Water System (AECWS). The great majority of this cooling water is used for the CWS.

Under emergency conditions, water can be withdrawn from Big Mud Creek via the Emergency Intake Canal through two 54-inch pipe assemblies in the barrier wall that separates the Creek from the Canal. FPL does not use this intake during normal operations, but does test this system quarterly.

The facility employs a Best Management Practices (BMP) plan and Spill Prevention, Control, and Countermeasure (SPCC) plan to control the inadvertent release of pollutants.

The wind turbines will not require water for operations. Consequently, there will be no water discharge as a result of these turbines.

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

St. Lucie Units 1 & 2 are licensed for uranium-dioxide fuel that is slightly enriched uranium-235. The uranium-dioxide fuel is in the form of pellets contained in Zircaloy tubes with welded end plugs to confine radionuclides. The tubes are fabricated into assemblies designed for loading into the reactor core. Each reactor core includes 217 fuel assemblies.

FPL currently replaces approximately one-third of the fuel assemblies in each reactor at intervals of approximately 18 months. FPL operates the reactors such that the average fuel usage by the reactors is approximately 47,000 megawatt-days per metric ton uranium. In regard to the nuclear capacity uprates, more nuclear fuel will be used due to the increased capacity of each generating unit. No changes in the fuel-handling facilities are required. The addition of the wind turbines will have no fuel-related impact; i.e., no impacts from fuel delivery, storage, waste, or pollution control. Used fuel assemblies are stored in the onsite Nuclear Regulatory Commission (NRC)-approved spent fuel storage facilities. Following completion of the uprates, approximately 11 percent more nuclear fuel will be used to increase the capacity of each unit. No changes in the fuel-handling facilities are required.

Diesel fuel is used in a number of emergency generators that include four main plant generators, two building generators, and various general purpose diesel engines. The main plant emergency generators will not be changed as a result of either of the two types of generation capacity additions. These emergency generators are for standby use only and are tested to assure reliability and for maintenance. Diesel fuel is delivered to the St. Lucie Plant by truck as needed, and stored in tanks with secondary containment.

p. Air Emissions and Control Systems

The St. Lucie Plant is classified as a minor source of air pollution, since FDEP has issued a Federally Enforceable State Operating Permit (FESOP) to keep emissions less than 100 tons per year for any air pollutant regulated under the Clean Air Act.

The applicable units at the St. Lucie Plant in regard to air emissions consist of eight large main plant diesel engines, two smaller diesel engines, and various general-

purpose diesel engines. The air emissions from these engines are limited by the use of 0.05-percent sulfur diesel fuel and good combustion practices. Best Available Control Technology (BACT) is not applicable to these existing emission units.

Nitrogen oxide (NO_x) emissions from the operation of the diesel engines comprise the limiting pollutant for these diesel units at the St Lucie Plant. The FDEP FESOP limits NO_x emissions to 99.4 tons, which includes fuel use limits on the large main plant emergency diesel engines of 97,000 gallons in any 12-month consecutive period and the smaller building and general purpose diesel engines of 190,000 gallons in any 12-month consecutive period. Also, the Plant may choose to combine the diesel units' fuel-tracking, which then limits the NO_x totals for a 12-month consecutive period to a maximum of 80 tons. There will be no change in the operation or emissions of the diesel engines resulting from either the nuclear capacity uprates or the wind turbines.

In addition, neither of these types of generation capacity additions will result in an increase of carbon dioxide (CO_2) or other greenhouse gas emissions. In fact, both of these increases in generation capacity are projected to result in decreased FPL system-wide emissions of CO_2.

q. Noise Emissions and Control Systems

A field survey and impact assessment of noise expected to be caused by construction activities at the site was conducted in regard to both types of generation capacity additions. Predicted noise levels are not expected to result in adverse noise impacts in the vicinity of the site during construction or operation of either generating capacity additions.

r. Status of Applications

In regard to the nuclear capacity uprates, a Site Certification Application (SCA) under the Florida Electrical Power Plant Siting Act was filed in December 2007 and a final order issued in September 2008. The FPSC voted to approve the need for the St. Lucie (and Turkey Point) nuclear capacity uprates and the final order approving the need for these capacity additions was issued in January 2008. In regard to the wind turbines, a Site Certification Application is not required. Individual permit applications were submitted for an Environmental Resource Permit (ERP) and the Army Corps of Engineers Permits in May 2008 and the Coastal Construction Control Line in July 2008. In September of 2007, FPL submitted an application to St. Lucie County for a

Conditional Use, Rezoning, and Height Amendment. The local approvals process is ongoing.

Preferred Site # 3a: Turkey Point Plant, Miami-Dade County – Nuclear Capacity Uprates

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 units (Units 3 & 4), two natural gas/oil conventional boiler units (Units 1 & 2), one CC natural gas unit (Unit 5), 9 small diesel generators, the cooling canals, an FPL-maintained natural wildlife area, and wetlands that have been set aside as the Everglades Mitigation Bank (EMB).

Turkey Point Units 3 & 4 have been in operation since 1972 and 1973, respectively. The Turkey Point site has been selected as a Preferred Site for the increase in the capacity of its two existing nuclear generating units by approximately 103 MW each. This work will involve changes to several existing main components within the existing facilities to increase their capability to produce steam for the generation of electricity. No new or expanded facilities are required as part of this capacity "uprate." This capacity uprate, along with a similar capacity uprate of FPL's existing St. Lucie nuclear units, was approved by the FPSC in January 2008. The capacity uprates at Turkey Point are projected to be in-service in 2012.

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

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

b. Proposed Facilities Layout

A map of the general layout of the Turkey Point Units 3 and 4 generating facility 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

The five existing power generation units and support facilities occupy approximately 150 acres of the 11,000-acre Turkey Point Plant. Support facilities include service buildings, an administration building, fuel oil tanks, water treatment facilities, circulating water intake and outfall structures, wastewater treatment basins, and a system substation. The cooling canal system occupies approximately 5,900 acres. The two 400-megawatt (MW) (nominal) fossil fuel-fired steam electric generation units at the Turkey Point Plant have been in service since 1967 (Unit 1) and 1968 (Unit 2). These units currently burn residual fuel oil and/or natural gas with a maximum equivalent sulfur content of 1 percent. The two 700-MW (nominal) nuclear units have been in service since 1972 (Unit 3) and 1973 (Unit 4). Turkey Point Units 3 and 4 are pressurized water reactor (PWR) units. Turkey Point Unit 5 is a nominal 1,150-MW CC unit that began operation in 2007. Significant features in the vicinity of the site include Biscayne National Park, the Miami-Dade County Homestead Bayfront Park, and the Everglades National Park.

e. General Environment Features On and In the Site Vicinity

1. Natural Environment

The prominent structures and enclosed facilities and equipment associated with Units 3 & 4 include: the containment building, which contains the nuclear steam supply system, including the reactor, steam generators, reactor coolant pumps, and related equipment; the turbine generator building, where the turbine generator and associated main condensers are located; the auxiliary building, which contains waste management facilities, engineered safety components, and other facilities; and the fuel handling building, where the spent fuel storage pool and storage facilities for new fuel are located. Prominent features beyond the power block area include the intake system, cooling canal system, switchyard, spent fuel storage facilities, and technical and administrative support facilities.

2. Listed Species

The construction during the uprating of the units, and operation of the units after the capacity uprating is completed, are not expected to adversely affect any rare, endangered, or threatened species. Listed species known to occur at the site and in the nearby Biscayne National Park that could potentially utilize the 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)*, the white ibis *(Eudocimus albus)*, and bald eagle *(Haliaeetus leucocephalus)*. No bald eagle nests are known to exist in the vicinity of the site. The federally listed, threatened American Crocodile thrives at the Turkey Point site, primarily in and around the southern end of the cooling canals which lie south of the project area. 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 and is attributed with survival improvement and the downlisting of the American Crocodile from endangered to threatened.

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

Significant features in the vicinity on the site include Biscayne National Park, the Miami-Dade County Homestead Bayfront Park, and the Everglades National Park. The portion of Biscayne Bay adjacent to the site is included within the Biscayne National Park. Biscayne National Park contains 180,000 acres, approximately 95% of which is open water interspersed with more than 40 keys. The Biscayne National Park headquarters is located approximately 2 miles north of the Turkey Point plant and is 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

Turkey Point Units 3 & 4 uses cooling water from a closed-cycle cooling canal system to remove heat from the main (turbine) condensers, and to remove heat from other auxiliary equipment. The existing cooling canals will accommodate the increase in heat load that is associated with the increased capacity from the uprates. The maximum predicted increase in water temperature entering the cooling canal system from the units resulting from the uprates is predicted to be about 2.5°F, from 106.1°F to 108.6°F. The associated maximum increase in water temperature returning to the units is about 0.9°F, from 91.9°F to 92.8°F.

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 Process

The site has been selected as a Preferred Site for the nuclear capacity uprates because it is an existing nuclear plant site and, therefore, offers the opportunity for increased nuclear capacity.

i. Water Resources

Unique to Turkey Point plant site is the self-contained cooling canal system that supplies water to condense steam used by the plant's turbine generators. The canal system consists of 36 interconnected canals. The cooling canals occupy an area approximately 2 miles wide by 5 miles long (5,900 acres), approximately four feet deep. The system performs the same function as a giant radiator. The water is circulated through the canals in a two-day journey, ending at the plant's intake pumps.

j. Geological Features of Site and Adjacent Areas

The Turkey Point Plant lies upon the Floridian Plateau, a partly-submerged peninsula of the continental shelf. The peninsula is underlain by approximately 4,000 to 15,000 feet of sedimentary rocks consisting of limestone and associated formations that range in age from Paleozoic to Recent. Little is known about the basement complex of Paleozoic igneous and metamorphic rocks due to their great depth.

Generally in Miami-Dade County, the surficial aquifer (Biscayne Aquifer) consists of a wedge-shaped system of porous clastic and carbonate sedimentary materials, primarily limestone and sand deposits of the Miocene to late Quaternary age. The Biscayne Aquifer is thickest along the eastern coast and varies in thickness from 80 to 200 feet thick. The surficial aquifer is typically composed of Pamlico Sand, Miami Limestone (Oolite), the Fort Thompson and Anastasia Formations (lateral equivalents), Caloosahatchee Marl, and the Tamiami formation. The lower confining layers below the surficial aquifer range in thickness from 350 to 600 feet and are composed of the Hawthorn Group. Beneath the Hawthorn Group, the Floridan Aquifer System ranges from 2,800 to 3,400 feet thick and consists of Suwannee Limestone, Avon Park Limestone, and the Oldsmar Formations.

k. Projected Water Quantities for Various Uses

The addition of nuclear generating capacity as a result of the uprates will not cause any changes in the quantity or characteristics of industrial wastewaters generated by the facility; therefore, no change in that compliance achievement status is expected. The uprates will not cause any changes in hydrologic or water quality conditions due to diversion, interception, or additions to surface water flow. The Turkey Point Plant does not directly withdraw groundwater under its current operations and it will not do so after the capacity uprates. Locally, groundwater is present beneath the Site in the surficial or Biscayne Aquifer and in deeper aquifer zones that are part of the Floridan Aquifer System. There will be no effects on those deeper aquifer zones from the capacity uprates.

l. Water Supply Sources and Type

The source of cooling water for Turkey Point Units 3 & 4 is the cooling canal system. There will be no increase in the amount of water withdrawn as a result of the capacity uprates. General plant service water, fire protection water, process water, and potable water are obtained from Miami-Dade County. Process water uses include demineralizer regeneration, steam cycle makeup, and general service water use for washdowns. The water use for the facility will not change as a result of the capacity uprates.

m. Water Conservation Strategies

The existing water resources will not change as a result of the uprates.

n. Water Discharges and Pollution Control

Heated water discharges are dissipated using the existing closed cooling water system and the cooling canal system.

The facility employs a Best Management Practices (BMP) plan and Spill Prevention, Control, and Countermeasure (SPCC) plan to prevent and control the inadvertent release of pollutants.

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

Turkey Point Units 3 & 4 utilize uranium-dioxide fuel that is slightly enriched uranium-235. The uranium-dioxide fuel is in the form of pellets contained in Zircaloy tubes with welded end plugs to confine radionuclides. The tubes are fabricated into assemblies

designed for loading into the reactor core. Used fuel assemblies are stored in the onsite NRC-approved spent fuel storage facilities.

FPL currently replaces approximately one-third of the fuel assemblies in each reactor at intervals of approximately 18 months. FPL operates the reactors such that the average fuel usage by the reactors is approximately 45,000 megawatt-days per metric ton of uranium. Following completion of the uprates, more nuclear fuel will be used to increase the capacity of each unit. No changes in the fuel handling facilities are required. Following completion of the uprates, approximately 11 percent more nuclear fuel will be used to increase the capacity of each unit. No changes in the fuel-handling facilities are required.

Diesel fuel is used in a number of emergency generators that include four main emergency generators, five smaller emergency generators and various general purpose diesel engines. The emergency generators will not be changed as a result of the capacity uprates. These emergency generators are for stand-by use only and only operated for testing purposes to assure reliability and for maintenance. Diesel fuel for the emergency generators is delivered to the Turkey Point Plant by truck as needed, and stored in tanks with secondary containment.

p. <u>Air Emissions and Control Systems</u>

The normal operation of Turkey Point Units 3 & 4 does not create fossil fuel-related air emissions. However, there are 9 emergency generators associated with Units 3 & 4. Four of these 9 emergency generators are main plant emergency generators which are rated at 2.5 MW each. The remaining 5 are smaller emergency generators which are associated with the security system. In addition, various general purpose diesels are used as needed for Units 3 & 4.

Turkey Point Plant Units 3 & 4's associated emergency generators and diesel engines, together with Units 1, 2, and 5, are classified as a major source of air pollution. FDEP has issued a separate Title V Air Operating Permit for the Turkey Point Nuclear Plant (Permit Number 0250003-004-AV). There are no operating limits for the emergency generators or diesel engines. Emergency diesel generators are limited to ultra-low sulfur distillate (0.0015% sulfur). NOx emissions are regulated under Reasonably Available Control Technology (RACT) requirements in Rule 62-296.570(4)(b)7 F.A.C., which limit NO_x emissions to 4.75 lb/MMBtu. The use of 0.05

percent sulfur diesel fuel and good combustion practices serve to keep NO_x emissions under this limit.

q. Noise Emissions and Control Systems

A field survey and impact assessment of noise expected to be caused by activities associated with the uprates was conducted. Predicted noise levels are not expected to result in adverse noise impacts in the vicinity of the site.

r. Status of Applications

A Site Certification Application (SCA) under the Florida Electrical Power Plant Siting Act was filed in January 2008 and a final order was issued in October 2008. The FPSC voted to approve the need for the Turkey Point (and St. Lucie) uprates and the final order approving the need for this additional nuclear capacity was issued in January 2008.

Preferred Site # 3b: Turkey Point Plant, Miami-Dade County – Unit 6 (& 7)

The Turkey Point Plant property has been selected for two new nuclear generating units (Units 6 & 7) scheduled to come into service in 2018 and 2020, respectively. (Although the projected in-service year of Unit 7, 2020, is outside of the ten-year reporting period addressed in the 2009 Site Plan, FPL has included information regarding this unit.) The Turkey Point Plant property 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 8 miles east of Florida City on Palm Drive. Public access to the plant site is limited due to the operating nuclear units located there. The land surrounding the site is owned by FPL providing a buffer zone. The site is comprised of two existing nuclear units (Units 3 and 4), two natural gas/oil conventional boiler units (Units 1 & 2), one CC natural gas unit (Unit 5), 9 small diesel generators, the cooling canals, an FPL-maintained natural wildlife area, and wetlands that have been set aside as the FPL Everglades Mitigation Bank (EMB).

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

A map of the Turkey Point Units 6 & 7 site is found at the end of this chapter.

b. Proposed Facilities Layout

The Turkey Point Units 6 & 7 site layout is still under development. Information regarding the layout will be presented in future FPL Site Plans as this information becomes available.

c. Map of Site and Adjacent Areas

An overview map of the Turkey Point Units 6 & 7 site and adjacent areas is found at the end of this chapter.

d. Existing Land Uses of Site and Adjacent Areas

Approximately 150 acres of the 11,000 acre Turkey Point Plant Property are used for the existing generation and support facilities and a closed cooling pond. The cooling canal system occupies approximately 5,900 acres. The remaining acreage primarily consists of forested uplands, disturbed uplands, and wetland habitat. Approximately 300 acres within the cooling canal system will be used for Turkey Point Units 6 & 7 site. Significant features in the vicinity include Biscayne National Park, the Miami-Dade County Homestead Bayfront Park, and the Everglades National Park.

e. General Environment Features On and In the Site Vicinity

1. Natural Environment

The location for Turkey Point Units 6 & 7 operating facility is entirely within the cooling canal system that supports the operating plants. This is a previously impacted environment. Some of the associated facilities (e.g. roads, pipelines, etc.) will extend outside of the cooling canal system. These associated facilities are still under development and the potential natural environment in those areas are still under review.

2. Listed Species

Listed species known to occur at the site and in the nearby Biscayne National Park 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)*, the white ibis *(Eudocimus albus)*, and bald eagle *(Haliaeetus leucocephalus)*. No bald eagle nests are known to exist in the vicinity of the site. The federally listed,

threatened American Crocodile thrives at the Turkey Point site, primarily in and around the southern end of the cooling canals that lie south of the project area. 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 and is attributed with survival improvement and the downlisting of the American Crocodile from endangered to threatened.

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

Significant features in the vicinity of the Turkey Point plant property include Biscayne National Park, the Miami-Dade County Homestead Bayfront Park, and the Everglades National Park. The portion of Biscayne Bay adjacent to the site is included within the Biscayne 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 and is adjacent to the Miami-Dade County Homestead Bayfront Park that contains a marina and day use recreational facilities.

4. **Other Significant Features**

FPL is not aware of any other significant features of the Turkey Point Units 6 & 7 sites.

f. Design Features and Mitigation Options

Design features and mitigation options for Turkey Point Units 6 & 7 are still under development. Information regarding these design features and mitigation options will be presented in future FPL Site Plans as this information becomes available.

g. Local Government future Land Use Designations

FPL received zoning approval for Turkey Point Units 6 & 7 from Miami-Dade County in December 2007. FPL continues to work with Miami-Dade County on land use designations as project features develop.

h. Site Selection Criteria Process

FPL conducted an extensive site selection analysis leading to the selection of the Turkey Point site as the site that, on balance, provided the most favorable location for developing new nuclear generation to serve FPL's customers. The Site Selection

Study employed the principles of the Electric Power Research Institute (EPRI) siting guidelines and is modeled upon applicable NRC site suitability and National Environmental Policy Act (NEPA) criteria regarding the consideration of alternative sites. The study convened a group of industry and FPL subject matter experts to develop and assign weighting factors to a broad range of site selection criteria. Twenty-three candidate sites were then ranked using the siting criteria. This review allowed the list of candidates to be reduced until the best site emerged. Key factors contributing to the selection of Turkey Point include the existing transmission and transportation infrastructure to support new generation, the large size and seclusion of the site while being relatively close to the load center, and the long-standing record of safe and secure operation of nuclear generation at the site since the early 1970s.

i. Water Resources

Unique to the Turkey Point plant property is the self-contained cooling canal system that provides closed cooling to Turkey Point Units 1-4. The canal system consists of 36 interconnected canals. The cooling canals occupy an area approximately 2 miles wide by 5 miles long (5,900 acres), approximately four feet deep. The system performs the same function as a giant radiator. The water is circulated through the canals in a two-day journey, ending at the plant's intake pumps. These water resources will not be used by Turkey Point Units 6 & 7. The two new nuclear units currently propose to use reclaimed municipal wastewater as a primary cooling water source.

j. Geological Features of Site and Adjacent Areas

The Turkey Point Plant property lies upon the Floridian Plateau, a partly-submerged peninsula of the continental shelf. The peninsula is underlain by approximately 4,000 to 15,000 feet of sedimentary rocks consisting of limestone and associated formations that range in age from Paleozoic to Recent. Little is known about the basement complex of Paleozoic igneous and metamorphic rocks due to their great depth.

Generally in Miami-Dade County, the surficial aquifer (Biscayne Aquifer) consists of a wedge-shaped system of porous clastic and carbonate sedimentary materials, primarily limestone and sand deposits of the Miocene to late Quaternary age. The Biscayne Aquifer is thickest along the eastern coast and varies in thickness from 80 to 200 feet thick. The surficial aquifer is typically composed of Pamlico Sand, Miami Limestone (Oolite), the Fort Thompson and Anastasia Formations (lateral

equivalents), Caloosahatchee Marl, and the Tamiami formation. The lower confining layers below the surficial aquifer range in thickness from 350 to 600 feet and are composed of the Hawthorn Group. Beneath the Hawthorn Group, the Floridan Aquifer System ranges from 2,800 to 3,400 feet thick and consists of Suwannee Limestone, Avon Park Limestone, and the Oldsmar Formations.

k. Projected Water Quantities for Various Uses

The quantities of cooling water and potable water needed for Turkey Point Units 6 & 7 are still under development. At this time it is estimated that up to 90 million gallons per day (mgd) of reclaimed wastewater will be needed for make-up cooling water. In the event that reclaimed water is not available it is estimated at this time that up to 130 mgd of saltwater will be needed for make-up cooling water.

l. Water Supply Sources and Type

Potential water supply sources for Turkey Point Units 6 & 7 are still being analyzed. FPL has conducted an extensive water alternatives analysis to identify the universe of water alternatives for the project. Based on this analysis, FPL is investigating further the use of reclaimed water as the primary source of make-up cooling water for Turkey Points Units 6 & 7. Information regarding the water supply sources and type will be presented in future FPL Site Plans as this information becomes available.

m. Water Conservation Strategies

Turkey Point Units 6 & 7 is expected to use cooling towers, which significantly reduce the cooling water requirements. Reclaimed wastewater is being developed as the primary make-up cooling source. Using reclaimed wastewater allows for a secondary beneficial use of regional municipal wastewater that would otherwise be discharged to the ocean or injected into deep wells by the Miami Dade County Water and Sewer Department. Other water conservation strategies are still in development for Turkey Point Units 6 & 7. Information regarding these water conservation strategies will be presented in future FPL Site Plans as this information becomes available.

n. Water Discharges and Pollution Control

The water discharge strategy for the Turkey Point Units 6 & 7 is still under development, but use of an Underground Injection Control (UIC) system is being considered as the primary waste discharge alternative. Information regarding water discharge will be presented in future FPL Site Plans as this information becomes available.

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

The delivery, storage, waste disposal and pollution control requirements for Turkey Point Units 6 & 7 are all currently under development. Information regarding these matters will be presented in future FPL Site Plans as this information becomes available.

p. **Air Emissions and Control Systems**

The normal operation of Turkey Point Units 6 & 7 will not create fossil fuel-related air emissions. In addition, emissions from emergency generators associated with Units 6 & 7 are expected to be insignificant. The air emissions and control system are still under development. Information regarding the air emissions and control system will be presented in future FPL Site Plans as this information becomes available.

q. **Noise Emissions and Control Systems**

A field survey and impact assessment of noise expected to be caused by activities associated with the Turkey Point Units 6 & 7 are under evaluation. Predicted noise levels are not expected to result in adverse noise impacts in the vicinity of the Turkey Point Units 6 & 7.

r. **Status of Applications**

FPL is currently collecting data and developing permit applications. FPL expects to submit applicable local, state, and federal applications for the project during mid-to-late-2009. The Turkey Point Units 6 & 7 Unusual Use approval was issued by Miami Dade County in December 2007.

