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April 1, 2016

Ms. Carlotta Stauffer, Commission Clerk Florida Public Service Commission 2540 Shumard Oak Boulevard Tallahassee FL 32399-0870

Re: 2016 Ten Year Site Plan

Dear Ms. Stauffer:

Attached for electronic filing is Gulf Power Company's 2016 Ten Year Site Plan filed pursuant to FPSC Rule No. 25-22.071.

Sincerely,

Robert L. M. Son J.

Robert L. McGee, Jr. Regulatory and Pricing Manager

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Attachments

cc: Florida Public Service Commission Carlotta Stauffer, Office of the Commission Clerk (5 copies) Beggs & Lane Jeffrey A. Stone, Esq.

TEN YEAR SITE PLAN 2016-2025

FOR ELECTRIC GENERATING FACILITIES AND ASSOCIATED TRANSMISSION LINES

APRIL 2016



GULF POWER COMPANY TEN YEAR SITE PLAN

FOR ELECTRIC GENERATING FACILITIES AND ASSOCIATED TRANSMISSION LINES

Submitted To The State of Florida Public Service Commission

APRIL 1, 2016

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GULF POWER COMPANY

TEN-YEAR SITE PLAN

Executive Summary

The Gulf Power Company (Gulf) 2016 Ten-Year Site Plan is filed with the Florida Public Service Commission (FPSC) in accordance with the requirements of Chapter 186.801, Florida Statutes, as revised by the Legislature in 1995. The revision designated the FPSC as the state agency responsible for the oversight of the Ten-Year Site Plan (TYSP). Gulf's 2016 TYSP is being filed in compliance with FPSC Rule No. 25-22.071, F.A.C.

Included in Gulf's 2016 TYSP is the documentation of assumptions used for Gulf's load forecast, fuel forecasts, planning processes, existing resources, and future capacity needs and resources. The resource planning process utilized by Gulf to determine its future capacity needs is coordinated within the Southern electric system Integrated Resource Planning (SES IRP) process. Gulf participates in the IRP process along with other Southern electric system retail operating companies, Alabama Power Company, Georgia Power Company, and Mississippi Power Company, (collectively, the "Southern electric system" or SES), and it shares in a number of benefits gained from planning in conjunction with a large system such as the SES. These benefits include the economic sharing of SES generating reserves, the ability to install large, efficient generating units, and reduced requirements for operating reserves.

The capacity resource needs set forth in the SES IRP are driven by the demand forecast that includes the load reduction effects of projected demand-

side measures that are embedded into the forecast prior to entering the generation mix process. The generation mix process uses Strategist® (which utilizes PROVIEW[™]) to screen the available technologies in order to produce a listing of preferred capacity resources from which to select the most cost-effective plan for the system. The resulting SES resource needs are then allocated among the operating companies based on reserve requirements, and each company then determines the resources that will best meet its capacity and reliability needs.

During the 2016 TYSP cycle, Gulf's 885 MW Power Purchase Agreement (PPA) with Shell Energy North America (Shell PPA) will provide firm capacity and energy to serve customers from an existing gas-fired combined cycle generating unit located in Alabama. This PPA resource will serve customers until it expires on May 24, 2023.

In addition to the Shell PPA, Gulf has executed energy purchase agreements with providers of renewable energy generated by municipal solid waste (MSW), solar, and wind facilities. The MSW agreement was approved by the FPSC on December 19, 2014 and provides for the purchase of energy for a three year period ending July 2017 from the existing waste-to-energy facility located in Bay County, Florida. On April 22, 2015, the FPSC approved Gulf's solar energy purchase agreements that provide energy produced by three solar facilities located in Northwest Florida. These agreements each have a term of 25 years. The FPSC approved a wind energy purchase agreement between Gulf and Morgan Stanley Capital Group on May 13, 2015. This agreement has a term

of 20 years. The above mentioned renewable energy purchase agreements are discussed in more detail in the Renewable Resources section of this TYSP.

Gulf has completed the transmission and generation facility projects discussed in Gulf's 2015 TYSP which will enable the Company's coal-fired generating units to comply with emission standards required by the Environmental Protection Agency's (EPA) Mercury and Air Toxics Standards (MATS) rule. Future environmental regulations, including the EPA's Clean Power Plan, continue to be evaluated in order to better understand the potential operational impacts to its remaining generation fleet.

Gulf's diverse fleet of existing coal, natural gas, oil, and renewable generating units that remain in-service following retirement of the coal-fired units at Plant Smith and Plant Scholz, combined with the capacity from the Shell PPA and the wind energy purchase agreement, will enable Gulf to meet its reserve margin requirements until June 2023 of the 2016 TYSP cycle. Although Gulf's peak demand and energy loads for the 2016-2025 planning cycle are forecasted to be slightly lower than the loads discussed in Gulf's 2015 TYSP, the current analysis continues to indicate that combustion turbine capacity (CT) will be needed as early as 2023 in order to provide adequate capacity reserves on its system. Therefore, the schedules in Gulf's 2016 TYSP reflect the addition of CT capacity in June 2023 following the expiration of the 885 MW Shell PPA in May 2023.

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CHAPTER I

DESCRIPTION OF EXISTING FACILITIES

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DESCRIPTION OF EXISTING FACILITIES

Gulf owns and operates generating facilities at five sites in Northwest Florida (Plants Crist, Smith, Scholz, Pea Ridge, and Perdido). Gulf also owns a 50% undivided ownership interest in Unit 1 and Unit 2 at Mississippi Power Company's Daniel Electric Generating Facility. Gulf has a 25% undivided ownership share in Unit 3 and a proportional undivided ownership interest in the associated common facilities at the Scherer Electric Generating Facility located near Macon, Georgia. Gulf's ownership interest in Plant Scherer Unit 3 was acquired as part of its resource planning for meeting the long term needs of its retail customers. With the encouragement and support of the FPSC, Gulf has historically committed its ownership interest in Plant Scherer to off-system sales through a succession of several wholesale power sales contracts since Unit 3 began commercial operation in 1987. As of December 31, 2015, Gulf's fleet of generating units consists of nine fossil steam units, one combined cycle unit, four combustion turbines, and two internal combustion engine units fueled by landfill gas. Schedule 1 shows 924 MW of steam generation located at the Crist Electric Generating Facility near Pensacola, Florida. The Lansing Smith Electric Generating Facility near Panama City, Florida, includes 96 MW of steam generation⁽¹⁾, 556 MW (summer rating) of combined cycle generation, and 32 MW (summer rating) of combustion turbine facilities.

⁽¹⁾ One coal-fired unit on minimum, one coal-fired unit off-line per Florida Department of Environmental Protection's Mercury and Air Toxics Standards deadline extension.

The coal-fired Units 1 and 2 at Plant Smith retired in late March 2016. Gulf's Pea Ridge Facility, in Pace, Florida, consists of three combustion turbines associated with an existing customer's cogeneration facility, which adds 12 MW (summer rating) to Gulf's existing capacity. The Perdido Landfill Gas-to-Energy Facility in Escambia County, Florida provides 3 MW from two internal combustion generating units.

Including Gulf's ownership interest in the Daniel fossil steam Units 1 and 2 and the Scherer fossil steam Unit 3, Schedule 1, as of December 31, 2015, shows Gulf's total net summer generating capability to be 2,348 MW and its total net winter generating capability to be 2,387 MW.