Preferred Site # 4: Cape Canaveral Plant, Brevard County

This site is located on the existing FPL Cape Canaveral Plant property in unincorporated Brevard County. The site is bound to the east by the Indian River Lagoon and on the west by a four lane highway (US. 1). The city of Port St. Johns is located less than a mile away. A rail line is located near the plant.

The existing 788 MW (summer) of generating capacity at FPL's Cape Canaveral site occupies a portion of the 43 acres that are wholly owned by FPL. The generating capacity is made up of steam units (Units 1 and 2).

The Cape Canaveral Plant site has been listed as a Potential Site in previous FPL Site Plans for both CC and simple cycle generation options. FPL is proposing to convert the existing Cape Canaveral Plant, to be renamed the Cape Canaveral Next Generation Clean Energy Center (CCEC), into a modern, highly efficient, lower-emission next-generation clean energy center using the latest CC technology. The existing two (2) steam units will first be dismantled and removed from the site and will be replaced by a single new CC unit.

a. Geological Survey (USGS) Map

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

b. Proposed Facilities Layout

A map of the general layout of the CCEC 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

The existing land uses on the site are primarily dedicated to electrical generation; i.e., FPL's existing Cape Canaveral power plant Units 1 & 2. The existing land uses that are adjacent to the site consist of single- and multi-family residences to the south and southwest, commercial property to the northwest, utility systems to the west, and a private medical/office facility to the north.

e. General Environment Features On and In the Site Vicinity

1. Natural Environment

The natural environment surrounding the site includes the Indian River Lagoon to the east and upland scrub, pine and hardwoods to the north and south. Vegetation with the approximately 45-acre offsite construction laydown and parking area (located west of U.S. Highway 1) consists of open land, upland scrub, pine, hardwoods along with exotic plant species.

2. **Listed Species**

No adverse impacts to federally or state-listed terrestrial plants and animals are expected in association with construction at the Site, due to the existing developed nature of the Site and lack of suitable onsite habitat for listed species. Federal- or state-listed terrestrial plants and animals inhabiting the offsite construction laydown and parking area are limited to the state-listed gopher tortoise and the state- and federally-listed scrub jay. The warm water discharges from the plant attract manatees, an endangered species. FPL is working closely with state and federal wildlife agencies to ensure protection of the manatees during the conversion process and upon operation of the modernized plant.

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

The construction and operation of a natural gas-fired CC generating facility at this location is consistent with the existing use at the site and is not expected to have any adverse impacts on parks, recreation areas, or environmentally sensitive lands.

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 convert the existing steam generating units (Units 1 & 2) with one new 1,219 MW (approximate) CC unit consisting of three new combustion turbines (CT), three new heat recovery steam generators (HRSG), and a new steam turbine. The new CC unit would be in-service in mid-2013. Natural gas delivered via pipeline is the primary fuel type for this unit with ultra-low sulfur light oil serving as a backup fuel.

g. Local Government Future Land Use Designations

Local government future land use designation for the site is "Public Utilities" and the area has been rezoned to GML-U.. Designations for the surrounding area are primarily "Community Commercial" and "Residential". The Indian River Lagoon is to the east of the site.

h. Site Selection Criteria Process

The Cape Canaveral plant has been selected as a preferred site for a site conversion 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. However, there are environmental benefits of converting the existing steam units including a significant reduction in system air emissions and improved aesthetics at the site.

i. Water Resources

Condenser cooling for the steam cycle portion of the converted plant and auxiliary cooling will come from the existing cooling water intake system. Process, potable, and irrigation water for the converted plant will come from the existing City of Cocoa's potable water supply.

j. Geological Features of Site and Adjacent Areas

FPL's Cape Canaveral Plant is located on the Atlantic Coastal Ridge and is at an approximate elevation of 12 feet above mean sea level (msl). The land consists primarily of fine to medium sand that parallels the coast. There is a lack of shell as it was deposited during a time of transgression. The base of the sedimentary rocks is made up of a thick, primarily carbonate sequence deposited during the Jurassic age through the Pleistocene age. Starting in the Miocene age and continuing through the Holocene age, siliciclastic sedimentation became more predominant. The basement rocks in this area consist of low-grade metamorphic and igneous intrusives, which occur several thousand feet below land surface and are Precambrian, Paleozoic, and Mesozoic in age.

k. Projected Water Quantities for Various Uses

The estimated quantity of water required for processing is approximately 0.281 million gallons per day (mgd) for uses such as process water and service water. Approximately 619 million gallons per day (mgd) of cooling water would be cycled through the once-through cooling water system. Potable water demand is expected to average .001 mgd.

l. Water Supply Sources by Type

The converted plant will continue to use the Indian River Lagoon water as the source of once-through cooling water. Such needs for cooling water will comply with the existing St. John's River Water Management District (SJRWMD) Consumptive Use Permit (CUP). Process, potable, and irrigation water for the converted plant will come from the existing City of Cocoa's potable water supply.

m. Water Conservation Strategies Under Consideration

No additional water sources will be required as a result of the conversion project.

n. Water Discharges and Pollution Control

The converted site will utilize portions of the existing once-through cooling water systems for heat dissipation. The heat recovery steam generator blowdown will be mixed with the cooling water flow before discharge. Reverse osmosis (R/O) reject will be mixed with the plant's once-through cooling water system. Stormwater runoff will be collected and routed to stormwater ponds. The facility will employ a Best Management Practices (BMP) plan and Spill Prevention, Control, and Countermeasure (SPCC) plan to prevent and control the inadvertent release of pollutants.

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

Natural gas for the converted unit will be transported to the site via a pipeline. New on-site gas compressors may be installed to raise the gas pressure of the existing pipeline for the converted unit. Ultra-low sulfur light fuel oil would be received by truck or barge from Port Canaveral and stored in an existing above-ground storage tank.

p. Air Emissions and Control Systems

The use of natural gas and ultra-low sulfur light fuel oil and combustion controls will minimize air emissions from the unit and ensure compliance with applicable emission limiting standards. Using these 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 operations when using ultra-low sulfur light fuel oil as backup fuel. These design alternatives are equivalent to the Best Available Control Technology for air emissions, and minimize such emissions while balancing economic, environmental, and energy impacts. Taken together, the design of the converted CCEC plant will incorporate features that will make it among the most efficient and cleanest power plants in the State of Florida.

q. **Noise Emissions and Control Systems**

Noise from the operation of the new unit will be within allowable levels.

r. **Status of Applications**

A Site Certification Application (SCA) under the Florida Electrical Power Plant Siting Act was filed in December 2008 and is currently under review. The FPSC voted to approve the need for the conversion project and the final order was issued in September 2008.

Preferred Site # 5: Riviera Plant, Palm Beach County

This site is located on the existing FPL Riviera Plant property primarily within Riviera Beach, Palm Beach County (with a small portion of the Site in West Palm Beach). The site is bound to the east by the Lake Worth Lagoon (Intracoastal Waterway) and on the west by a four lane highway (US. 1). The site has barge access via the Port of Palm Beach. A rail line is located near the plant.

The current site generating capacity is made up of two (2) operational 300 MW (approximate) steam generating units (Units 3 & 4). Units 1 & 2 have been retired and dismantled and are no longer on the plant site.

The Riviera Plant site has been listed as a Potential Site in previous FPL Site Plans for both CC and simple cycle generation options. FPL is proposing to convert the existing Riviera Plant, to be renamed the Riviera Beach Next Generation Clean Energy Center (RBEC), into a modern, highly efficient, lower-emission next-generation clean energy center using the latest CC technology. The existing two steam units will first be removed from the site and will be replaced by a single new CC unit.

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

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

b.

c. **Proposed Facilities Layout**

A general layout of the RBEC generating facilities 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

The existing Riviera Plant currently consists of two 300 MW (approximate) units with conventional dual-fuel fired steam boilers and steam turbine units. The plant site includes minimal vegetation and a landscape buffer area south of the power plant. Adjacent land uses include port facilities and associated industrial activities, as well as light commercial and residential development.

e. General Environment Features On and In the Site Vicinity

1. Natural Environment

The majority of the site is comprised of facilities related to electric power generation for the existing Riviera Plant. The site is located on the Intracoastal waterway which provides warm water refugia for manatees during cold winter days.

2. Listed Species

No adverse impacts to federally or state-listed terrestrial plants and animals are expected in association with construction at the Site, due to the existing developed nature of the Site and lack of suitable onsite habitat for listed species. The warm water discharges from the plant attract manatees, an endangered species. FPL is working closely with state and federal wildlife agencies to ensure protection of the manatees during the conversion process and upon operation of the new plant.

3. Natural Resources of Regional Significance Status

The construction and operation of a natural gas-fired CC generating facility at this location is consistent with the existing use at the site and is not expected to have any adverse impacts on parks, recreation areas, or environmentally sensitive lands.

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 convert the existing units (Units 3 & 4) to one new 1,207 MW (approximate) unit consisting of three new combustion turbines (CT), three new heat recovery steam generators (HRSG), and a new steam turbine. The new CC unit

would be in service in mid-2014. Natural gas delivered via pipeline is the primary fuel type for the unit with ultra-low sulfur light oil serving as a backup fuel.

g. Local Government Future Land Use Designations

Local government future land use designation for the site is "Utility". The Port of Palm Beach is to the north of the site. Designation to the west of the site is "Commercial". To the south of the site is "Residential" and is in the City of West Palm Beach.

h. Site Selection Criteria Process

The Riviera plant has been selected as a Preferred Site 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. However, there are environmental benefits of converting the existing steam units including a significant reduction in system air emissions and improved aesthetics at the site.

i. Water Resources

Water from the Lake Worth Lagoon (Intracoastal waterway) is currently used for once-through cooling water. The converted plant will utilize portions of the existing once through cooling water intake and discharge structures. Water for cooling pump seals and irrigation will come from three onsite surficial aquifer wells. Process and potable water for the converted plant will come from the existing City of Riviera Beach potable water supply.

j. Geological Features of Site and Adjacent Areas

FPL's Riviera Plant site is underlain by the surficial aquifer system. The Surficial aquifer system in eastern Palm Beach County is primarily composed of sand, sandstone, shell, silt, calcareous clay (marl), and limestone deposited during the Pleistocene and Pliocene Epochs. The sediments forming the aquifer system are the Pamlico Sand, Fort Thompson Formation (Pleistocene) and the Caloosahatchee Marl (Pleistocene and Pliocene). Permeable sediments in the upper part of the Tamiami Formation (Pliocene) are also part of the aquifer system. The sediments in the eastern portion of the county are appreciably more permeable than in the west due to better sorting and less silt and clay content.

The surficial aquifer is underlain by at least 600 feet the Hawthorn formation (confining unit). The Floridan Aquifer System underlies the Hawthorn formation.

k. Projected Water Quantities for Various Uses

The estimated quantity of water required for processing is approximately 0.232 mgd for uses such as process water and service water. Approximately 600 million gallons per day (mgd) of cooling water would be cycled through the once-through cooling water system. Potable water demand is expected to average .001 mgd.

l. Water Supply Sources by Type

The converted plant will continue to use the Lake Worth Lagoon water as the source of once-through cooling water. Water for cooling pump seals and irrigation will come from on-site surficial aquifer wells currently permitted by SFWMD. Process and potable water for the converted plant will come from the existing City of Riviera Beach's potable water supply.

m. Water Conservation Strategies Under Consideration

No additional water sources will be required as a result of the conversion project.

n. Water Discharges and Pollution Control

The converted plant will utilize portions of the existing once-through cooling water system for heat dissipation. The heat recovery steam generator blowdown will be mixed with the cooling water flow before discharge. Reverse osmosis (R/O) reject will be mixed with the plant's once-through cooling water system prior to discharge. Stormwater runoff will be collected and routed to stormwater ponds. The facility will employ a Best Management Practices (BMP) plan and Spill Prevention, Control, and Countermeasure (SPCC) plan to prevent and control the inadvertent release of pollutants.

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

Natural gas for the converted unit will be transported to the site via a pipeline. New on-site gas compressors may be installed to raise the gas pressure of the existing pipeline to the appropriate level for the converted unit. Ultra-low sulfur light fuel oil would be received by truck, pipeline or barge from the Port of Palm Beach and stored in a new above-ground storage tank.

p. Air Emissions and Control Systems

The use of natural gas and ultra-low sulfur light fuel oil and combustion controls will minimize air emissions from the unit and ensure compliance with applicable emission limiting standards. Using these 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 operations when using ultra-low sulfur light fuel oil as backup fuel. These design alternatives are equivalent to the Best Available Control Technology for air emissions, and minimize such emissions while balancing economic, environmental, and energy impacts. Taken together, the design of RBEC will incorporate features that will make it among 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 below current noise levels for the residents nearest the site.

r. Status of Applications

A Site Certification Application (SCA) under the Florida Electrical Power Plant Siting Act was filed in February 2009 and is currently under review. The FPSC voted to approve the need for the conversion project and the final order was issued in September 2008.

Preferred Site # 6: DeSoto Next Generation Solar Energy Center, DeSoto County

The DeSoto site is located approximately 0.3 miles east of US 17 and immediately north of Bobay Road in Arcadia, Florida. The site is located in Section 27, Township 36 South, Range 25 East. FPL owns an approximately 13,000 acre parcel in DeSoto County. FPL has designated approximately 1,523 acres for development of a photovoltaic (PV) facility. The land surrounding the site is owned by FPL and acts as a buffer zone.

The DeSoto site has been selected as a Preferred Site for the addition of a 25 MW PV generation facility. The DeSoto Next Generation Solar Energy Center is expected to be in operation by the end of 2009.

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

A USGS map of the DeSoto Next Generation Solar Energy Center plant site is found at the end of this chapter.

b. Proposed Facilities Layout

A map of the general layout of the DeSoto Next Generation Solar Energy Center generating facility 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

This property is owned by FPL. The site was inactive until November 2008 when construction of the DeSoto Next Generation Solar Energy Center was initiated. The site was previously dedicated to agricultural use. An approximately 400 acre portion of the site has been cleared and re-graded to accommodate the PV project. Prior to initiation of construction, no structures were present on the site and the majority of the vegetation was sod. Structures are now being built on the site for work associated with DeSoto Next Generation Solar Energy Center.

e. General Environment Features On and In the Site Vicinity

1. Natural Environment

The site has been altered by construction. The surrounding land use is predominantly agriculture. FPL was able to design the PV facility to avoid impacts to most of the natural wetlands.

2. Listed Species

Prior to construction and operation of the new facility one listed species was observed at the site, the gopher tortoise. Gopher tortoises are classified as threatened by the Florida Fish and Wildlife Conservation Commission, but are not listed federally by the U.S. Fish and Wildlife Service. Gopher tortoise burrows were observed in the palmetto prairie and woodland pasture. Other listed species are known to utilize gopher tortoise burrows (commensal species), including the Eastern indigo snake (*Drymarchon corais couperi*; federally and state

threatened), gopher frog (*Rana capito*; state species of special concern), and Florida mouse (*Podomys floridanus*; state species of special concern). A permit was obtained to relocate the gopher tortoises and any commensal species. Construction and operation at the site is not expected to affect any rare, endangered, or threatened species.

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

   The construction and operation of the PV generating facility at this location is not expected to have any adverse impacts on parks or recreation areas. Construction will result in minimal wetland impacts under federal, state, or local agency permitting criteria.

4. **Other Significant Features**

   FPL conducted an archeological and historical survey and no artifacts were discovered. FPL is not aware of any other significant features of the site.

f. Design Features and Mitigation Options

The design consists of 25 MW of PV technology. This site is also suitable for possible expansion of PV beyond the 25 MW facility. No mitigating options are deemed necessary at the site.

g. Local Government future Land Use Designations

The local government future land use designation for the 25 MW project site is Agriculture on the DeSoto County Future Land Use Map.

h. Site Selection Criteria Process

The site has been selected as a Preferred Site for the installation of a PV technology due to consideration of various factors including prior FPL ownership of the land and its suitability for a PV facility of this magnitude.

i. Water Resource

No water will be required for use at the solar facility except the small amount that may be needed to occasionally clean the solar panels in the absence of sufficient rainfall. Should this minimal water be required, it will be trucked to the site as needed.

j. Geological Features of the Site and Adjacent Areas

The dominant soil types within the site are Myakka, Smyrna, Immokalee, EauGallie, Basinger, and Valkaria fine sands. Basinger fine sand, depressional; and Anclote muckyfine sand, depressional. All the dominant soil types are considered poorly to very poorly drained.

k. Projected Water Quantities for Various Uses

The projected water use for the solar facility is expected to be minimal with water being used occasionally only to clean the PV panels.

l. Water Supply Sources and Type

The PV facility will use a small amount of water to occasionally clean the PV panels. This water will come from groundwater. FPL will obtain a consumptive use permit once the facility goes into operation.

m. Water Conservation Strategies

This PV facility does not require water use for daily operations.

n. Water Discharges and Pollution Control

There will not be any water discharges or pollution as a result of this facility operation.

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

The facility will use the sun for fuel. Therefore there will not be any fuel delivery, storage, waste, or pollution at the site.

p. Air Emissions and Control Systems

No air emissions will be emitted from this facility.

q. Noise Emissions and Control Systems

Noise expected during construction is expected to be below noise level allowed by DeSoto County. No noise will be emitted from this facility during operation.

r. Status of Applications

FPL obtained an Environmental Resource Permit (ERP) from the FDEP in October 2008. FPL received an Army Corps of Engineers permit in October 2008.

Preferred Site #7: Space Coast Next Generation Solar Energy Center, Brevard County

The Space Coast site (Site) is located at Section 13, Township 23 South, and Range 36 East, North of North Courtenay Parkway. FPL is leasing approximately 60 acres from Kennedy Space Center in Brevard County. This Space Coast site has been selected as a Preferred Site for the addition of a 10 MW PV generation facility. The Space Coast Next Generation Solar Energy Center is expected to be in operation by the end of 2010.

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

A USGS map of the Space Coast Next Generation Solar Energy Center plant site is found at the end of this chapter.

b. Proposed Facilities Layout

A map of the general layout of the Space Coast Next Generation Solar Energy Center generating facility 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

The site is inactive. The Site was previously dedicated to agricultural use as citrus groves. There are no structures on the site and the majority of the vegetation is citrus grove.

e. General Environment Features On and In the Site Vicinity

1. Natural Environment

The surrounding land use is predominantly agriculture. FPL was able to design the PV facility to avoid most of the impacts to natural wetlands.

2. Listed Species

Wildlife resources at the Site were evaluated in February 2008 through pedestrian surveys. There were no listed species observed.

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

The construction and operation of a PV generating facility at this location is not expected to have any adverse impacts on parks or recreation areas. Construction will result in minimal wetland impacts under federal, state, or local agency permitting criteria.

4. **Other Significant Features**

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

f. Design Features and Mitigation Options

The design consists of 10 MW of PV technology. No mitigating options are deemed necessary at the site.

g. Local Government future Land Use Designations

Future land use designation for the site is Spaceport Management as designated by the Brevard County Future Land Use Map.

h. Site Selection Criteria Process

The site has been selected as a Preferred Site for the installation of a PV technology due to consideration of various factors including its suitability for a PV facility of this magnitude and the cooperation of the Kennedy Space Center.

i. Water Resource

No water will be required at the PV facility except the small amount that may be needed to occasionally clean the solar panels in the absence of sufficant rainfall. Any such water would be brought to the site by truck.

j. Geological Features of the Site and Adjacent Areas

The surface and near-surface deposits of east-central Florida range from surficial unconsolidated sands to well indurated limestones and dolomites at depth. In ascending order the four main geologic units present in east-central Florida are: (i) Eocene limestones; (ii) Lower and Middle Miocene compact silt and clays; (iii) Upper Miocene and Pliocene silty and clayey sands; and (iv) Pleistocene and Recent age sands with interbedded shell layers.

k. Projected Water Quantities for Various Uses

The projected water use for the PV facility is expected to be minimal with water being used occasionally only to clean the PV panels.

l. Water Supply Sources and Type

At this time, it is expected that natural rainfall will be sufficient to keep the solar panels clean. In the event that additional water is required, a small amount of water may be occasionally trucked in to clean the PV panels.

m. Water Conservation Strategies

FPL constructed this PV facility knowing it would not use water for operation and would only need a minimal amount for cleaning the PV panels.

n. Water Discharges and Pollution Control

There will not be any water discharges or pollution as a result of this facility

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

The facility will use the sun for fuel. Therefore there will not be any fuel delivery, storage, waste, or pollution at this site.

p. Air Emissions and Control Systems

No air emissions will be emitted from this facility.

q. Noise Emissions and Control Systems

Noise expected during construction is expected to be below noise levels allowed by Brevard County. No noise will be emitted from this facility during operation.

r. Status of Applications

FPL applied for an Environmental Resource Permit (ERP) from the St. Johns Water Management District and a U.S. Army Corps of Engineers permit in July 2008.

Preferred Site #8: Martin Next Generation Solar Energy Center, Martin County

The Martin Next Generation Solar Energy Center (MSEC) will be located on the existing FPL Martin Plant site in unincorporated Martin County, Florida. The Martin Plant site is located in southwestern Martin County about 40 miles northwest of West Palm Beach and

about 1.3 miles east of Lake Okeechobee (Figure 2.1-1). The Martin Plant site is bounded by State Road (SR) 710 and a CSX Railroad line (east and north), a Florida East Coast Railway line and SFWMD L-65 Canal (west), and the St. Lucie Waterway (south).The MSEC Project will be constructed in an approximately 600-acre area (Project Area) within FPL's existing 11,300-acre Martin Plant site. The land surrounding the site is owned by FPL and acts as a buffer zone.

The site has been selected as a Preferred Site for the addition of approximately 75 MW of solar thermal generation. The facility will produce steam that will replace steam that would otherwise have been produced by burning natural gas in one of the existing CC units at the site, Martin Unit 8. The Martin Next Generation Solar Energy Center is expected to be in operation by the end of 2010.

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

A USGS map of the Martin Next Generation Solar Energy Center plant site is found at the end of this chapter.

b. Proposed Facilities Layout

A map of the general layout of the Martin Next Generation Solar Energy Center generating facility 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

Total site acreage for the existing Martin Plant site is approximately 11,300 acres, which represents land owned by FPL. The Martin Plant site consists of a 6,800-acre cooling pond (6,500 acres of water surface and 300 acres of embankment) and approximately 400 acres for existing Units 1 through 4, Unit 8, and associated facilities. Units 1 & 2 are nominal 800-MW steam electric generating units that use natural gas and low-sulfur residual oil. Units 3 & 4 are nominal 500-MW natural gas-fired CC units. Unit 8 is a natural gas fired 4-on-1 CC unit with a nominal capacity of 1,100 MW that began operation in 2005. Light oil is used as backup in Unit 8. The other onsite facilities include water and wastewater treatment facilities, residual and light fuel oil storage, switchyards and transmission lines, offices, warehouses, maintenance buildings, and other miscellaneous uses.

Adjacent areas include agricultural uses such as croplands, pastures, and groves account for much of the land use and cover within 5 miles of the Martin Plant site. Three types of wetlands, forested freshwater, non-forested freshwater, and mixed forested and forested freshwater also account for a great deal of nearby land use.

e. General Environment Features On and In the Site Vicinity

1. Natural Environment

The portions of the Martin Plant site that will be affected by the construction of the MSEC are about 550 acres that will be utilized for solar arrays and construction facilities. The solar arrays will be located east of the existing Unit 8. Activities associated with construction will occupy about 100 acres. This will include construction laydown, parking, and trailers. These areas will be cleared of any vegetation. The area for the heat exchangers will be near Unit 8 and this area has been previously impacted by the construction of Units 3, 4, and 8.

2. Listed Species

Threatened and endangered species within the Project Area are limited to avian species and gopher tortoise. No listed species of plants were identified within the MSEC Project Area. Due to the presence of large areas of similar habitat both within the Northwest Mitigation Area and areas north of the existing transmission line ROW adjacent to the Project Area, and the highly mobile nature of protected avian species, no significant adverse impacts to federally or state listed animals are expected. Creation of wood stork foraging ponds and sandhill crane habitat within the Northwest Mitigation Area provides suitable habitat to offset the loss of shallow hydroperiod wetlands within the Project Area.

Gopher tortoises are classified as threatened by the FFWCC, but are not listed federally by the USFWS. Gopher tortoise burrows were observed in the palmetto prairie and woodland pasture. Other listed species are known to utilize gopher tortoise burrows (commensal species), including the Eastern indigo snake (*Drymarchon corais couperi*; federally and state threatened), gopher frog (*Rana capito*; state species of special concern), and Florida mouse (*Podomys floridanus*; state species of special concern). A permit was obtained to relocate the gopher tortoises and any commensal species. Construction and operation at the Site is not expected to affect any rare, endangered, or threatened species

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

The construction and operation of a solar thermal facility at this location is not expected to have any adverse impacts on parks or recreation areas. Construction will result in minimal wetland impacts under federal, state, or local agency permitting criteria.

4. **Other Significant Features**

The Florida Department of State, Division of Historical Resources, has determined that no significant archaeological or historical sites are recorded or are likely to be present within the Project Area. As a result no construction impacts on historic properties listed or eligible for listing in the National Register of Historic Places, or otherwise of historical or archaeological value, are anticipated.

f. Design Features and Mitigation Options

The design consists of approximately 75 MW of solar thermal technology. FPL has already undertaken an extensive wetland mitigation program on a 1,130-acre parcel northwest of the existing Martin Plant generating units. That mitigation program was deemed successful by the SFWMD in 2001. All wetland impacts associated with the MSEC have been fully mitigated through this now-successful wetland and upland mitigation effort.

g. Local Government future Land Use Designations

The Martin Plant site that includes Units 1 & 2 was developed prior to the county's adoption of a future land use map. In 1982, at the time of the original land use plan map adoption, the portion of the Martin Plant site surrounding the existing units was designated Industrial. The Electric Utility Element of the Comprehensive Plan acknowledged FPL's plans to construct two coal gasification plants at the Martin Plant site and encouraged the facilities to be developed under the industrial planned unit development [PUD(i)] zoning designation. In September 1988, FPL requested a comprehensive plan land use amendment to industrial for the licensing of the Martin CG/CC Project Area and a rezoning of that area to PUD(i). In August 1989, the Martin County Board of County Commissioners (BOCC) approved the comprehensive plan amendment and the rezoning request. In June 2008, with the BOCC approval of the rezoning, a PUD Zoning Agreement was executed between Martin County and FPL in which development standards and special conditions were addressed. Most of the special conditions were addressed during earlier phases of

developing the Martin Plant site. An amendment of the PUD Zoning Agreement was requested by FPL to allow renewable energy facilities to be located within the PUD area. Subsequent to the certification of the CG/CC Project, which includes the area of the MSEC, Martin County has amended its future land use element and map to designate 7,300 acres in the Martin Plant site as Public Utilities – Major Public Power Generation Facilities.

h. Site Selection Criteria Process

The site has been selected as a Preferred Site due to consideration of various factors including available land area and proximity to an existing generating unit (Martin Unit 8) to which the steam generated by the solar thermal facility could be fed.

i. Water Resource

There will be no water used at the solar thermal facility except the small amount needed to occasionally clean the solar mirrors. The additional water needed for mirror cleaning is already within the previously approved allocation of water for the Martin Plant site.

j. Geological Features of the Site and Adjacent Areas

Borings drilled in the area just east of the existing Unit 8 show that the predominant soil type is sand from the ground surface [approximately 30 feet above mean sea level (ft-msl)] to –70 ft-msl (negative number denotes feet below sea level). The sands vary in color from light to dark gray and brown. Clayey sand and sandy clay seams from a few inches to several feet in thickness are generally found at 10 ft-msl. A thin layer of greenish-gray sandy clay was found in the borings at approximately –25 ft-msl. The Pamlico and Anastasia Formations extend from the ground surface (20 to 30 ft-msl) to an average of –3 ft-msl. These strata consist of fine sands and silty sands with shell fragments. Thin beds of limestone and cemented sand occur sporadically at depths ranging from 2 to 4.5 ft-msl in localized areas; this zone may represent the boundary between the Pamlico and Anastasia Formations. In areas where the cemented sands and limestone are absent, it is not possible to differentiate the two formations.

The underlying Caloosahatchee Group extends to an average –80 ft-msl. This formation can be subdivided into two units, namely an upper limestone interbedded with sand and shell present to an average –12 ft-msl, and a lower unit of silty sand with shell fragments and shell beds to –80 ft-msl. The Tamiami Formation underlies

the Caloosahatchee from –105 ft-msl to –150 ft-msl. This formation consists of silty sand varying with depth to clayey sand from –72 ft-msl. The color of the formation also varies from gray in the sands to predominantly green in the clayey zone.

The top of the Hawthorn Group occurs at approximately –105 ft-msl to –150 ft-msl. These elevations are based on the logs of test wells and exploratory borings drilled in the area. The Hawthorn, approximately 550 ft thick, consists predominantly of greenish clay with subordinate amounts of shell, limestone, silt, and sand. Major limestone zones generally occur near the base of the formation. Due to very low vertical permeability, the Hawthorn acts as a confining bed overlying the Floridan Aquifer.

k. Projected Water Quantities for Various Uses

Washing mirrors requires about 50 gallons per 120 mirrors (i.e., a 50 meter section). Based on the amount of mirrors for the MSEC, about 75,000 gallons per washing will be required. This amount of water is estimated to be no more than about 2 million gallons per year for cleaning mirrors.

l. Water Supply Sources and Type

The plant water use for MSEC can be accommodated by the current authorization for water in the Conditions of Certification (PA89-27L). The amount of water required by the MSEC is estimated to not exceed about 2 million gallons per year for cleaning mirrors, or an annual average of about 5 gallons per minute (gpm). The usage will be intermittent, with maximum usage of about 75,000 gallons every 1 or 2 weeks during periods without rain and depending upon the reflectivity of the mirrors. The source of water for the MSEC is the existing demineralized water system.

m. Water Conservation Strategies

FPL plans to construct this solar thermal facility knowing it will use very little water for operation.

n. Water Discharges and Pollution Control

There will not be any water discharges or pollution as a result of this facility.

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

The facility will use the sun for fuel. Therefore, there will not be any fuel delivery, storage, waste, or pollution at the site from the operation of the solar thermal facility.

p. Air Emissions and Control Systems

There will be no SO_2, NO_x, or CO_2 emissions from the solar thermal facility and its operation will result in reductions of FPL system emissions for all three types of emissions.

There will be minor amounts of volatile organic compounds (VOCs) released from the expansion tanks as a result of decomposition products of heat transfer fluids (HTF). Based on reported values from FPL Energy SEGS facilities in California, the VOC emissions from the MSEC will be about 0.8 tons per year (TPY). This amount would classify these emissions as insignificant activities and the amount is well below the threshold requiring permitting under FDEP rules in 62-210.300, F.A.C. A generic exemption is that emissions of any regulated pollutant be less than 5 TPY. The 5 TPY applies to the "potential-to-emit" for the emission unit, which would be 8,760 hours/year unless restricted as an enforceable permit condition in a permit. The exemption covers the requirement to obtain construction permits required pursuant to Rule 62-210.300(1), F.A.C.

q. Noise Emissions and Control Systems

Noise during construction is expected to be below noise level allowed by Martin County. There will not be any noise from the solar thermal facility during operation.

r. Status of Applications

FPL submitted an application for a Site Certification Modification for the Martin Next Generation Solar Energy Center to the FDEP in May 2008. FPL received the site certification modification approval in August 2008.

IV.F.2 Potential Sites for Generating Options

Four sites are currently identified as Potential Sites for near-term future generation additions to meet FPL's capacity and energy needs.[3]

[3] 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 and other greenfield sites. Greenfield sites that FPL currently does not own, or for which FPL has not currently secured the necessary rights to, are not specifically identified as Potential Sites in order to protect the economic interests of FPL and its customers.

. 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 offer a range of considerations relative to engineering and/or costs associated with the construction and operation of feasible technologies. In addition, each Potential Site has different characteristics that will require further definition and attention. Solely for the purpose of estimating water requirements for each site, it was assumed that either one dual-fuel (natural gas and light oil) simple cycle combustion turbine (CT) or a natural gas-fired CC unit would be constructed at the Potential Sites unless otherwise noted. A simple cycle CT would require approximately 50 gallons per minute (gpm) for both process and cooling water (assuming air cooling). A CC unit would require approximately 150 gpm for service and process water and approximately 14 million gallons per day (mgd) for cooling water depending upon the water source and associated water quality. If an existing power plant site is ultimately selected for converting an existing unit(s), the water requirements discussed above for a CC unit would be approximately correct for the converted unit. If a renewable energy generating technology, such as photovoltaic or solar thermal, is ultimately selected for one of these sites, the water requirements would be less than those for CT or CC facilities.

Permits are presently considered to be obtainable for each of these sites. No significant environmental constraints are currently known for any of these sites. The Potential Sites briefly discussed below are presented in alphabetical order. At this time FPL considers each site to be equally viable.

Potential Site # 1: West Broward, Broward County

FPL has identified the Andytown Substation property in western unincorporated Broward County as a potential site for the addition of new generating capacity and FPL refers to this potential site as the West Broward site. 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 site has been included at the end of this chapter.

b. Land Uses

The land uses for the site were designated as agricultural use.

c. Environmental Features

Extensive low-quality wetlands are present on the site. Construction and operation of a new facility on this site would not be expected to adversely affect any rare, endangered, or threatened species.

d. Water Quantities

As previously discussed, needed water quantities would be up to 150 gallons per minute (gpm) for both process and cooling water (assuming air cooling) and up to 14 million gallons per day (mgd) for cooling water.

e. Supply Sources

Groundwater from the shallow aquifer or a local source of reclaimed (reuse) water has been identified as potential water sources. The Floridan Aquifer has also been identified as a potential cooling water source.

Potential Site # 2: Fort Myers Plant, Lee County

FPL's existing 460-acre Fort Myers property is located just east of Interstate 75 in Lee County and is adjacent to the Caloosahatchee River. The existing facilities on the site include one 1,440 MW (approximate) CC unit, 12 gas turbines, each with an approximate capacity of 54 MW, and two combustion turbines, each with an approximate capacity of 160 MW.

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

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

b. Land Uses

The land on the site is currently dedicated to industrial use with surrounding grassy and landscaped areas. Much of the site has been used in recent years for direct plant construction activities. The adjacent land uses include light commercial and retail to the east of the property, plus some residential areas located toward the west.

c. Environmental Features

Mixed scrub with some hardwoods can be found to the east and further south.

d. Water Quantities

As previously discussed, needed water quantities would be up to 150 gallons per minute (gpm) for both process and cooling water (assuming air cooling) and up to 14 million gallons per day (mgd) for cooling water.

e. Supply Sources

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

Potential Site # 3: Lauderdale Plant, Broward County

The Lauderdale site is located in Eastern Broward County approximately 5 miles inland from Dania Beach and less than 2 miles west of Ft. Lauderdale International Airport. The site is bounded on the south by Dania Cutoff Canal, on the east by S.W. 30th Avenue, and on the North by I-595.

The existing approximately 1,700 MW of generating capacity at FPL's Lauderdale site occupies a portion of the approximately 210 acres that are wholly owned by FPL. The generating capacity is made up of two CC units (Units 4 & 5), and 24 simple cycle gas turbine (GT) units.

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

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

b. Land Uses

The existing power plant facilities are located on approximately 130 acres. The existing site has been in use since the 1920s and is adjacent to a county resource recovery project.

c. Environmental Features

To the north of the power plant is an area of mixed uplands with a scattering of small wetlands.

d. Water Quantities

As previously discussed, needed water quantities would be up to 150 gallons per minute (gpm) for both process and cooling water (assuming air cooling) and up to 14 million gallons per day (mgd) for cooling water.

e. Supply Sources

Existing groundwater or the municipal water supply are potential water sources.

Potential Site # 4: Manatee Plant, Manatee County

The site for the Project is the existing FPL Manatee Plant 9,500-acre site, located in unincorporated north-central Manatee County. The existing power generating facilities are located in all or portions of Sections 18 and 19 of Township 33S, Range 20-E. The plant site lies approximately 5 miles east of Parrish, Florida. It is approximately 5 miles east of U.S. 301 and 9.5 miles east of Interstate Highway 75 (I-75). The existing plant is approximately 2.5 miles south of the Hillsborough-Manatee County line; a portion of the north property boundary of the plant site abuts the county line. State Road 62 (SR 62) is about 0.7 mile south of the plant, with the plant entrance road going north from that highway. This site is a possibility for an FPL solar thermal facility.

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

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

b. Land Uses

Existing Land use on the site is agricultural. FPL is attempting to rezone the property to PD-PI which will allow for electrical generation.

c. Environmental Features

There are no significant environmental features on the site.

d. Water Quantities

Minimal amounts of water would be required for a solar thermal facility.

e. Supply Sources

The existing water supply could be used for the water required to clean the mirrors for a solar thermal facility.

Environmental and Land Use Information: Supplemental Information

Preferred Site#1: West County Energy Center

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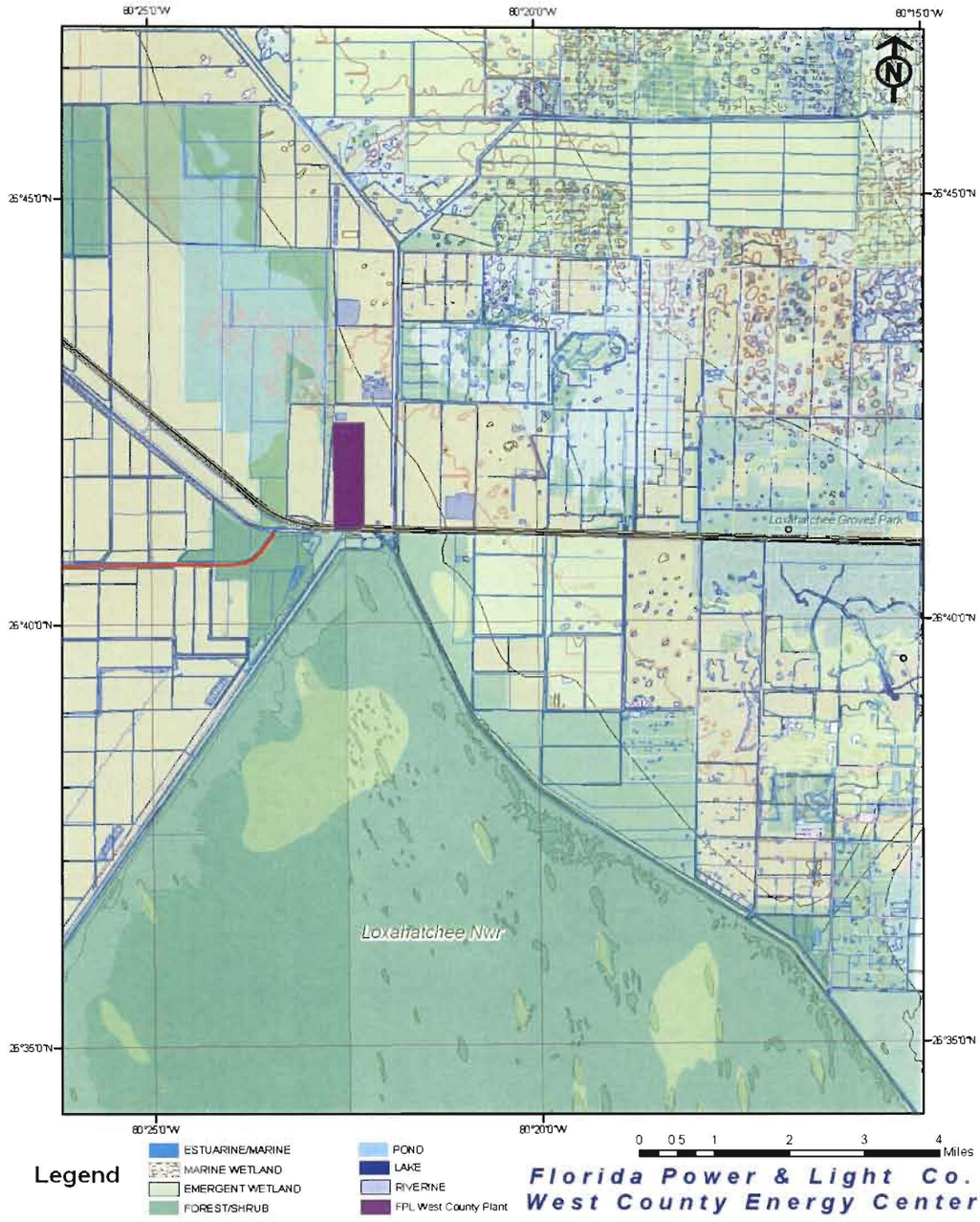
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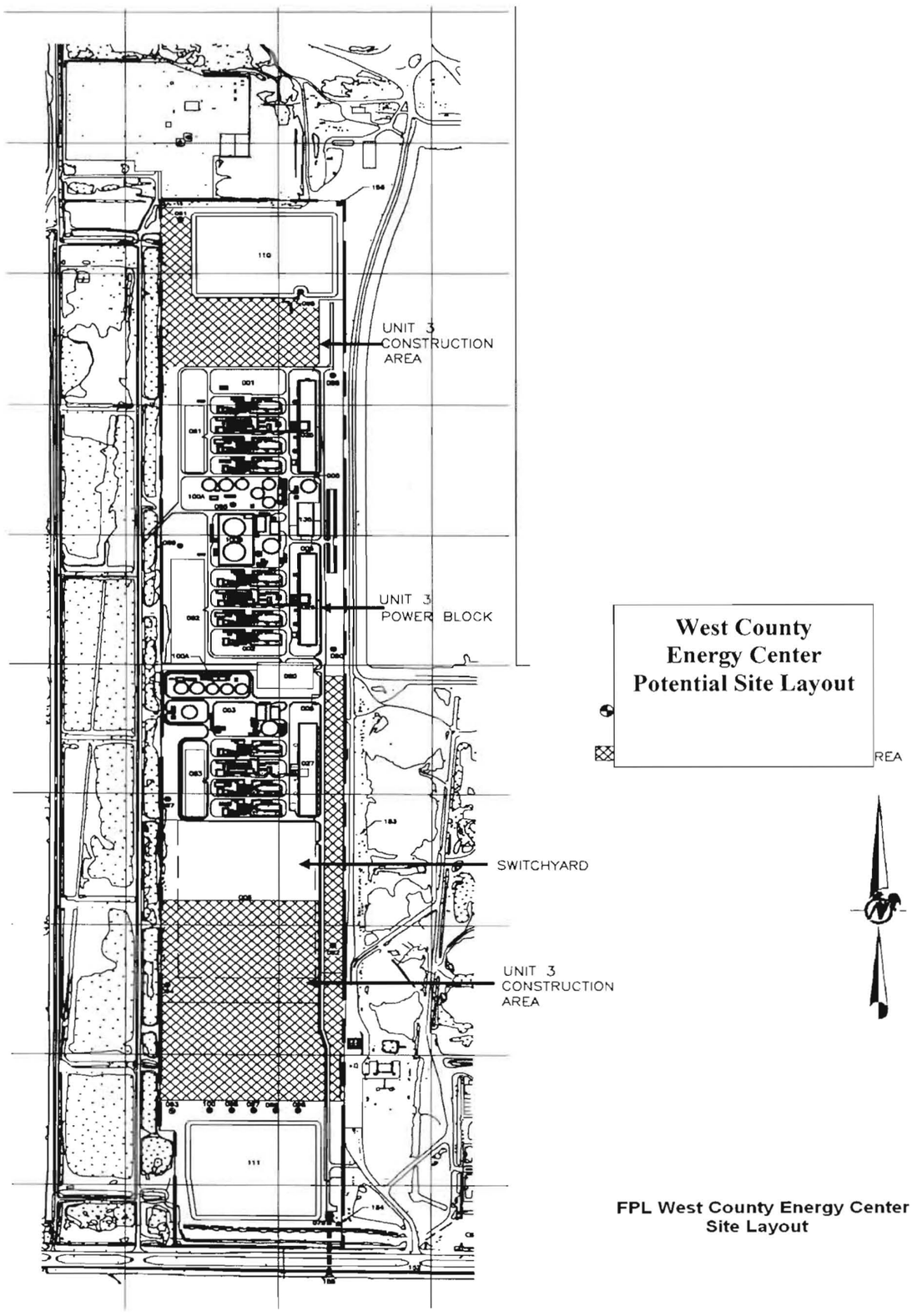
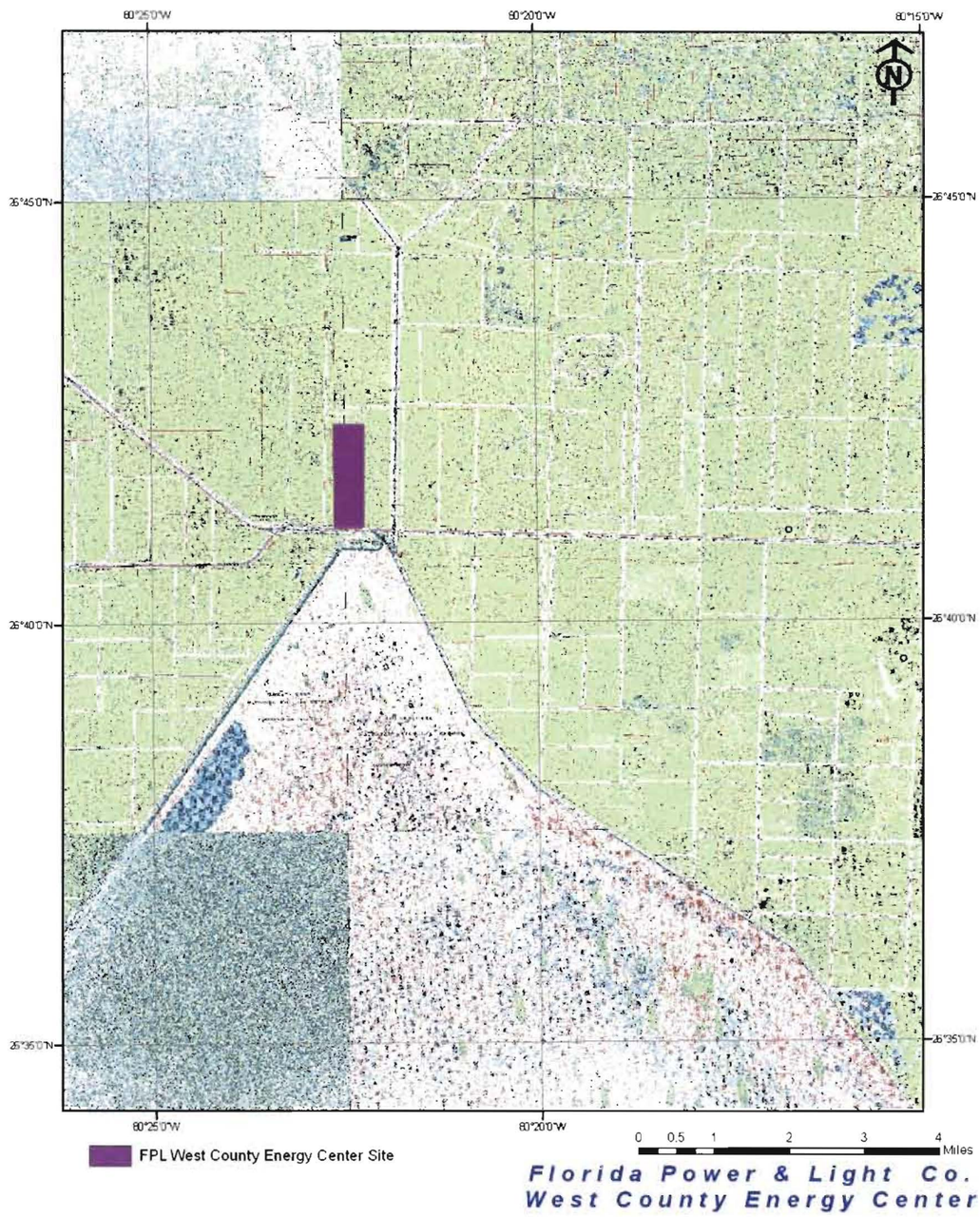