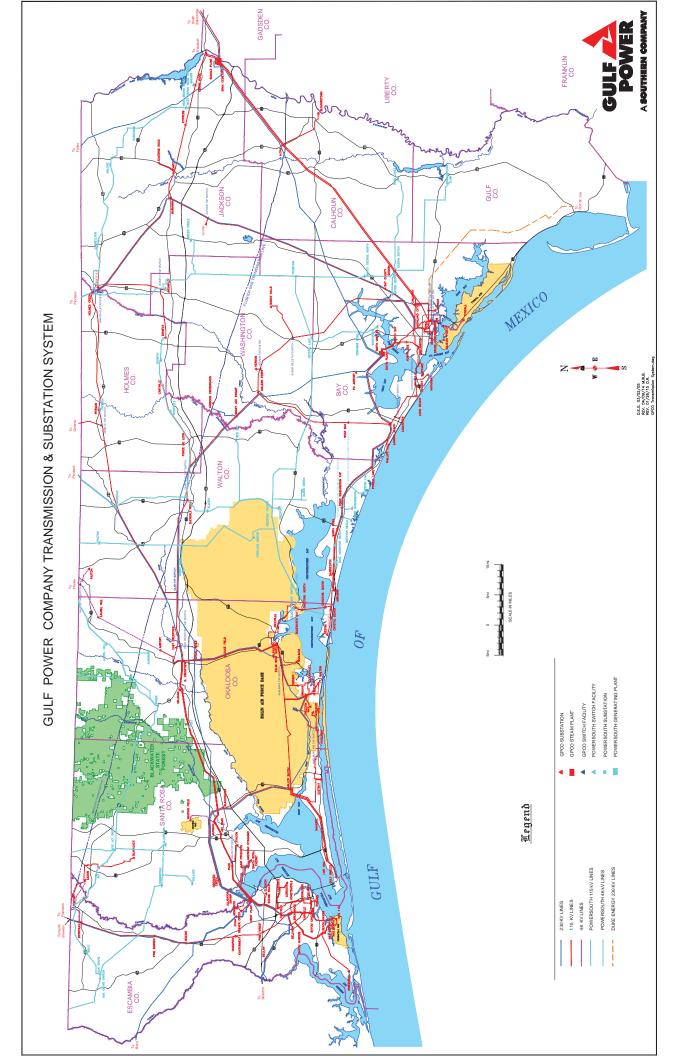
The existing Gulf system in Northwest Florida, including major generating plants, substations, and transmission lines, are shown on the system map on page 8 of this TYSP. Specific data related to Gulf's existing generating facilities is presented on Schedule 1 of this TYSP.

	(14)	oility Winter <u>MW</u>	924.0	75.0 75.0 299.0	4/5.0	720.0	96.0 0.0	584.0 40.0	510.0	255.0 255.0	215.0	15.0	5.0 5.0
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	(12)	Gen Max Nameplate KW	1,135,250	93,750 93,750 369,750	5/8,000	1,001,500	149,600 190,400	619,650 41,850	548,250	274,125 274,125	222,750	14,250	4,750 4,750 4,750
	(11)	Exptd Retrmnt Mo/Yr		12/24 12/26 12/35	12/38		03/16 03/16	12/42 12/27		12/42 12/46	12/52		12/18 12/18 12/18
	(10)	Com'l In- Service Mo/Yr		07/59 06/61 05/70	08/73		06/65 06/67	04/02 05/71		09/77 06/81	01/87		05/98 05/98 05/98
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	(4)	Unit Type		S S S S	р Г	ł	δ S R	5 C		FS	FS		CT CT
	(3)	Location	Escambia County	M06 /N1 /62		Bay County 36/2S/15W			Jackson County, MS		Monroe County, GA	Santa Rosa County	
	(2)	Unit No.		4 VO O I	~		- 0	n ∢		7 7	ю		0 0 -
	(1)	Plant Name	Crist			Lansing Smith ^(A)			Daniel ^(B)		Scherer ^(B)	Pea Ridge	

GULF POWER COMPANY

	(14)	bility Winter <u>MW</u>	3.0	1.5 1.5	2,387					
Page 2 of 2	(13)	Net Capability Summer Wint <u>MW</u> MV	<u>3.0</u>	1.5 1.5	2,348					
	(12)	Gen Max Nameplate KW	3,200.0	1,600.0 1,600.0	Total System					
	(11)	Exptd Retrmnt Mo/Yr		12/29 12/29	Ĕ		tion		partment of	25%)
	(10)	Com'l In- Service Mo/Yr		10/10 10/10			Fuel Transportation	PL - Pipeline WA - Water TK - Truck RR - Railroad	per Florida Del	Gult's portion of Daniel Units 1 & 2 (50%) and Scherer Unit 3 (25%)
	(6)	Alt. Fuel Use		: :			шI		unit off-line	50%) and S
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	(4)	Unit Type		<u>ں ں</u>				u u	ed unit dera ion MATS D	nown renres
	(3)	Location	Escambia County				Type and Fuel	FS - Fossil Steam CT - Combustion Turbine CC - Combined Cycle NG - Natural Gas C - Coal LO - Light Oil HO - Heavy Oil IC - Internal Combustion LFG - Landfill Gas	(A) One Smith coal-fired unit derated to minimum load and one coal-fired unit off-line per Florida Department of Environmental Protection MATS Deadline Extension.	(B) Unit capabilities shown represent
	(2)	Unit No.		<i>⊢</i> 0		Abbreviations:			NOTES:	
	(1)	Plant Name	Perdido LFG			Abb				

(B) Unit capabilities shown represent Gulf's portion of Daniel Units 1 & 2 (50%) and Scherer Unit 3 (25%)



CHAPTER II

FORECAST OF ELECTRIC POWER DEMAND AND ENERGY CONSUMPTION This page is intentionally blank.