FPL West County Energy Center
Site Layout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Miles
Florida Power & Light Co.
West County Energy Center

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Environmental and Land Use Information: Supplemental Information

Preferred Site #2: St. Lucie Plant

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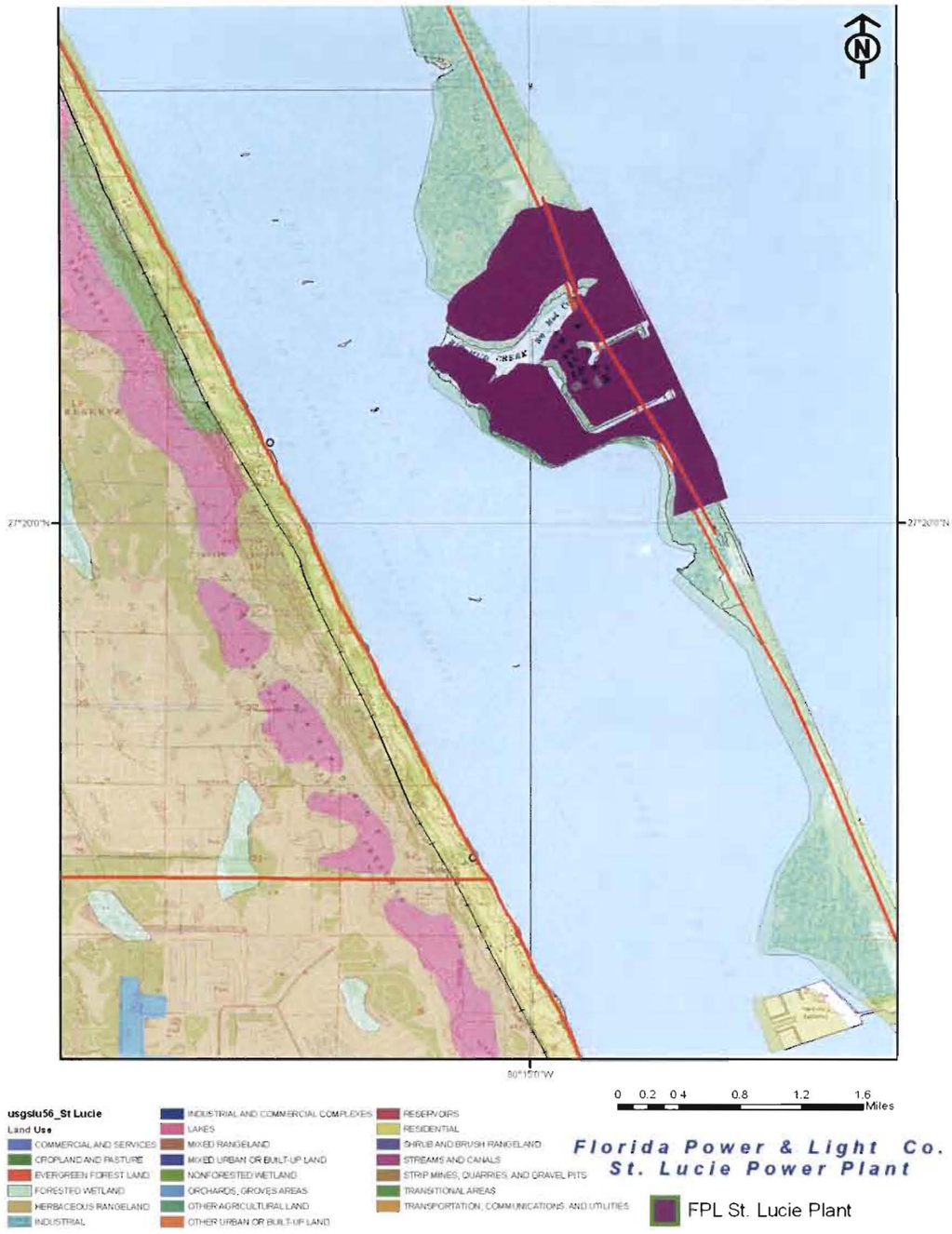
Florida Power & Light Co.

St. Lucie Power Plant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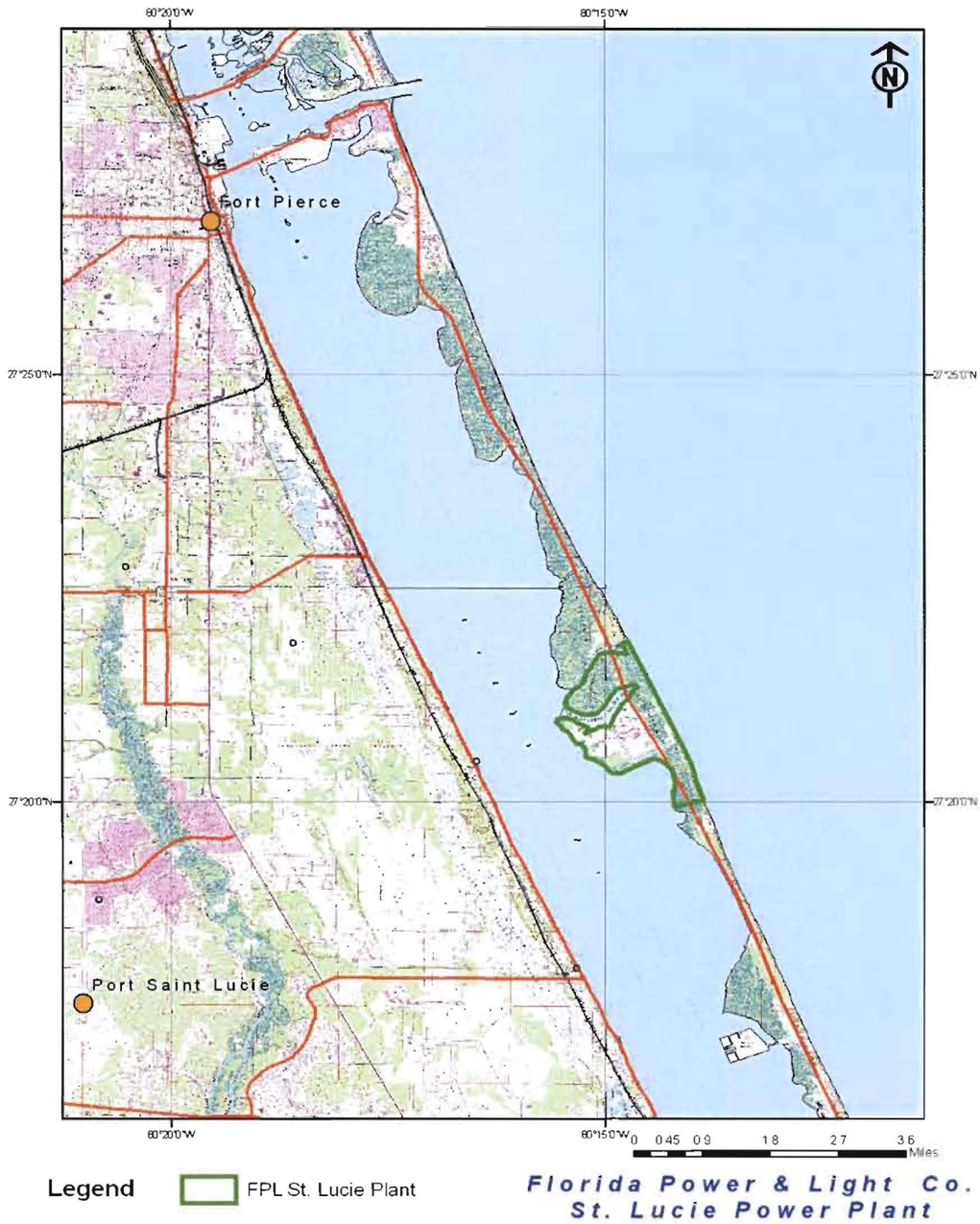
COMMERCIAL AND SERVICES
CROPLAND AND PASTURE
EVERGREEN FOREST LAND
FORESTED WETLAND
HERBACEOUS RANGELAND
INDUSTRIAL
INDUSTRIAL AND COMMERCIAL COMPLEXES
LAKES
MIXED RANGELAND
MIXED URBAN OR BUILT-UP LAND
NONFORESTED WETLAND
ORCHARDS, GROVES AREAS
OTHER AGRICULTURAL LAND
OTHER URBAN OR BUILT-UP LAND
RESERVOIRS
RESIDENTIAL
SHRUB AND BRUSH RANGELAND
STREAMS AND CANALS
STRIP MINES, QUARRIES, AND GRAVEL PITS
TRANSITIONAL AREAS
TRANSPORTATION, COMMUNICATIONS, AND UTILITIES
Florida Power & Light Co.
St. Lucie Power Plant
FPL St. Lucie Plant


80°20'0"W
80°15'0"W
27°25'0"N
27°20'0"N
Fort Pierce
Port Saint Lucie
N
0 0.45 0.9 1.8 2.7 3.6
Miles
Legend
FPL St. Lucie Plant
Florida Power & Light Co.
St. Lucie Power Plant

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Environmental and Land Use Information: Supplemental Information

Preferred Site #3: Turkey Point Plant

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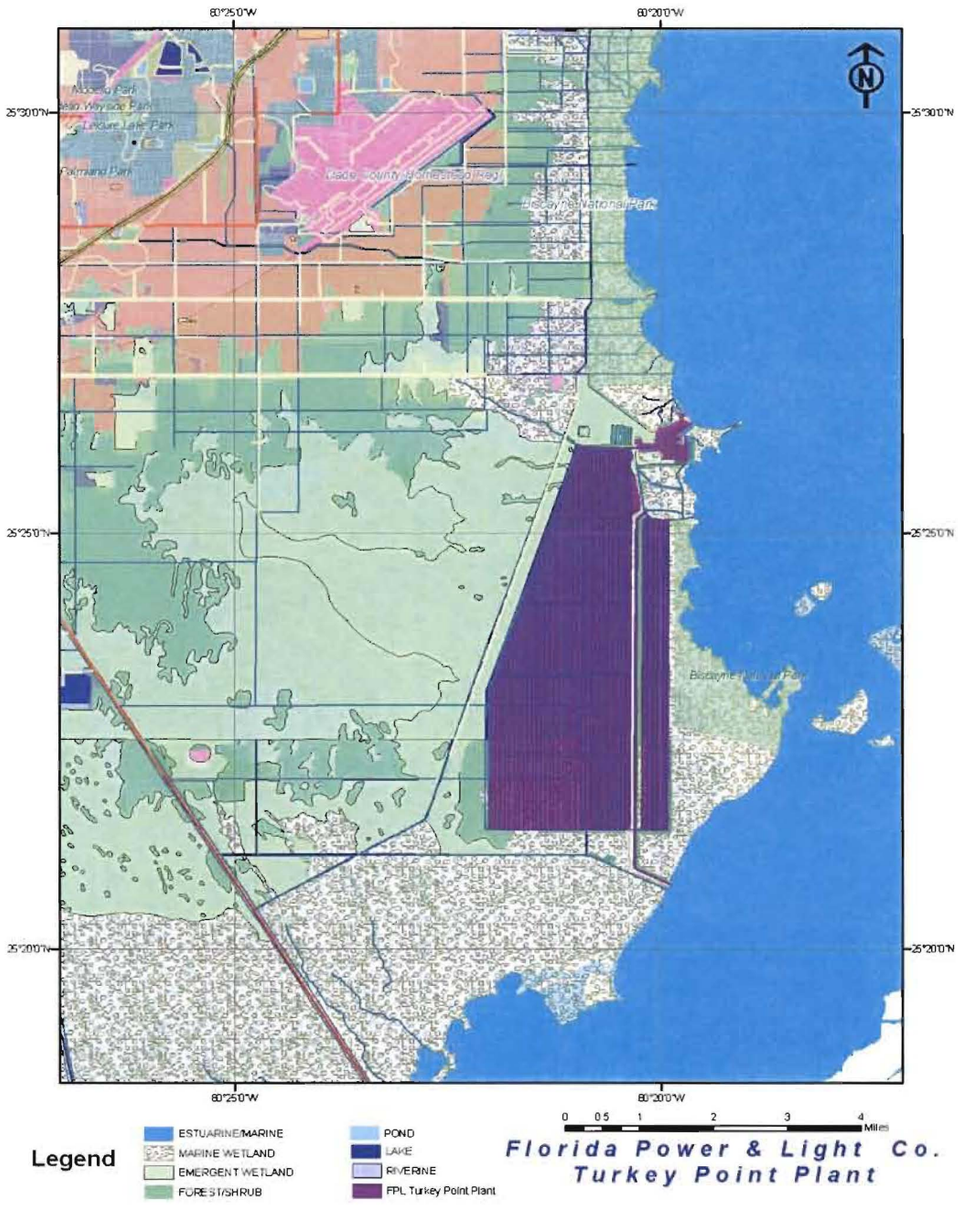
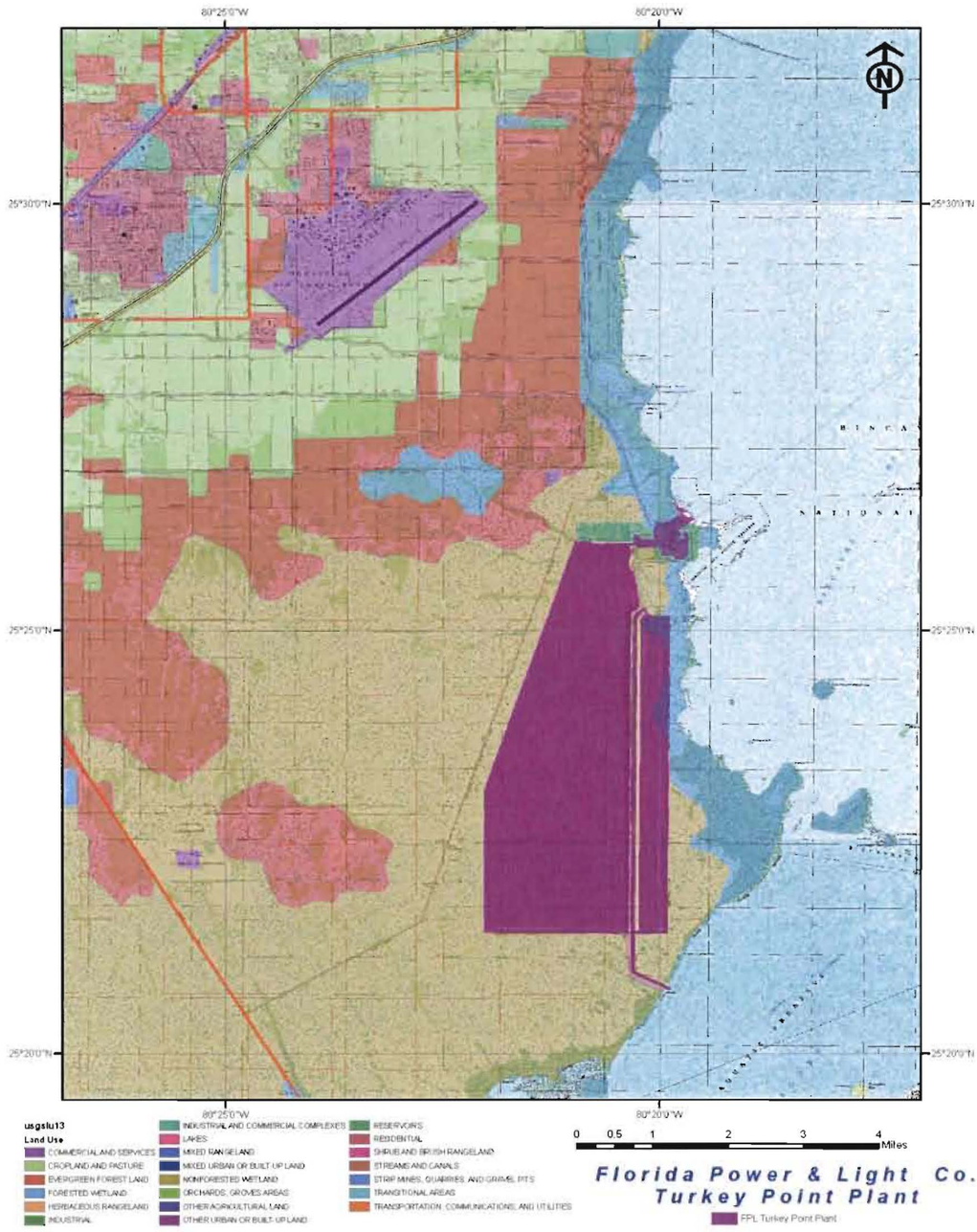
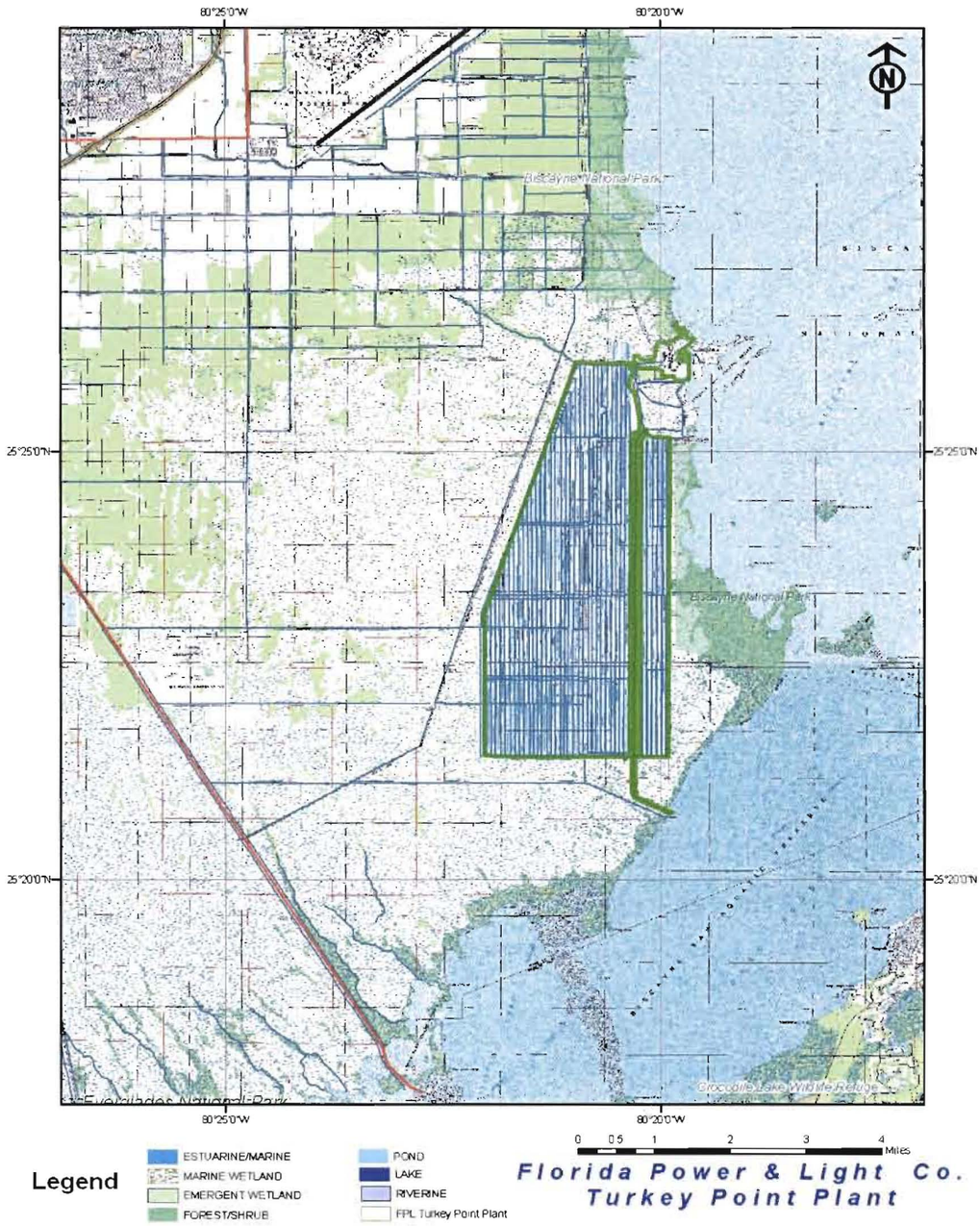

80°25'0"W
80°20'0"W
25°30'0"N
25°25'0"N
25°20'0"N
Modello Park
Leisure Lake Park
Tamiami Park
Biscayne National Park
Legend
ESTUARINE/MARINE
MARINE WETLAND
EMERGENT WETLAND
FOREST/SHRUB
POND
LAKE
RIVERINE
FPL Turkey Point Plant
0 0.5 1 2 3 4 Miles
Florida Power & Light Co.
Turkey Point Plant


80°25'0"W
80°20'0"W
25°30'0"N
25°25'0"N
25°20'0"N
usgslu13
Land Use
COMMERCIAL AND SERVICES
CROPLAND AND PASTURE
EVERGREEN FOREST LAND
FORESTED WETLAND
HERBACEOUS RANGELAND
INDUSTRIAL
INDUSTRIAL AND COMMERCIAL COMPLEXES
LAKES
MIXED RANGELAND
MIXED URBAN OR BUILT-UP LAND
NONFORESTED WETLAND
ORCHARDS, GROVES AREAS
OTHER AGRICULTURAL LAND
OTHER URBAN OR BUILT-UP LAND
RESERVOIRS
RESIDENTIAL
SHRUBLAND BRUSH RANGELAND
STREAMS AND CANALS
STRIP MINES, QUARRIES, AND GRAVEL PITS
TRANSITIONAL AREAS
TRANSPORTATION, COMMUNICATIONS, AND UTILITIES
0 0.5 1 2 3 4
Miles
Florida Power & Light Co.
Turkey Point Plant
FPL Turkey Point Plant


80°25'0"W
80°20'0"W
25°25'0"N
25°20'0"N
Biscayne National Park
Everglades National Park
Crocodile Lake Wildlife Refuge
0 0.5 1 2 3 4
Miles
Legend
ESTUARINE/MARINE
MARINE WETLAND
EMERGENT WETLAND
FOREST/SHRUB
POND
LAKE
RIVERINE
FPL Turkey Point Plant
Florida Power & Light Co.
Turkey Point Plant

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Environmental and Land Use Information: Supplemental Information

Preferred Site #4: Cape Canaveral Plant

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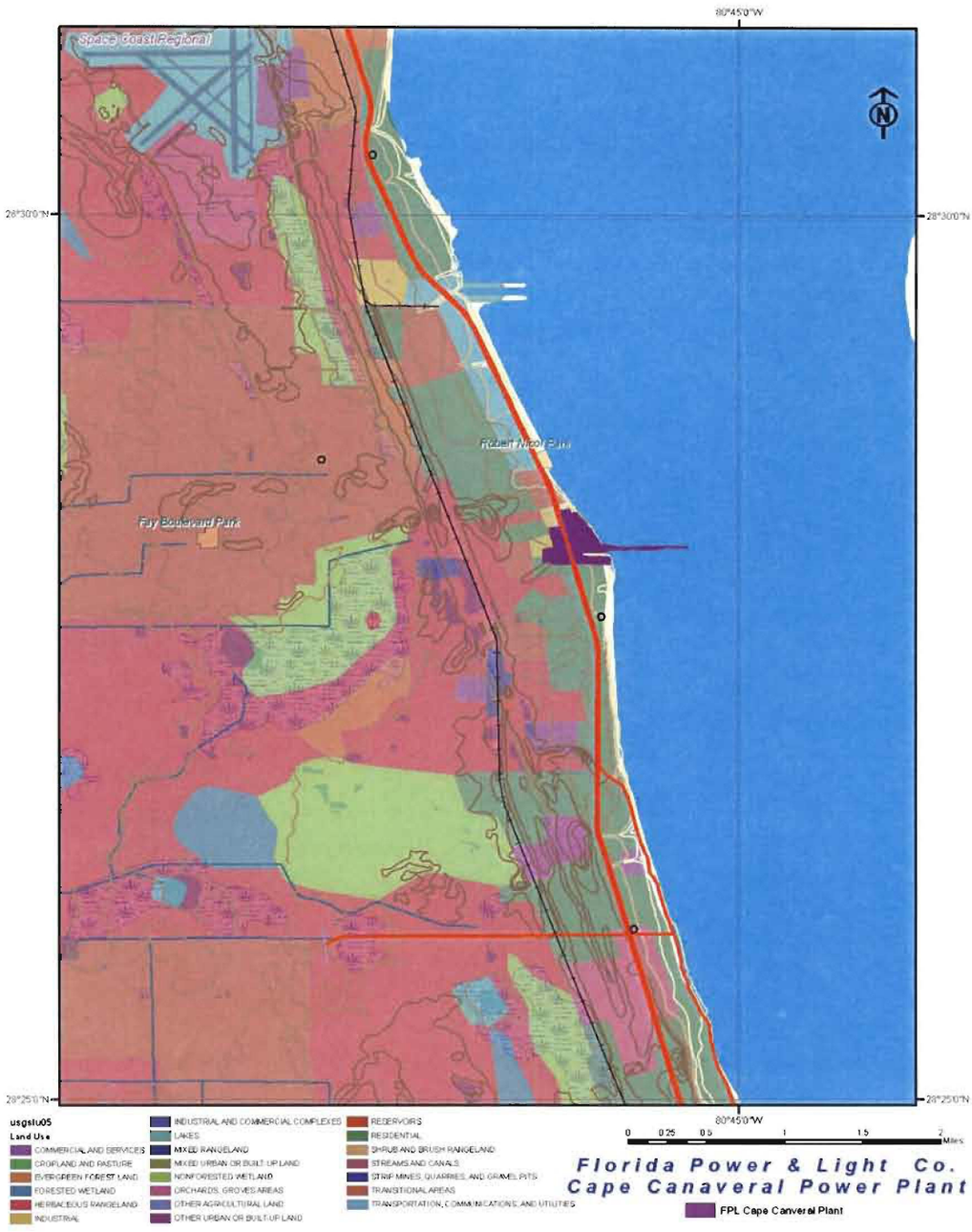
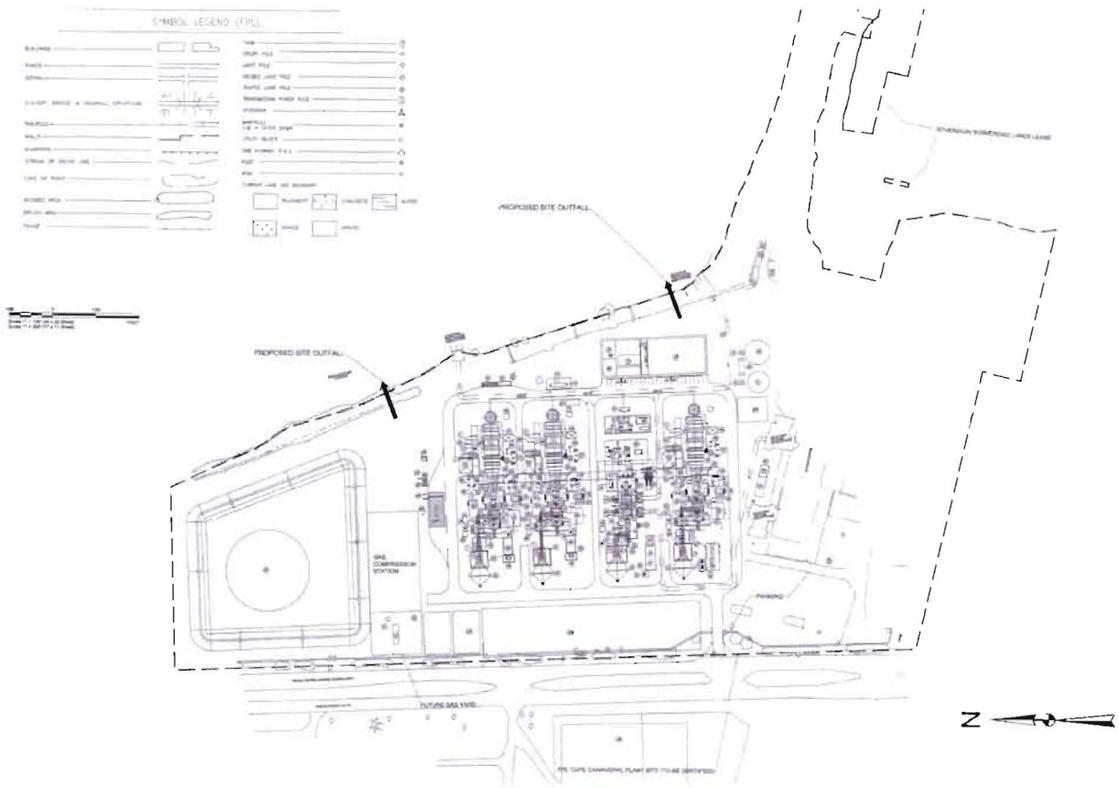
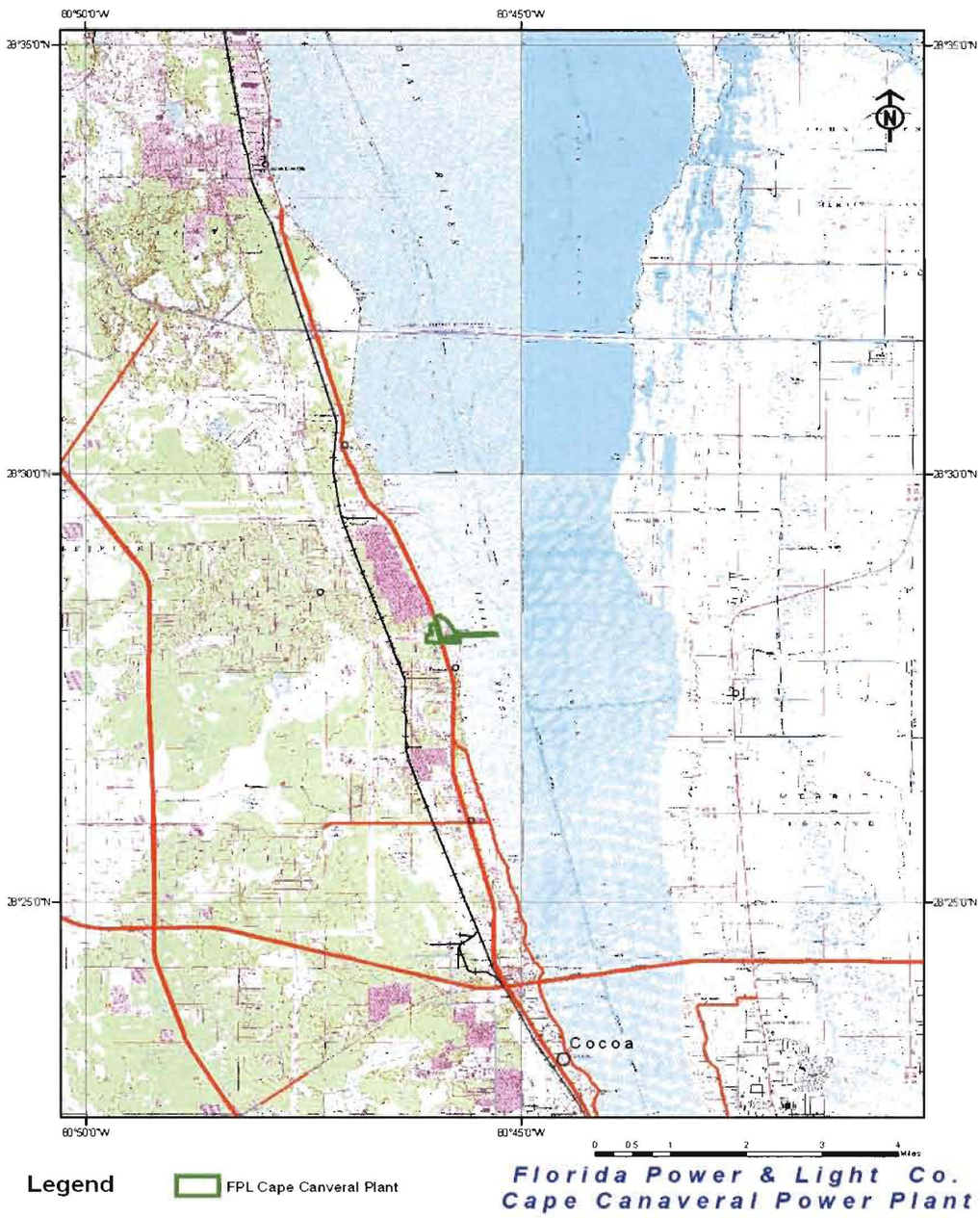

80°45'0"W
28°30'0"N
28°25'0"N
Space Coast Regional
Robert Nicol Park
Fay Boulevard Park
usgslu05
Land Use
COMMERCIAL AND SERVICES
CROPLAND AND PASTURE
EVERGREEN FOREST LAND
FORESTED WETLAND
HERBACEOUS RANGELAND
INDUSTRIAL
INDUSTRIAL AND COMMERCIAL COMPLEXES
LAKES
MIXED RANGELAND
MIXED URBAN OR BUILT-UP LAND
NONFORESTED WETLAND
ORCHARDS, GROVES, AREAS
OTHER AGRICULTURAL LAND
OTHER URBAN OR BUILT-UP LAND
RESERVOIRS
RESIDENTIAL
SHRUB AND BRUSH RANGELAND
STREAMS AND CANALS
STRIP MINES, QUARRIES, AND GRAVEL PITS
TRANSITIONAL AREAS
TRANSPORTATION, COMMUNICATIONS, AND UTILITIES
0 0.25 0.5 1 1.5 2 Miles
Florida Power & Light Co.
Cape Canaveral Power Plant
FPL Cape Canveral Plant



Florida Power & Light Co.

Cape Canaveral Power Plant


80°50'0"W
80°45'0"W
28°35'0"N
28°30'0"N
28°25'0"N
Cocoa
0 0.5 1 2 3 4
Miles
Legend
FPL Cape Canveral Plant
Florida Power & Light Co.
Cape Canaveral Power Plant

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Environmental and Land Use Information:

Supplemental Information

Preferred Site #5: Riviera Plant

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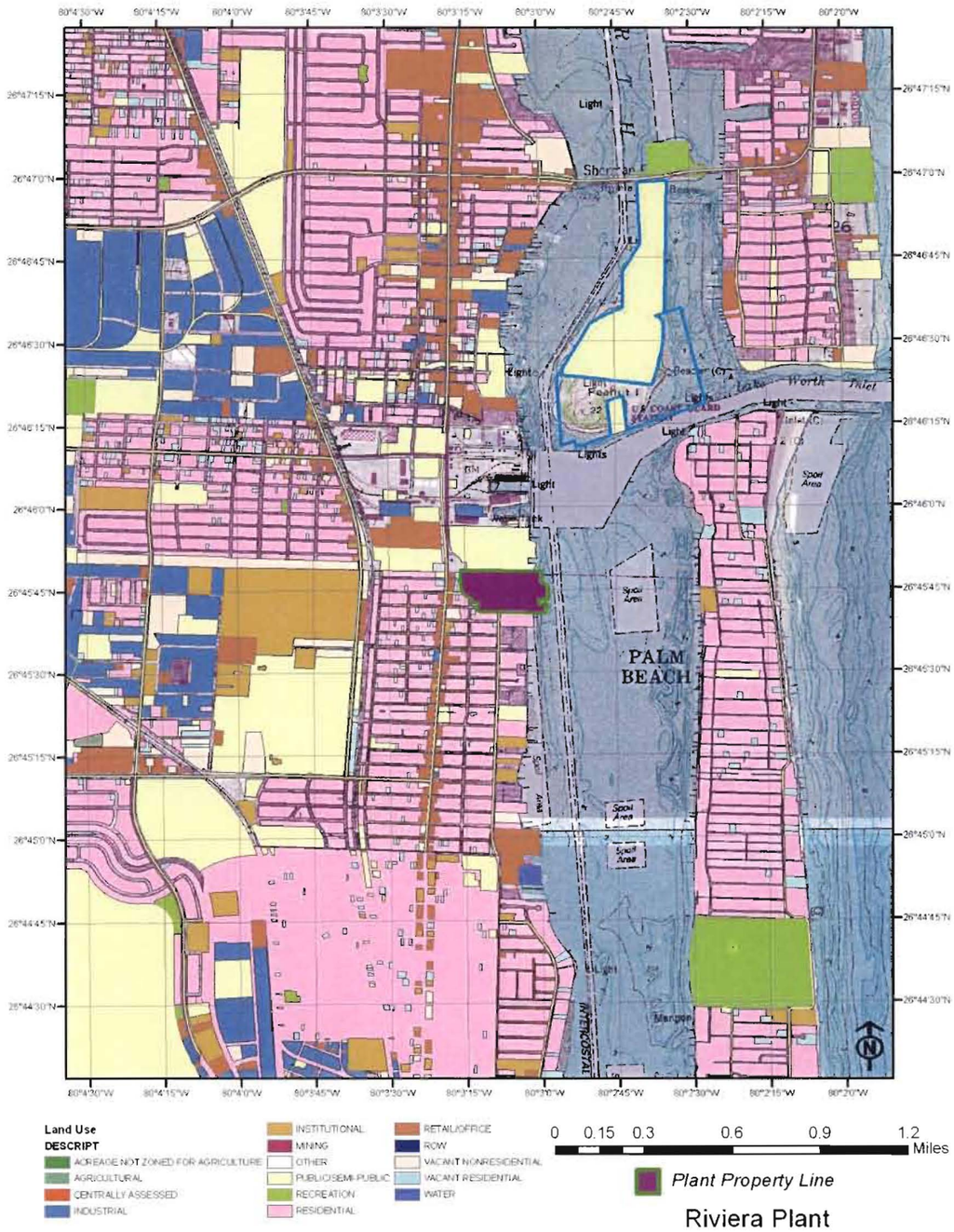
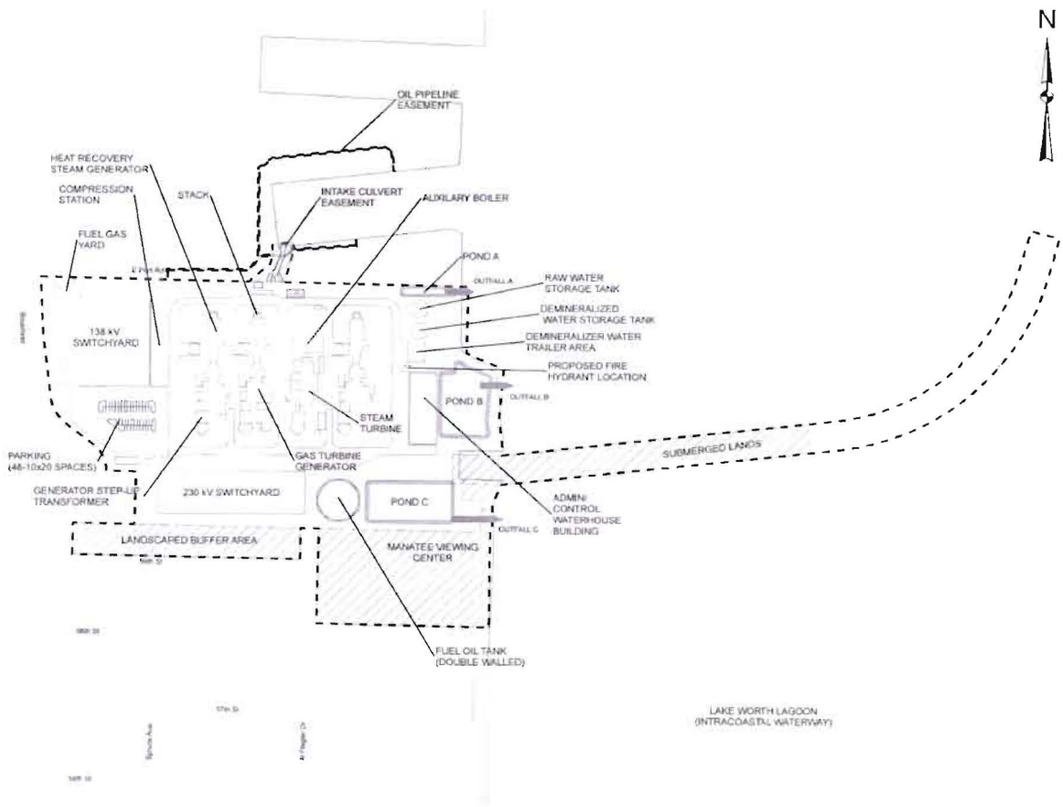
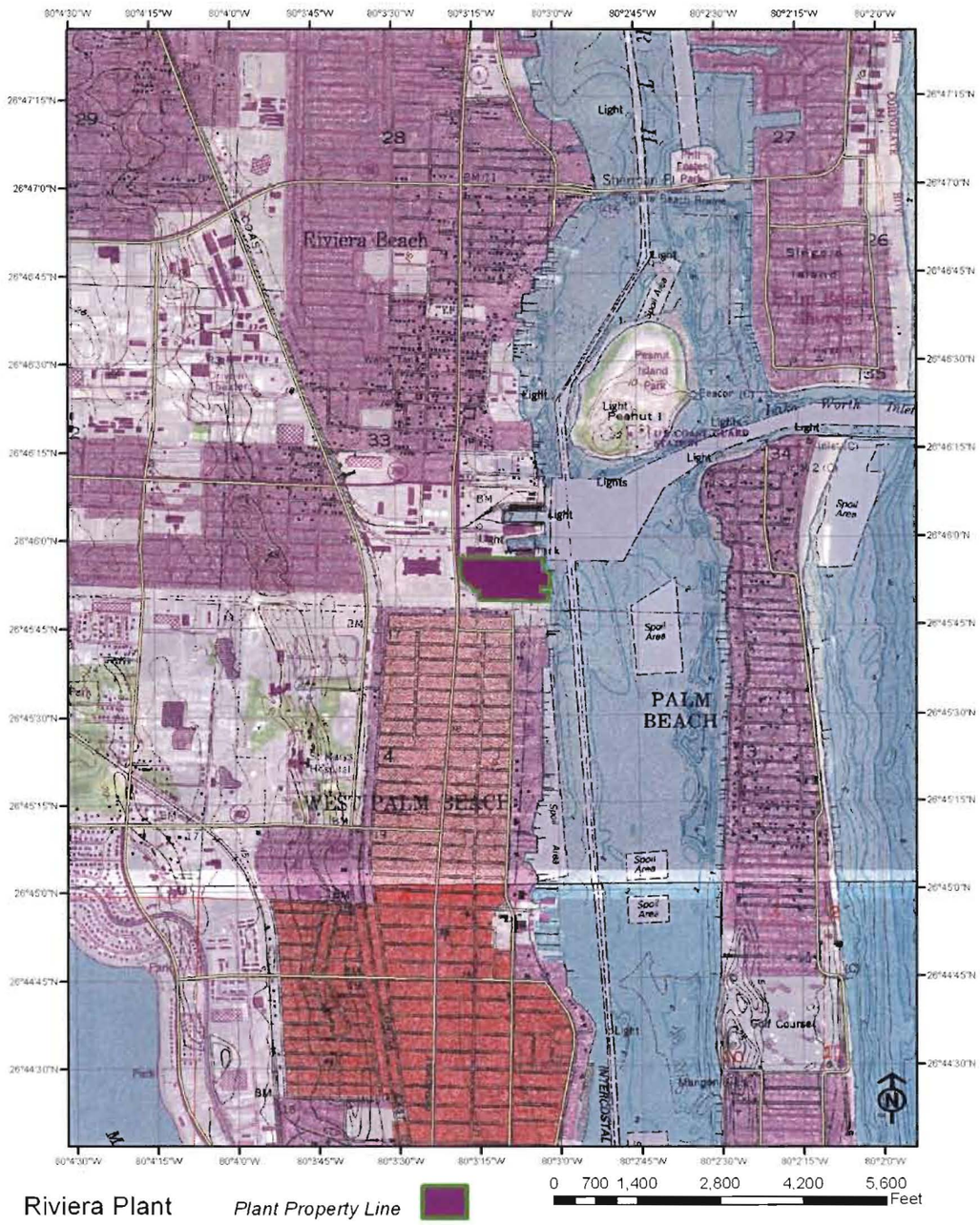

80°4'30"W
80°4'15"W
80°4'0"W
80°3'45"W
80°3'30"W
80°3'15"W
80°3'0"W
80°2'45"W
80°2'30"W
80°2'15"W
80°2'0"W
26°47'15"N
26°47'0"N
26°46'45"N
26°46'30"N
26°46'15"N
26°46'0"N
26°45'45"N
26°45'30"N
26°45'15"N
26°45'0"N
26°44'45"N
26°44'30"N
PALM BEACH
Land Use
DESCRIPT
AGREAGE NOT ZONED FOR AGRICULTURE
AGRICULTURAL
CENTRALLY ASSESSED
INDUSTRIAL
INSTITUTIONAL
MINING
OTHER
PUBLIC/SEMI-PUBLIC
RECREATION
RESIDENTIAL
RETAIL/OFFICE
ROW
VACANT NONRESIDENTIAL
VACANT RESIDENTIAL
WATER
0 0.15 0.3 0.6 0.9 1.2
Miles
Plant Property Line
Riviera Plant



Florida Power & Light Co.