GULF POWER COMPANY FORECASTING METHODOLOGY OVERVIEW

Gulf views the forecasting effort as a dynamic process requiring ongoing activities to yield results that allow informed planning and decision-making. The total forecast is an integration of different techniques and methodologies, each applied to the task for which it is best suited. Many of the techniques take advantage of the extensive data made available through the Company's customer service efforts. These efforts are predicated on the philosophy of knowing and understanding the needs, perceptions, and motivations of its customers while actively promoting wise and efficient uses of energy to satisfy customer needs. Gulf has been a pacesetter in the energy efficiency market since the development and implementation of the GoodCents Home program in the mid-70s. This program brought high levels of customer awareness, understanding, and expectations of energy efficient construction standards to Northwest Florida.

The Forecasting section of Gulf's Accounting, Finance, and Treasury Department is responsible for preparing forecasts of customers, energy, and peak demand. A description of the assumptions and methods used in the development of these forecasts follows.

I. ASSUMPTIONS

A. <u>ECONOMIC OUTLOOK</u>

The economic assumptions used to develop Gulf's forecast of customers, energy sales, and peak demand for this Ten Year Site Plan were derived from the October 2015 economic projection provided by Moody's Analytics.

The October 2015 economic projection assumed the Federal Reserve would begin normalizing monetary policy in December of 2015. U.S. real gross domestic product (GDP) was expected to grow 3.2% in both 2016 and 2017. The U.S. economy was projected to reach full employment by mid-2016 with wage growth following.

B. NORTHWEST FLORIDA ECONOMIC OUTLOOK

Gulf's retail service area is generally represented by three Metropolitan Statistical Areas (MSAs): Pensacola-Ferry Pass-Brent, Crestview-Fort Walton Beach-Destin, and Panama City. Moody's projected that the economy in Northwest Florida would continue to improve and return to a healthy state by early 2016 and sustain normal growth throughout the forecast period.

Northwest Florida's real disposable personal income increased 2.7% in 2014 and 2.6% in 2015, compared to an average annual growth rate of 0.4% for the period 2010 to 2013. Real disposable personal income was projected to grow over the next five years at an average annual rate of 2.7%. The region's employment bottomed out in late 2009 to early 2010, but since then has shown positive year over year growth with an increase of 2.0% in 2015. Employment

was projected to grow at an average annual rate of 1.5% over the next five years. Single family housing starts have shown modest improvements since 2009 and were projected to return to more normal levels by 2016. Population growth in Northwest Florida was 1.5% in 2015 and was projected to maintain an average annual rate of 1.7% for the next five years. Over the long-run, Northwest Florida was projected to see steady growth throughout the forecast period.

Gulf's projections incorporate electric price assumptions derived from the 2015 Gulf Power Official Long-Range Forecast. Fuel price projections for gas and oil are developed by Southern Company Services (SCS) Fuel Services staff with input from outside consultants. The following tables provide a 5-year summary of assumptions associated with Gulf's forecast:

TABLE 1

NATIONAL ECONOMIC SUMMARY AVERAGE ANNUAL GROWTH RATES (2015-2020)

GDP Growth	2.5 %
Interest Rate (30 Year AAA Bonds)	4.5 %
Inflation	2.6 %

TABLE 2

AREA DEMOGRAPHIC SUMMARY (2015-2020)

Population Gain	81,700
Average Annual Net Migration	3,400
Average Annual Population Growth	1.7 %
Average Annual Labor Force Growth	2.0 %

II. CUSTOMER FORECAST

A. <u>RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL CUSTOMER</u> FORECAST

The short-term forecasts of residential, commercial, and industrial nonlighting customers were based primarily on projections prepared by Gulf's field marketing managers with the assistance of their field employees. These projections reflect recent historical trends in net customer gains and anticipated effects of changes in the local economy, the real estate market, planned construction projects, and factors affecting population such as military personnel movements and changes in local industrial production.

After collecting initial input from field managers, forecasters reviewed the one-year-out customer projections by rate schedule, checking for consistency with historical trends, consistency with economic outlooks, and consistency across the three MSAs in Gulf's service area. Forecasters then supplied field managers with draft second-year-out customer projections based on number of households from Moody's Analytics, which the field managers reviewed and modified as necessary.