Riviera Plant



Riviera Plant *Plant Property Line*

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Environmental and Land Use Information: Supplemental Information

Preferred Site #6: Desoto Next Generation Solar Energy Center

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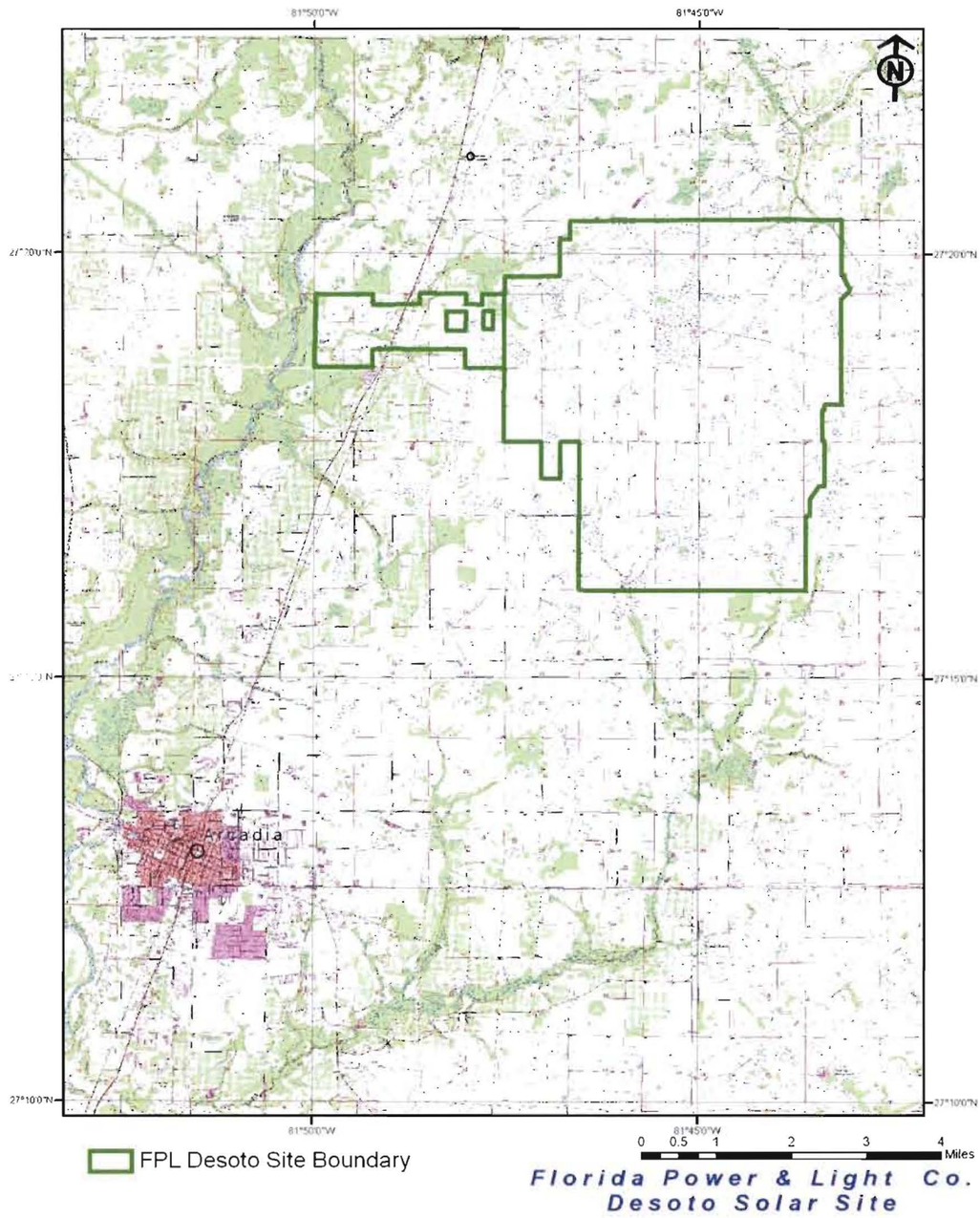
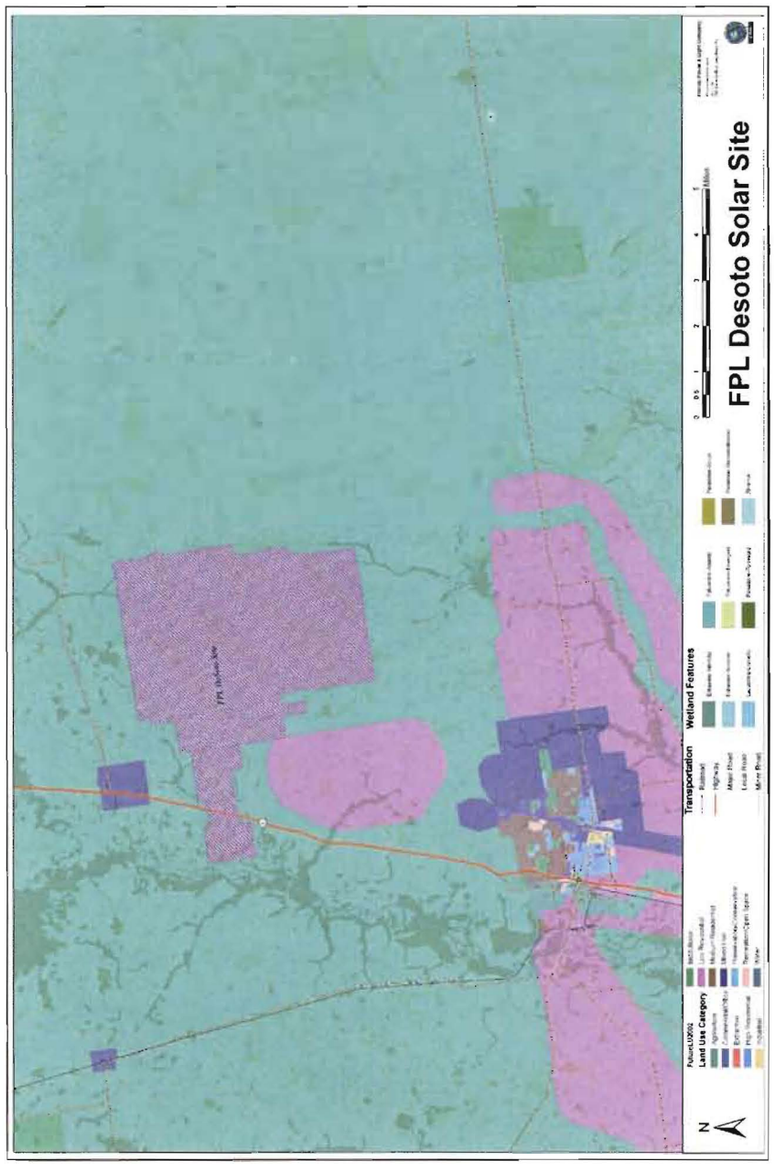
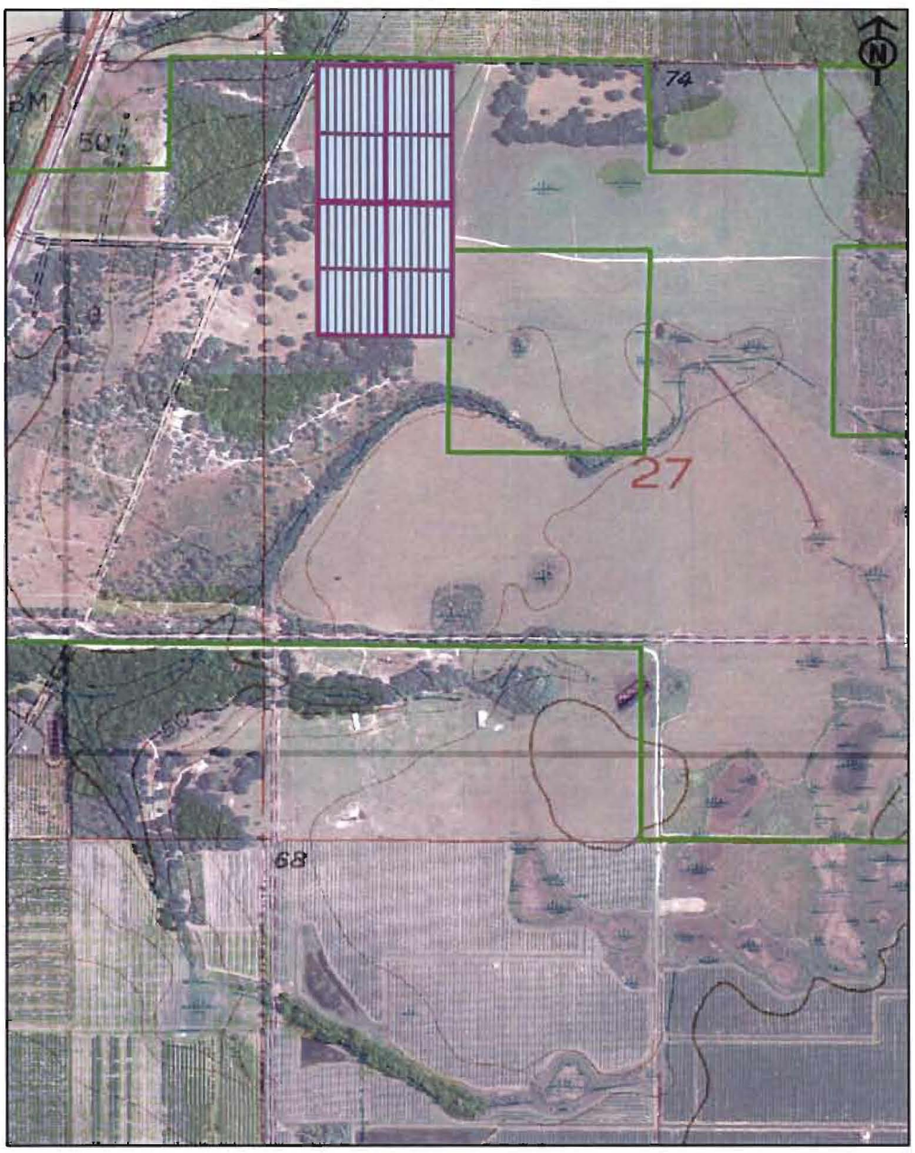

81°50'0"W
81°45'0"W
27°20'0"N
27°15'0"N
27°10'0"N
Arcadia
FPL Desoto Site Boundary
0 0.5 1 2 3 4
Miles
Florida Power & Light Co.
Desoto Solar Site


FPL Desoto Solar Site
Wetland Features
Transportation
Land Use Category
N


N
74
27
68
FPL Desoto Site Boundary
Solar Site Layout
0 0.04 0.08 0.16 0.24 0.32
Miles
Florida Power & Light Co.
Desoto Solar Site Layout

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Environmental and Land Use Information: Supplemental Information

Preferred Site #7: Space Coast Next Generation Solar Energy Center

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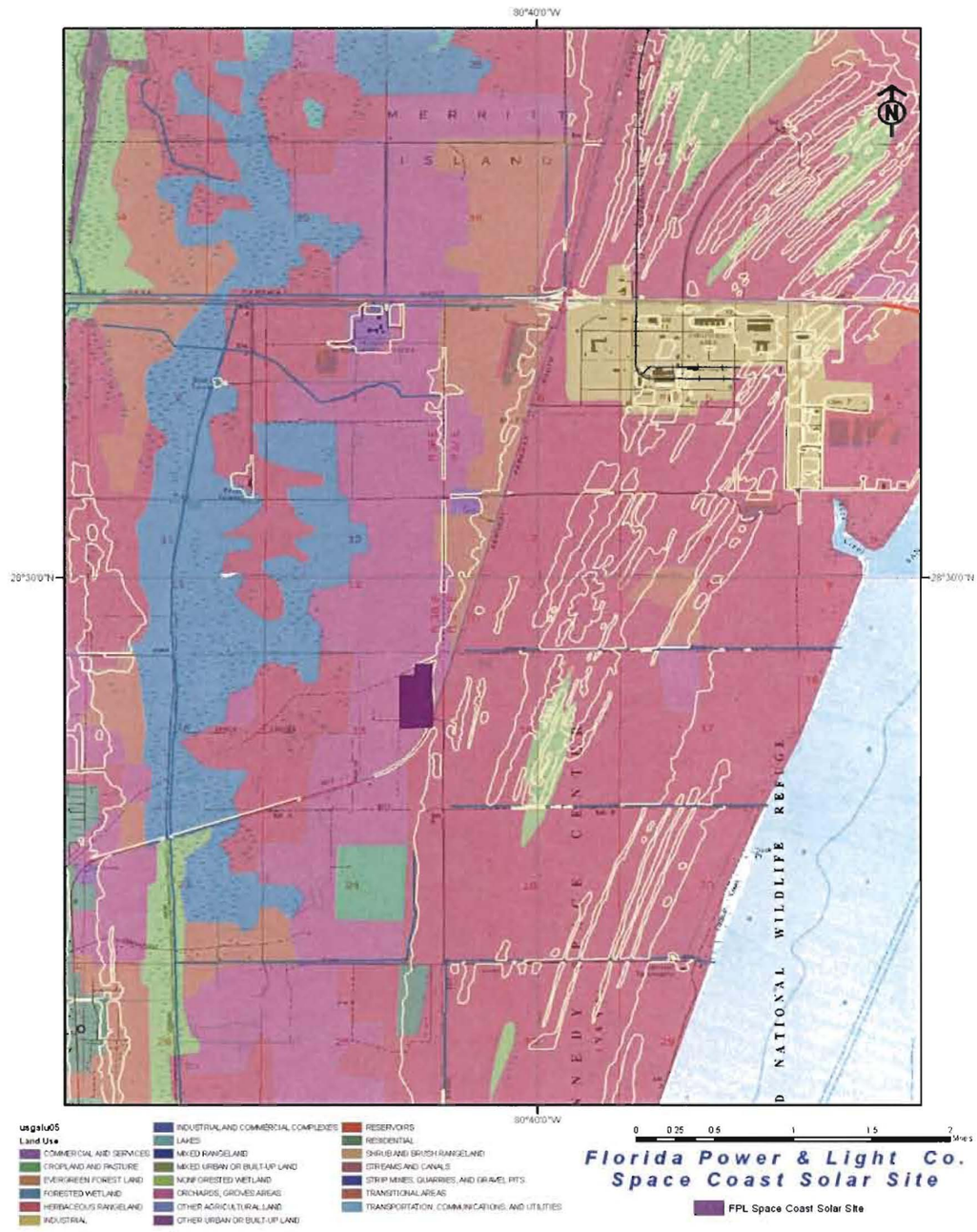
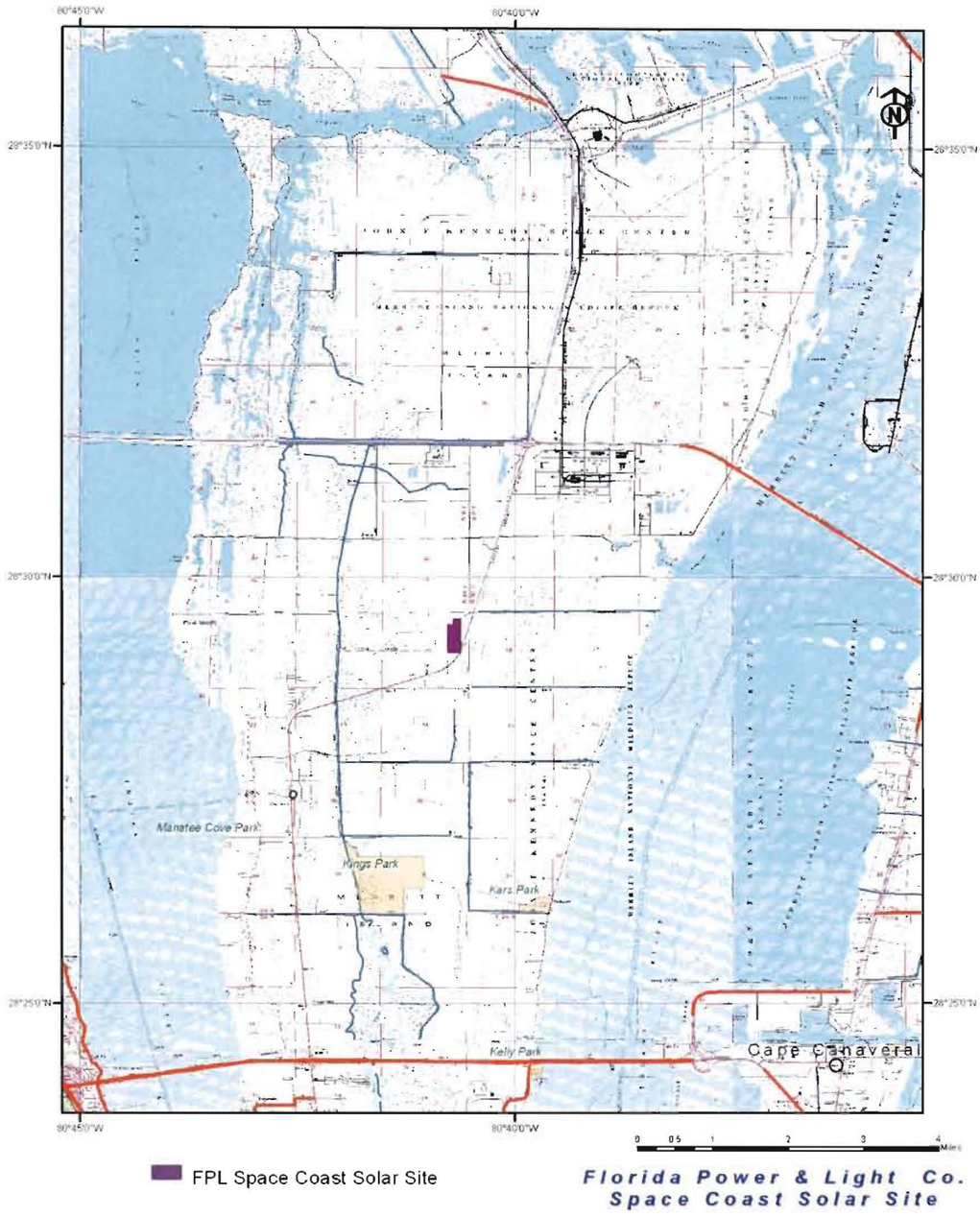
FPL Space Coast Solar Site Layout


80°40'0"W
28°30'0"N
MERRITT
ISLAND
NATIONAL WILDLIFE REFUGE
usgalu05
Land Use
COMMERCIAL AND SERVICES
CROPLAND AND PASTURE
EVERGREEN FOREST LAND
FORESTED WETLAND
HERBACEOUS RANGELAND
INDUSTRIAL
INDUSTRIAL AND COMMERCIAL COMPLEXES
LAKES
MIXED RANGELAND
MIXED URBAN OR BUILT-UP LAND
NONFORESTED WETLAND
ORCHARDS, GROVES AREAS
OTHER AGRICULTURAL LAND
OTHER URBAN OR BUILT-UP LAND
RESERVOIRS
RESIDENTIAL
SHRUB AND BRUSH RANGELAND
STREAMS AND CANALS
STRIP MINES, QUARRIES, AND GRAVEL PITS
TRANSITIONAL AREAS
TRANSPORTATION, COMMUNICATIONS, AND UTILITIES
0 0.25 0.5 1 1.5 2 Miles
Florida Power & Light Co.
Space Coast Solar Site
FPL Space Coast Solar Site


80°45'0"W
80°40'0"W
28°35'0"N
28°30'0"N
28°25'0"N
N
Manatee Cove Park
Kings Park
Kars Park
Kelly Park
Cape Canaveral
0 0.5 1 2 3 4
Miles
FPL Space Coast Solar Site
Florida Power & Light Co.
Space Coast Solar Site

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Environmental and Land Use Information:

Supplemental Information

Preferred Site #8: Martin Next Generation Solar Energy Center

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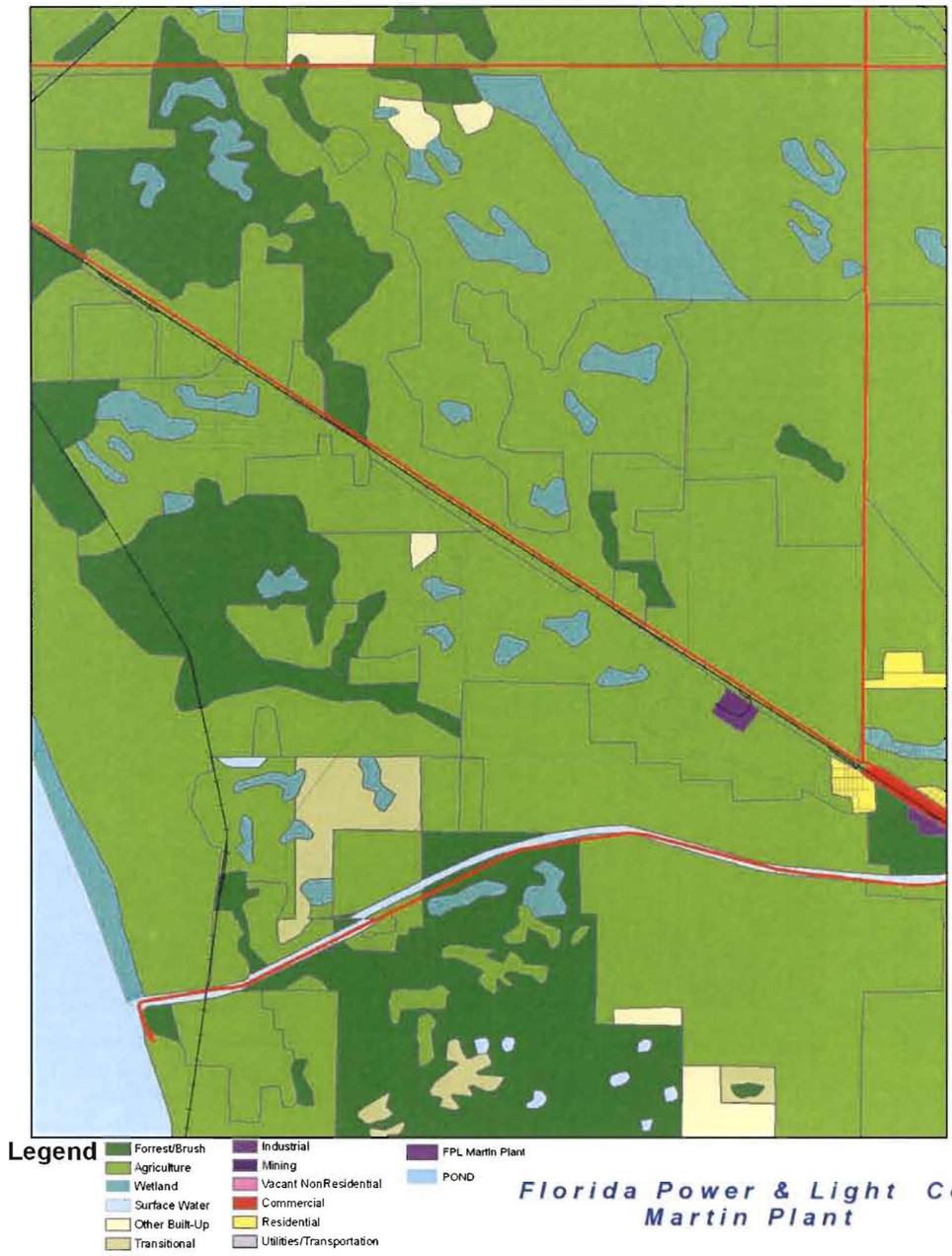
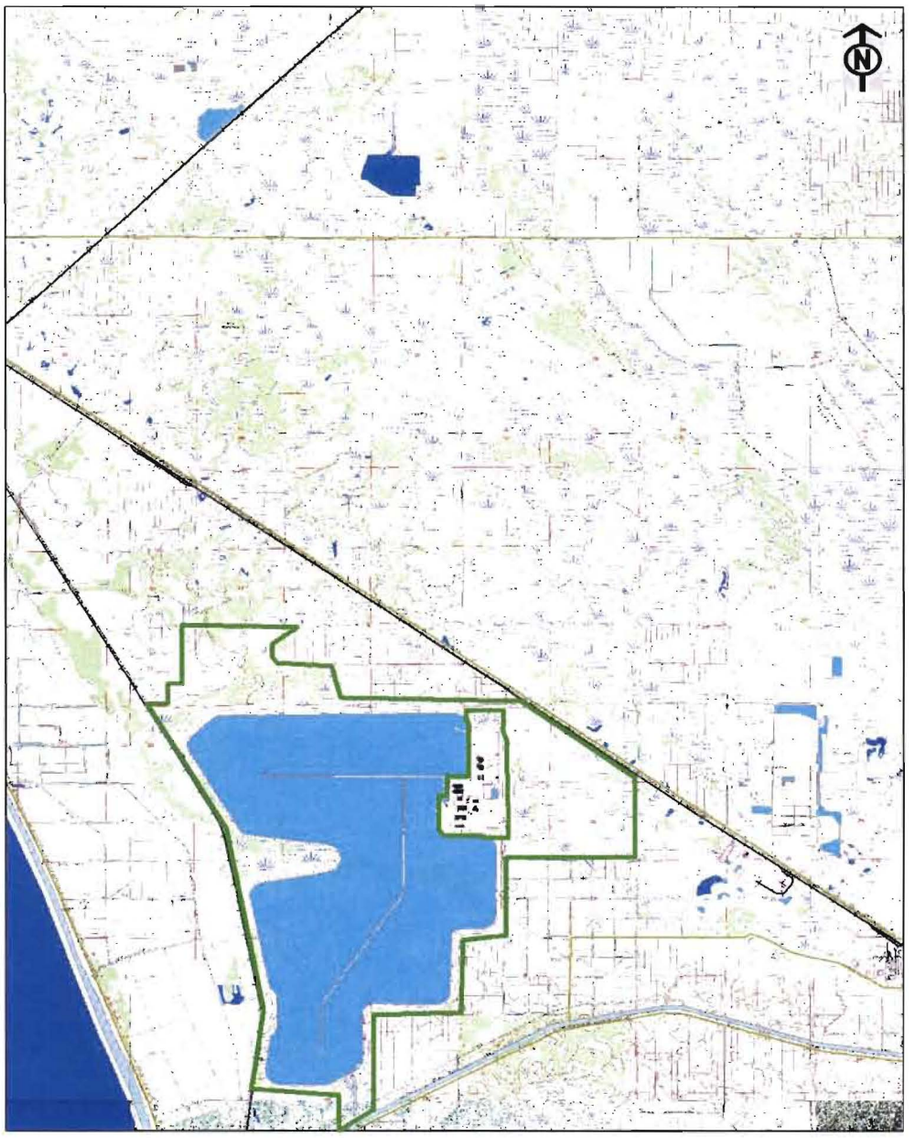
Martin Plant
Facility Layout

FPL Martin Plant Site
Facility Structures
Solar Thermal Plant

Florida Power & Light Co.
Martin Plant


Legend
Forrest/Brush
Agriculture
Wetland
Surface Water
Other Built-Up
Transitional
Industrial
Mining
Vacant NonResidential
Commercial
Residential
Utilities/Transportation
FPL Martin Plant
POND
Florida Power & Light Co.
Martin Plant


N
Miles
0 0.5 1 2 3 4
Legend
FPL Martin Plant
POND
LAKE
Florida Power & Light Co.
Martin Plant

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Environmental and Land Use Information: Supplemental Information

Potential Site #1: West Broward

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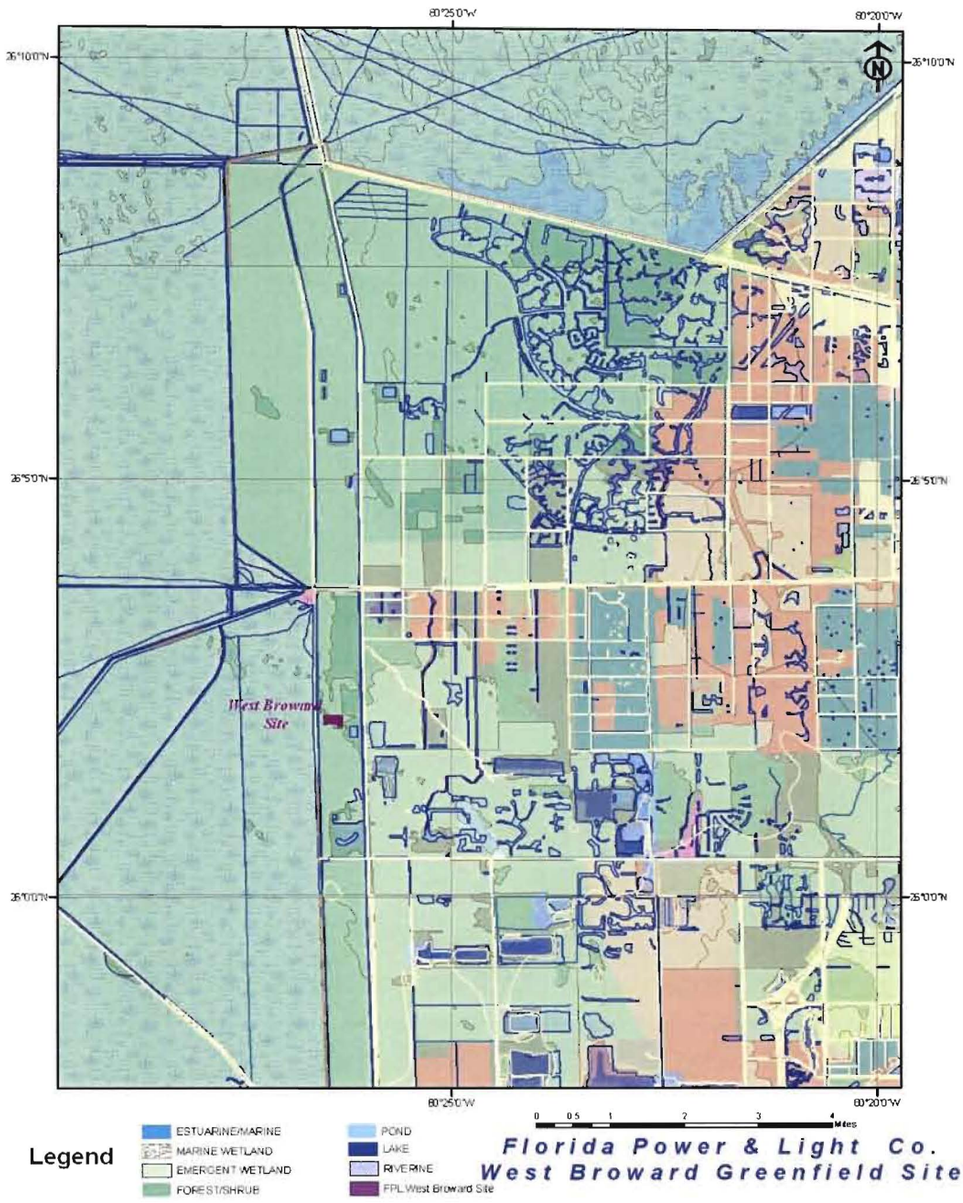
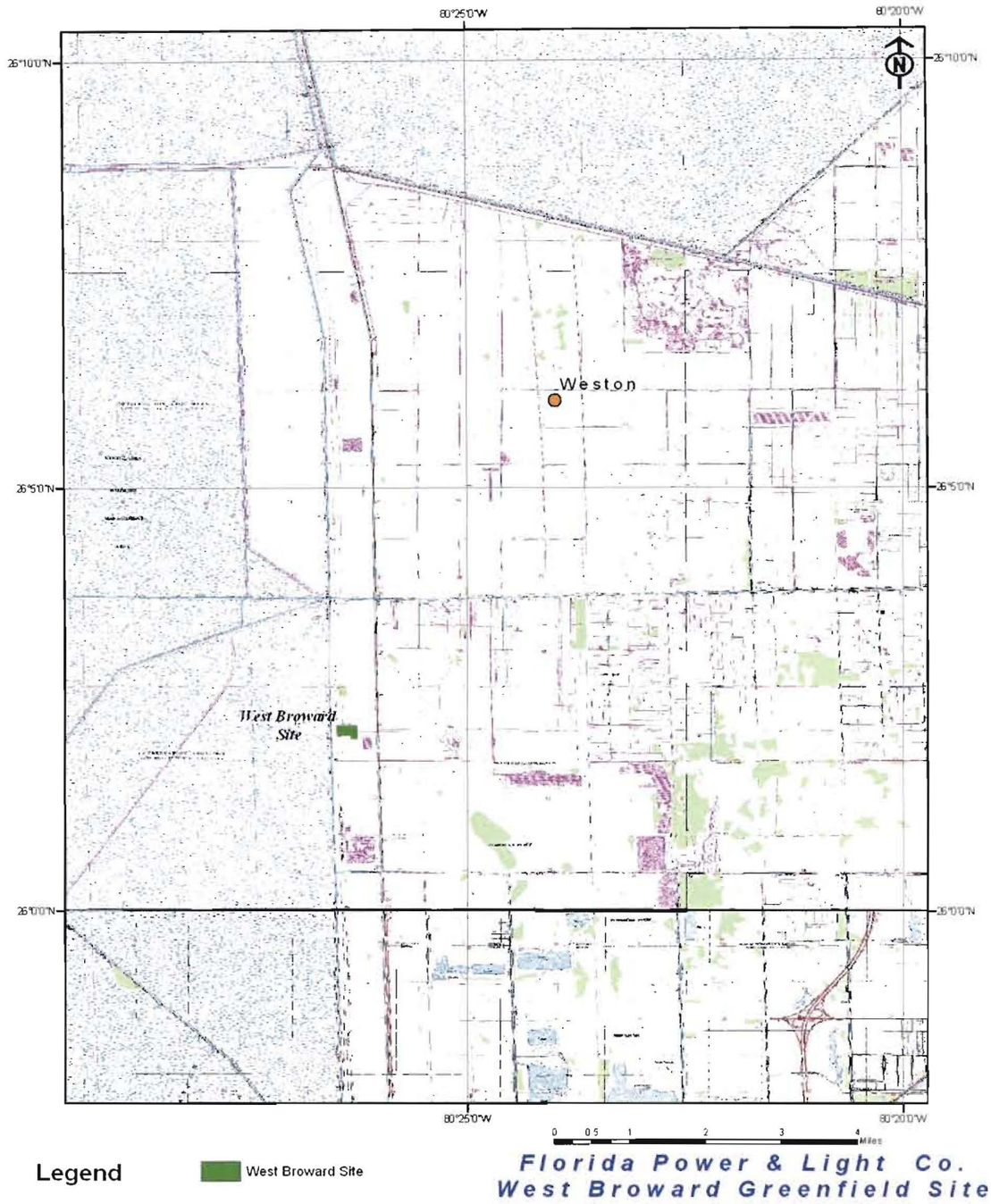

80°25'0"W
80°20'0"W
26°10'0"N
26°5'0"N
26°0'0"N
N
West Broward Site
0 0.5 1 2 3 4 Miles
Legend
ESTUARINE/MARINE
MARINE WETLAND
EMERGENT WETLAND
FOREST/SHRUB
POND
LAKE
RIVERINE
FPL West Broward Site
Florida Power & Light Co.
West Broward Greenfield Site


80°25'0"W
80°20'0"W
26°10'0"N
26°5'0"N
26°0'0"N
Weston
West Broward Site
0 0.5 1 2 3 4 Miles
Legend
West Broward Site
Florida Power & Light Co.
West Broward Greenfield Site

Environmental and Land Use Information: Supplemental Information

Potential Site # 2: Ft. Myers

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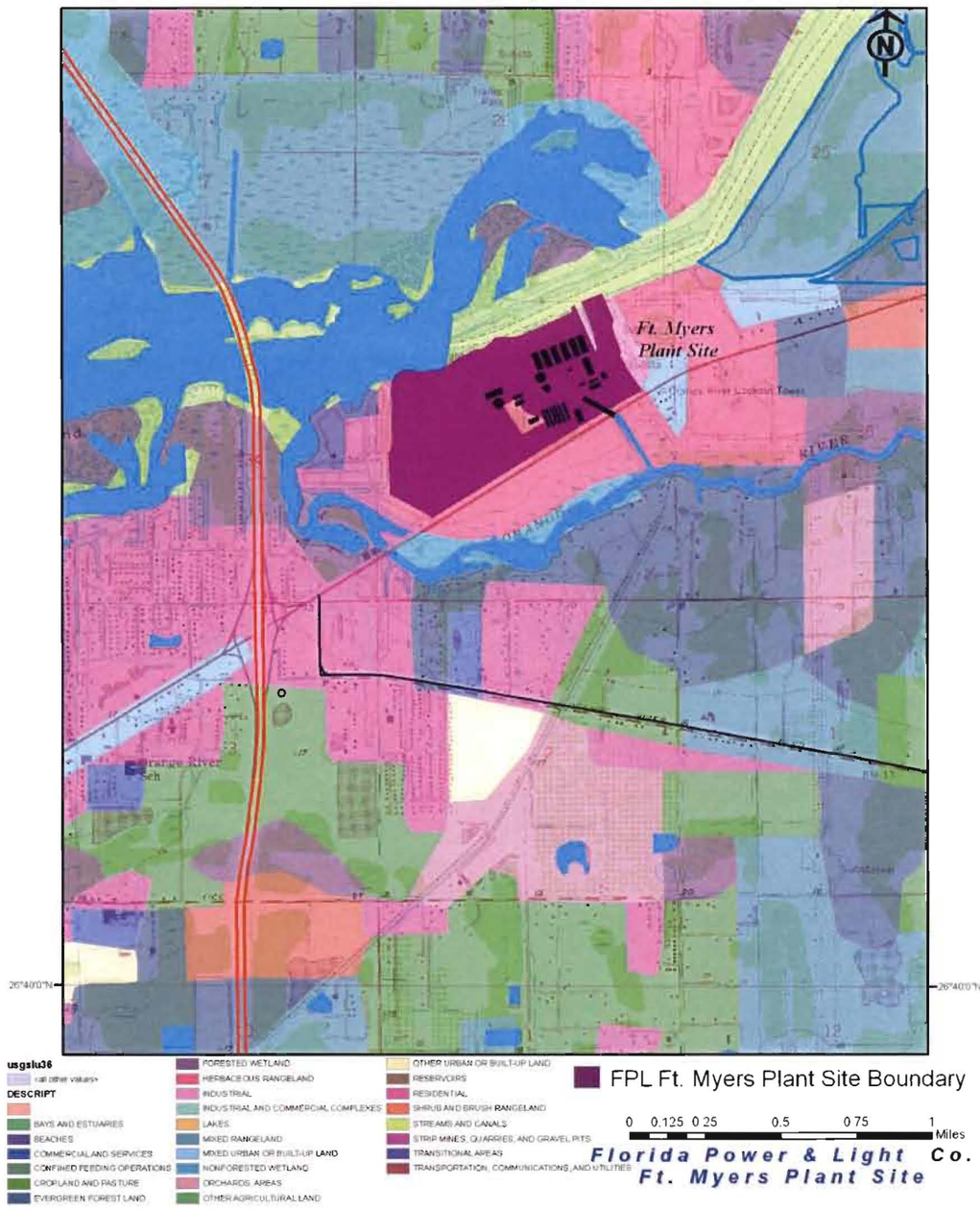
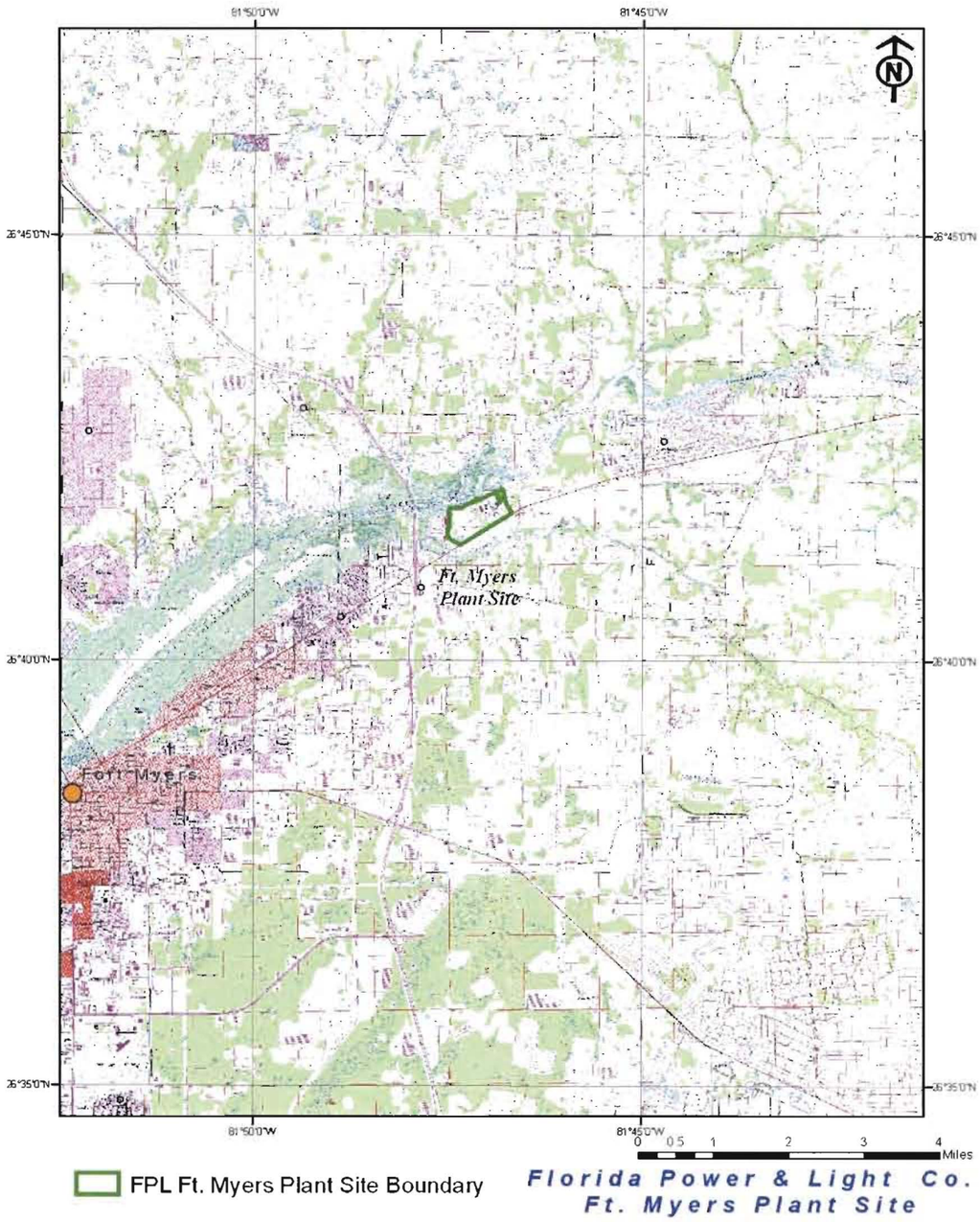

Ft. Myers
Plant Site
26°40'0"N
usgslu36
DESCRIPT
BAYS AND ESTUARIES
BEACHES
COMMERCIAL AND SERVICES
CONFINED FEEDING OPERATIONS
CROPLAND AND PASTURE
EVERGREEN FOREST LAND
FORESTED WETLAND
HERBACEOUS RANGELAND
INDUSTRIAL
INDUSTRIAL AND COMMERCIAL COMPLEXES
LAKES
MIXED RANGELAND
MIXED URBAN OR BUILT-UP LAND
NONFORESTED WETLAND
ORCHARDS, AREAS
OTHER AGRICULTURAL LAND
OTHER URBAN OR BUILT-UP LAND
RESERVOIRS
RESIDENTIAL
SHRUB AND BRUSH RANGELAND
STREAMS AND CANALS
STRIP MINES, QUARRIES, AND GRAVEL PITS
TRANSITIONAL AREAS
TRANSPORTATION, COMMUNICATIONS, AND UTILITIES
FPL Ft. Myers Plant Site Boundary
0 0.125 0.25 0.5 0.75 1
Miles
Florida Power & Light Co.
Ft. Myers Plant Site


81°50'0"W
81°45'0"W
26°45'0"N
26°40'0"N
26°35'0"N
Ft. Myers
Plant Site
Fort Myers
0 0.5 1 2 3 4
Miles
FPL Ft. Myers Plant Site Boundary
Florida Power & Light Co.
Ft. Myers Plant Site