Gulf utilized growth in the number of households to extend the short-term residential forecast of customers to the long-term horizon. Beyond the short-term period, commercial customers were forecast as a function of residential customers, reflecting the growth of commercial services to meet the needs of new residents. Long-term projections of industrial customers are based on input from Gulf's field marketing managers.

B. OUTDOOR LIGHTING CUSTOMER FORECAST

Gulf projected the number of outdoor lighting customers by rate and class based on historical growth rates and input from Gulf's lighting team to gain insight into future trends.

III. ENERGY SALES FORECAST

A. <u>RESIDENTIAL SALES FORECAST</u>

The short-term non-lighting residential energy sales forecast was developed utilizing a multiple linear regression analysis. Monthly use per customer per billing day was estimated based on historical data, normal weather, real disposable income per household, national energy efficiency standards, and price of electricity. The model output was then multiplied by the projected number of non-lighting residential customers and projected billing days by month to expand to the total residential class.

Long-term projections of residential sales were developed utilizing the LoadMAP-R model, an electric utility end-use forecasting tool. LoadMAP-R forecasts end-use or appliance-specific residential energy demand using a variety of demographic, housing, economic, energy, and weather information. Gulf utilized growth rates from the LoadMAP-R projection to extend the shortterm residential sales forecast to the long-term horizon.

The residential sales forecast was adjusted to reflect the expected impacts of conservation programs approved in Gulf's 2015 DSM plan. Additional information on the residential conservation programs and program features are provided in the <u>Conservation Programs</u> section of this document. The residential sales forecast was also adjusted to reflect the anticipated impact of the introduction of electric vehicles to the market.

B. <u>COMMERCIAL SALES FORECAST</u>

The short-term non-lighting commercial energy sales forecast was also developed utilizing multiple linear regression analyses. The energy forecast for the commercial class was separated into two segments, small commercial (rate schedules GS and Flat-GS) and large commercial (all other commercial rate schedules). Separate models were developed for each segment to estimate monthly use per customer per billing day. The estimates were based upon historical data, normal weather, MSA-level GDP per capita, and price of electricity. The outputs from each model were multiplied by the projected number of customers in each segment and the projected number of billing days by month. The forecast for the commercial class is the sum of the forecasted energy sales for each segment.

Long-term projections of commercial sales were developed utilizing the LoadMAP-C model, an electric utility end-use forecasting tool that provides a conceptual framework for organizing commercial market building-type and enduse information. Gulf utilized growth rates from the LoadMAP-C projection to extend the short-term commercial sales forecast to the long-term horizon.

The commercial sales forecast was adjusted to reflect the expected impacts of conservation programs approved in Gulf's 2015 DSM plan. Additional information on the commercial conservation programs and program features are provided in the <u>Conservation Programs</u> section of this document.

C. INDUSTRIAL SALES FORECAST

The short-term non-lighting industrial energy sales forecast was developed using a combination of on-site surveys of major industrial customers and historical average consumption per customer per billing day. Gulf's largest interviewed Gulf's industrial customers were by industrial account representatives to identify expected load changes due to equipment additions, replacements, or changes in operating schedules and characteristics. The shortterm forecast of monthly sales to these major industrial customers was a synthesis of the detailed survey information and historical monthly to annual energy ratios.

The forecast of sales to the remaining smaller industrial customers was developed by rate schedule and month, using historical averages. The resulting estimates of energy purchases per customer per billing day were multiplied by the expected number of small industrial customers and projected billing days by month to expand to the rate level totals. The sum of the energy sales forecast for the major industrial customers and the remaining smaller industrial customers resulted in the total industrial energy sales forecast. Long-term projections of industrial sales were developed using historical averages.

D. OUTDOOR LIGHTING SALES FORECAST

Outdoor lighting energy forecasts were developed by rate and class using historical growth rates and input from Gulf's lighting team to gain insight into future trends.

E. WHOLESALE ENERGY FORECAST

The forecast of territorial wholesale energy sales was developed utilizing a multiple linear regression analysis. Monthly wholesale energy purchases per day were estimated based on historical data, normal weather, and MSA-level GDP. The model output was then multiplied by the projected number of days by month to expand to the total wholesale energy forecast.