Environmental and Land Use Information: Supplemental Information

Potential Site #3: Lauderdale Plant

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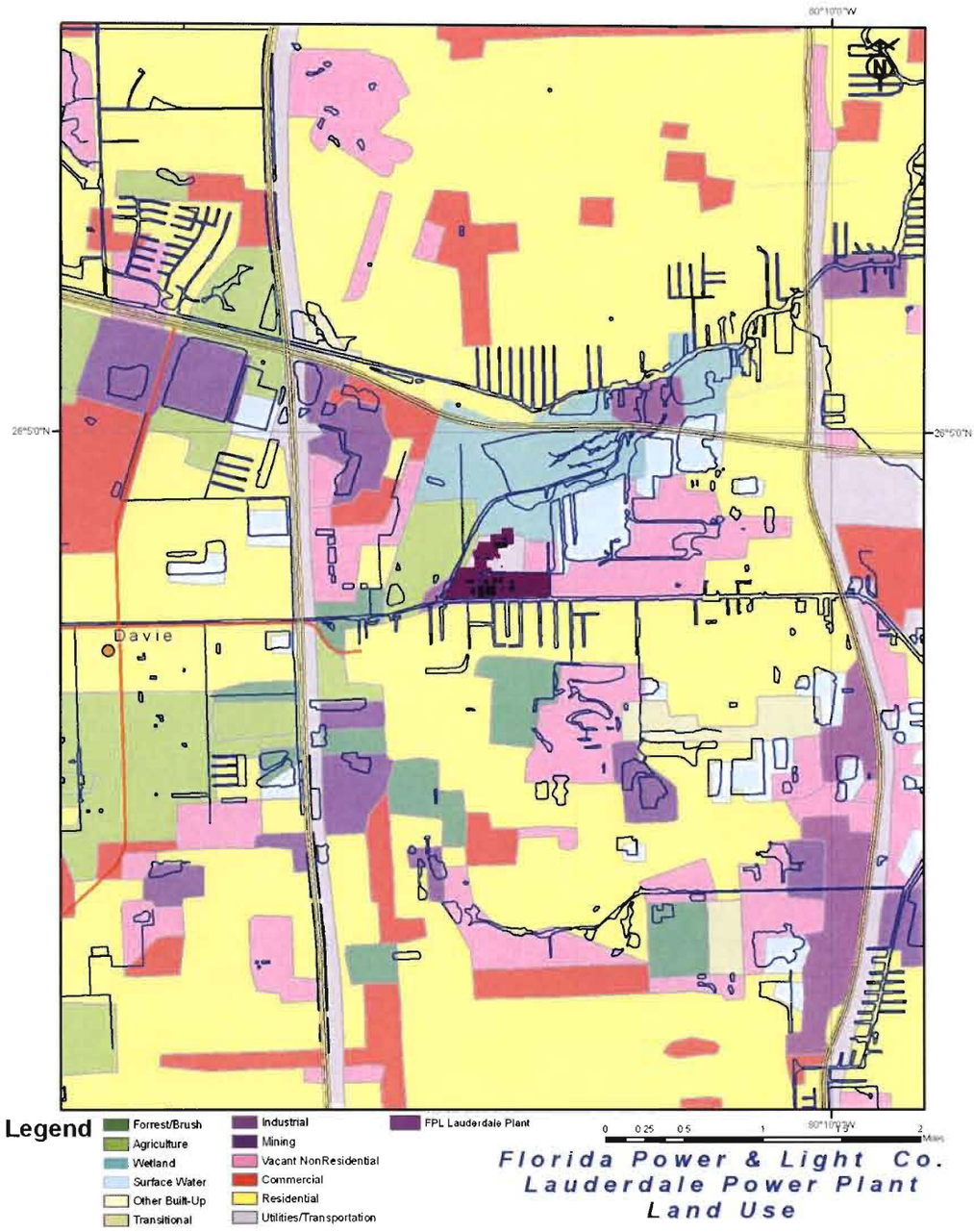
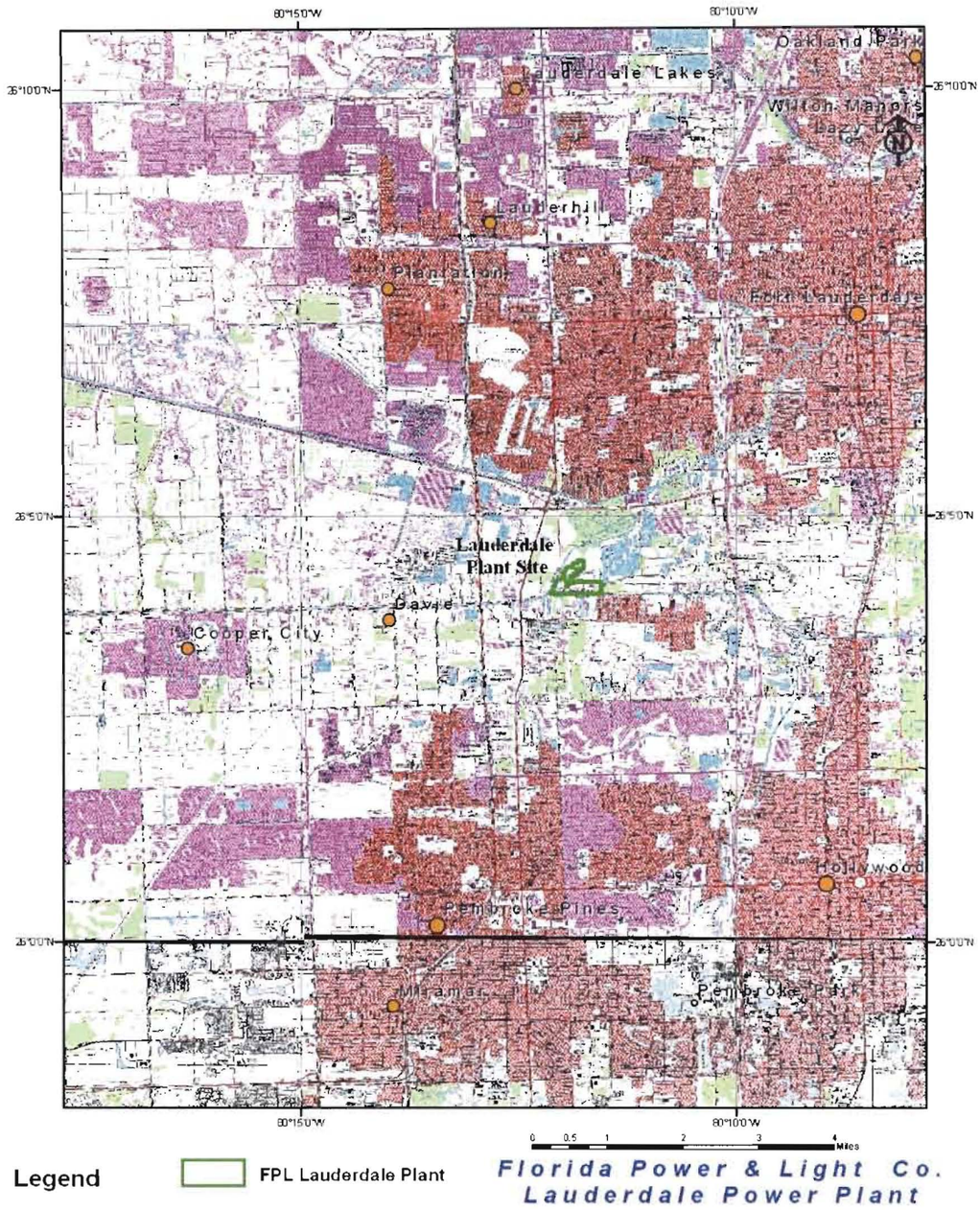

80°10'0"W
26°5'0"N
Davie
Legend
Forrest/Brush
Agriculture
Wetland
Surface Water
Other Built-Up
Transitional
Industrial
Mining
Vacant NonResidential
Commercial
Residential
Utilities/Transportation
FPL Lauderdale Plant
0 0.25 0.5 1 2
Miles
Florida Power & Light Co.
Lauderdale Power Plant
Land Use


80°15'0"W
80°10'0"W
26°10'0"N
26°5'0"N
26°0'0"N
Oakland Park
Lauderdale Lakes
Wilton Manors
Lazy Lake
Lauderhill
Plantation
Fort Lauderdale
Lauderdale
Plant Site
Davie
Cooper City
Hollywood
Pembroke Pines
Miramar
Pembroke Park
0 0.5 1 2 3 4
Miles
Legend
FPL Lauderdale Plant
Florida Power & Light Co.
Lauderdale Power Plant

Environmental and Land Use Information: Supplemental Information

Potential Site #4: Manatee Plant

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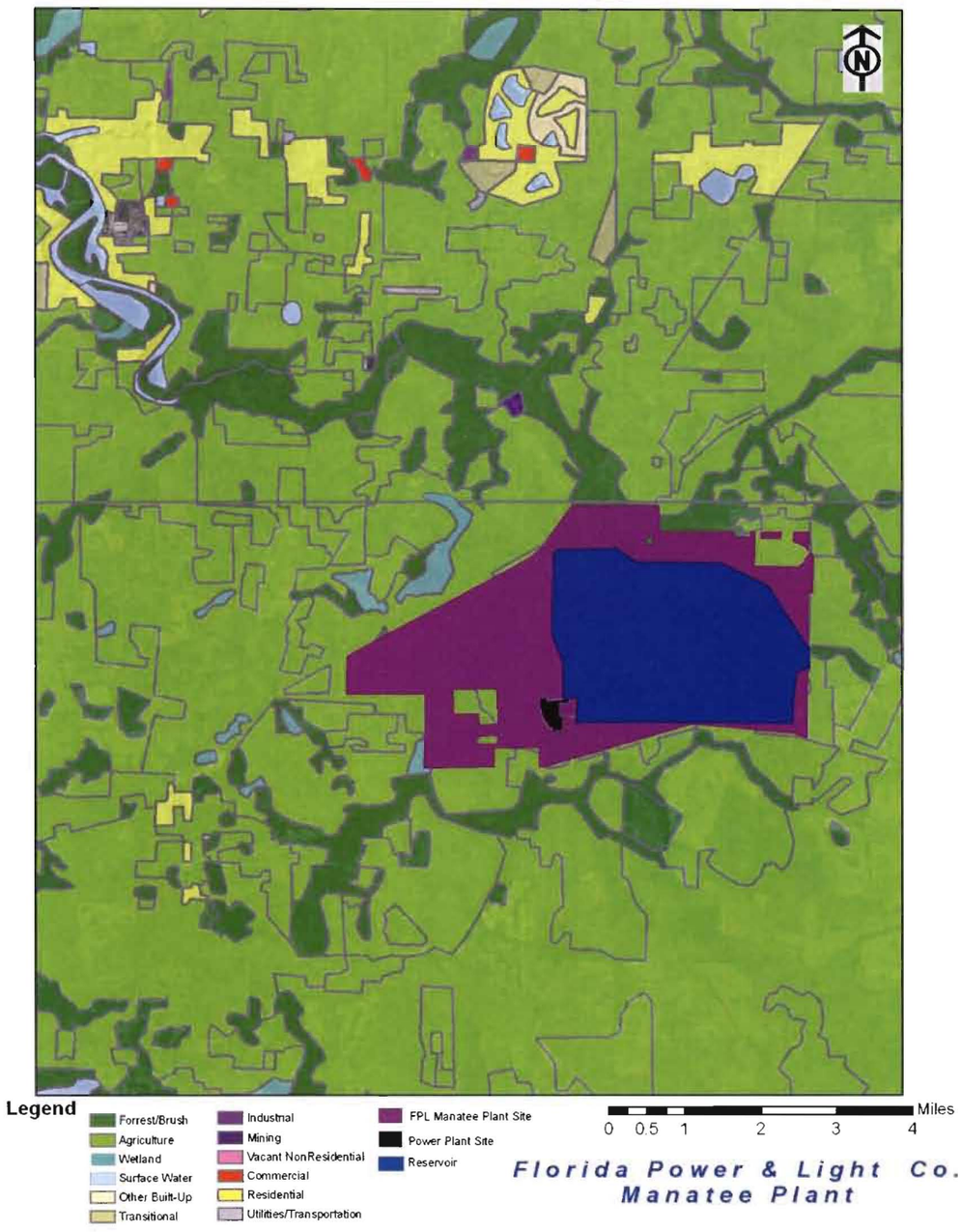
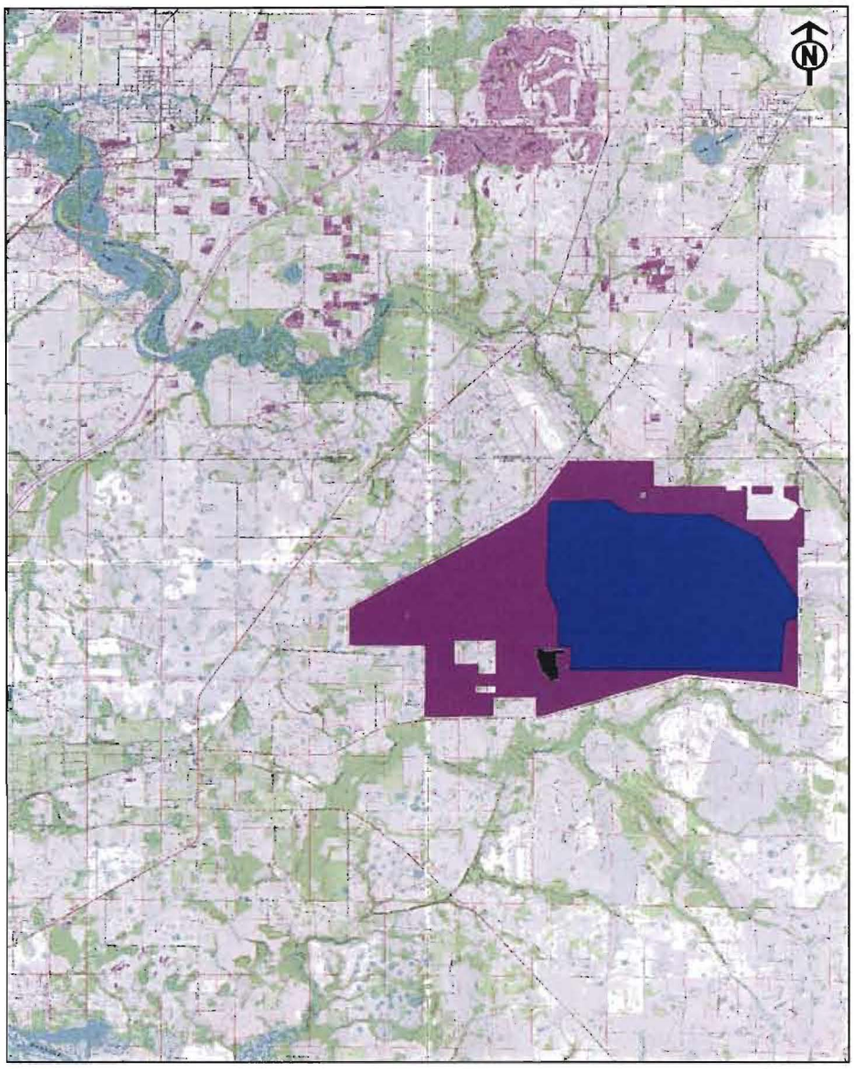

Legend
Forrest/Brush
Agriculture
Wetland
Surface Water
Other Built-Up
Transitional
Industrial
Mining
Vacant NonResidential
Commercial
Residential
Utilities/Transportation
FPL Manatee Plant Site
Power Plant Site
Reservoir
0 0.5 1 2 3 4
Miles
Florida Power & Light Co.
Manatee Plant



USGS Topographic Map

Legend

FPL Manatee Plant Site

POND

Power Plant Site

Miles

0 0.4 0.8 1.6 2.4 3.2

Florida Power & Light Co.
Manatee Plant

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 limitations/constraints: external limitations and internal limitations. External limitations deal with FPL's ties to its neighboring systems. Internal limitations deal with the flow of electricity within the FPL system.

The external limitations are important since they affect the development of assumptions for the amount of external assistance that is available to the FPL system as well as the amount and price of economy energy purchases. Therefore, these external limitations 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 limitations are addressed by identifying potential geographic locations for potential new units that minimize adverse impacts to the flow of electricity within FPL's system. The internal transmission limitations are also addressed by developing the direct costs for siting new units at different locations and by evaluating the cost impacts created by the new unit/unit location combination on the operation of existing units in the FPL system. Both of these site- and system-related transmission costs are developed for each different unit/unit location option or groups of options. In addition, transfer limits for capacity and

energy that can be imported into the Southeastern region of FPL's system are also developed for use in FPL's production costing analyses. (A further discussion of the Southeastern Florida region and the need to maintain a regional balance between generation and transmission contributions is found in Chapter III.)

FPL's annual transmission planning work determines transmission additions needed to address limitations and to maintain/enhance system reliability. FPL's planned transmission facilities to interconnect and integrate FPL's resource plans and those that must be certified under the Transmission Line Siting Act are presented in Chapter III.

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.

FPL typically performs economic analyses of competing resource plans using as an economic criterion FPL's levelized system average electric rates (i.e., a Rate Impact Measure or RIM approach). In addition, for analyses in which DSM levels are not changed, FPL uses the equivalent criterion of the cumulative present value of revenue requirements for the FPL system.[4]

The load forecast that is presented in FPL's 2009 Site Plan was developed in January 2009. FPL has not performed sensitivity analyses on forecasts that differ from this recently developed load forecast.

[4] 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 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 fuel price forecasts are discussed in Chapter III of this document. FPL's 2008 resource planning work utilized up to four different fuel cost forecasts (and four different environmental compliance cost forecasts). Detailed discussions of those fuel cost forecasts, and the results of utilizing them on the resource plans being analyzed in each filing, were presented to the FPSC in FPL's filings for Determination of Need for WCEC Unit 3 and the conversions of FPL's existing Cape Canaveral and Riviera plants. In addition, FPL used different fuel and environmental compliance cost forecasts in the 2008 nuclear cost recovery filings for the nuclear uprates of its existing nuclear units and for the new Turkey Point Units 6 & 7.

The resource plan presented in this Site Plan is largely the result of those prior analyses. For that reason, this resource plan, with the recently developed January 2009 load forecast, has not been further tested for different fuel cost forecasts.

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.

As described above in the answer to Discussion Item # 3, FPL used up to four fuel forecasts in the filings for Determination of Need, and/or cost recovery filings, for a variety of new units as described in the previous question. While these forecasts did not represent a constant cost differential between oil/gas and coal, a variety of fuel cost differentials were represented in these forecasts.

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, capacity output ratings, and heat rate information. Schedule 1 in Chapter I, and Schedule 8 in Chapter III, 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 in its 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 in Chapter III.

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.

In its 2008 resource planning work, FPL used two sets of key financial assumptions. A 44.2% debt and 55.8% equity FPL capital structure was used throughout this work. In its early 2008 analyses, FPL used a 6.43% projected debt, an equity return of 11.75%, and after-tax discount rate of 8.4% for generation costs and 8.3% for all other costs. In its analyses later in 2008, FPL used 6.6% projected debt, an equity return of 11.75%, and after-tax discount rate of 8.35%. The change in the discount rate assumption is due partly as a result of the change in the cost of debt assumption and partly because FPL no longer assumes that the federal manufacturing tax credit would likely apply to new generating units built in the time frame discussed in this analysis. This latter assumption change also resulted in the same discount rate (8.35%) being applied to both generation and non-generation costs in the analyses presented in this filing.

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). As discussed in response to Discussion Item # 2, both the electricity rate perspective and the cumulative present value of system revenue requirement perspective are identical when DSM levels are unchanged between competing plans. Therefore, in planning work in which DSM levels were unchanged, the equivalent cumulative present value of revenue requirements perspective was utilized.

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

FPL uses two system reliability criteria in its resource planning work that addresses generation, purchase, and DSM options. One of these is a minimum 20% Summer and Winter reserve margin. 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 analysis work, 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 Reliability Standards established by the North American Electric Reliability Council (NERC).The *NERC Reliability Standards* are available on the internet (http://www.nerc.com/.)

In addition, FPL has developed a *Facility Connection Requirements* (FCR) document as well as a *Facility Rating Methodology* document that are also available on on the internet https://www.oatioasis.com/FPL /FPLdocs/Nov,2008 Revised FCR.docl.

Generally, FPL limits its transmission facilities to 100% of the applicable thermal rating. In regards to the normal and contingency voltage criteria for FPL stations, it is provided below:

	Normal/Contingency	
Voltage Level (kV)	**Vmin (p.u.)**	**Vmax (p.u.)**
69, 115, 138	0.95/0.95	1.05/1.07
230	0.95/0.95	1.06/1.07
500	0.95/0.95	1.07/1.09
Turkey Point (*)	1.01/1.01	1.06/1.06
St. Lucie (*)	1.00/1.00	1.06/1.06

(*) Voltage range criteria for FPL's Nuclear Power Plants

There may be isolated cases for which FPL may have determined it is acceptable to deviate from the general criteria stated above. There are several factors could influence this criteria, such as the overall potential customers that may be impacted, the probability of an outage actually occurring, or transmission system performance, as well as others.

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 DSM 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. 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.

The Executive Summary chapter provides a discussion of two system concerns that are typically addressed in FPL's resource planning work: (1) maintaining/enhancing fuel diversity in the FPL system, and (2) maintaining a balance between load and generating capacity in Southeastern Florida. In addition, two other relatively recent items will also influence FPL's resource planning efforts. One of these items is the Executive Orders directive issued in 2007 by Governor Crist calling for reduction in greenhouse gas emissions and greater contribution from renewable energy sources. As previously discussed in both the Executive Summary chapter and Chapter III, FPL's resource planning has already taken positive steps in regard to both of these issues. The other item is the appropriate level of renewable energy contributions to a utility system in Florida, an issue that is currently being discussed by the Florida Legislature. The outcome of these discussions regarding Renewable Portfolio Standards (RPS) is not known at the time the 2009 Site Plan is being written. However, once the RPS outcome is known, FPL will take appropriate steps in its resource planning work. Those steps will likely be discussed next year in FPL's 2010 Site Plan.

In addition to these system concerns/issues, there are other strategic factors FPL typically considers when choosing between resource options. These include the following: (1) technology risk; (2) environmental risk, and (3) site feasibility. The consideration of these factors may include both economic and non-economic aspects.

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 different generating technologies and their associated environmental impacts on the FPL system, including environmental compliance costs. Technologies regarded as more acceptable from an environmental perspective for a plan are those which minimize environmental impacts for the FPL system as a whole through highly efficient fuel use and state of the art controls.

Site feasibility assesses a wide range of economic, regulatory, and environmental factors related to successfully developing and operating the specified technology at the site in question. Projects that are more acceptable have sites with few barriers to successful development.

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, elements of FPL's capacity additions include the construction of new generating capacity at the West County Energy Center (WCEC) site, WCEC Units 1, 2, and 3. These generation construction projects were selected after evaluating competing bids received in response to Requests for Proposals (RFP) issued by FPL. The FPSC subsequently approved FPL's decision to construct these new combined cycle (CC) units in Determination of Need dockets.

In regard to the Conversions projects at FPL's existing Cape Canaveral and Riviera plants, the conversion projects were also evaluated using the competing bids received in response to the RFP issued for WCEC Unit 3. In addition, bids from competing vendors were also evaluated for FPL's new solar thermal and PV projects.

The nuclear capacity additions, both the nuclear uprates and the new nuclear units, do not lend themselves to an RFP approach involving bids from third parties who would build new nuclear generation capacity. For these nuclear projects, FPL's procurement activities were conducted to ensure the best combination of quality and cost for the delivered products.

Construction capacity addition decisions for non-nuclear generation for years beyond those presented in this document are expected to be conducted in a manner consistent with the Commission's Bid Rule.

Identification of self-build options, beyond those units already approved by the FPSC and Governor and Siting Board or units for which FPL may be then seeking approval, in future FPL Site Plans will not be an indication that FPL has pre-judged any capacity solicitation it may conduct. The identification of future capacity units is required of FPL in its Site Plan filings and represents those alternatives that appear to be FPL's best, most cost-effective self-build options at the time. FPL reserves the right to refine its planning analyses and to identify other self-build options. Such refined analyses have the potential to yield a variety of

self-build options, some of which might not require an RFP. If an RFP is issued for Supply options, FPL reserves the right to choose the best alternative for its customers, even if that option is not an FPL self-build option.

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

(1) FPL identified the need for a new 230kV transmission line (by June 2009) that required certification under the Transmission Line Siting Act which was issued on April 2006. The new line, when completed, will connect FPL's St. Johns Substation to FPL's proposed Pringle Substation (also shown on Table III.E.1 in Chapter III). 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.

(2) FPL has identified the need for a new 230kV transmission line (by December 2012) that required certification under the Transmission Line Siting Act which was issued on November 2008. The new line will connect FPL's Manatee Substation to FPL's proposed BobWhite Substation (also shown on Table III.E.1 in Chapter III). The construction of this line is necessary to serve existing and future customers in the Manatee and Sarasota areas in a reliable and effective manner.

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