F. <u>COMPANY USE FORECAST</u>

The forecast of company energy use was based on recent historical averages by month.

IV. PEAK DEMAND FORECAST

The annual system peak demand forecast was prepared using the Peak Demand Model (PDM). PDM inputs include historical load shapes and projections of net energy for load, which were based on the forecasted energy sales described previously. PDM spreads the energy projections using the historical load shapes to develop hourly system load shapes. The monthly forecasted system peak demands are the single highest hour of demand for each month. Gulf's annual system peak demand typically occurs in the month of July.

The resulting monthly system peak demand projections were adjusted to reflect the anticipated impacts of conservation programs approved in Gulf's 2015 DSM plan. Additional information on the peak demand impacts of Gulf's conservation programs are provided in the <u>Conservation Programs</u> section of this document.

V. DATA SOURCES

Gulf utilized historical customer, energy and revenue data by rate and class, and historical hourly load data coupled with weather information from the National Oceanic and Atmospheric Administration (NOAA) to support the energy and demand models. Individual customer historical data was utilized in developing projections for Gulf's largest industrial customers.

Gulf's models also utilized economic projections provided by Moody's Analytics, a renowned economic services provider. Moody's relies on the Bureau of Labor Statistics for data on employment, unemployment rate and labor force. Moody's obtains personal income and GDP data from the Bureau of Economic Analysis. Moody's obtains population, households and housing starts information from the U.S. Census Bureau.

VI. CONSERVATION PROGRAMS

Gulf's forecast of energy sales and peak demand reflect the continued impacts of energy efficiency and conservation activities, including the impacts of programs proposed by Gulf in its most recent DSM plan, which was approved by the Commission in Order No. PSC-15-0330-PAA-EG on August 19, 2015. Gulf's conservation programs were designed to meet the goals established by the Commission in Order No. PSC-14-0696-FOF-EU in December 16, 2014. Following is a brief description of the currently approved programs and tables indicating the historical and projected conservation impacts of Gulf's ongoing conservation efforts.

A. <u>RESIDENTIAL CONSERVATION</u>

- <u>Residential Energy Audit and Education</u> This program is the primary educational program to help customers improve the energy efficiency of their new or existing home through energy conservation advice and information that encourages the implementation of efficiency measures and behaviors resulting in energy and utility bill savings.
- <u>EnergySelect</u> This program is designed to provide the customer with a means of conveniently and automatically controlling and monitoring energy purchases in response to prices that vary during the day and by season in relation to Gulf's cost of producing or purchasing energy. The

EnergySelect system includes field units utilizing a communication gateway, major appliance load control relays, and a programmable thermostat, all operating at the customer's home.

- 3. <u>Community Energy Saver Program</u> This program is designed to assist low-income families with escalating energy costs through the direct installation of conservation measures at no cost to them. The program will also educate families on energy efficiency techniques and behavioral changes to help control their energy use and reduce their utility operating costs.
- <u>HVAC Efficiency Improvement Program</u> This program is designed to increase energy efficiency and improve HVAC cooling system performance for new and existing homes through maintenance, quality installation, and duct repair.
- 5. <u>Residential Custom Incentive Program</u> This program will promote the installation of various energy efficiency measures available through other programs including HVAC, insulation, windows, water heating, lighting, appliances, etc. including additional incentives as appropriate to overcome the splitincentive barrier which exists in a landlord/renter situation.
- <u>Residential Building Efficiency Program</u> This program is designed as an umbrella efficiency program to promote the purchase and installation of energy saving measures – high

performance windows, reflective roofs, and ENERGY STAR window A/C - for residential customers as a means of reducing energy and demand.

B. <u>COMMERCIAL/INDUSTRIAL CONSERVATION</u>

- <u>Commercial/Industrial (C/I) Energy Analysis</u> This is an interactive program that provides commercial and industrial customers assistance in identifying energy conservation opportunities. The program is a prime tool for the Gulf Power Company C/I Energy Specialists to personally introduce a customer to conservation measures, including low or no-cost improvements or new electro-technologies to replace old or inefficient equipment.
- <u>Commercial HVAC Retrocommissioning Program</u> This program offers basic retrocommissioning at a reduced cost for qualifying commercial and industrial customers designed to diagnose the performance of the HVAC cooling unit(s) with the support of an independent computerized quality control process and make improvements to the system to bring it to its full efficiency.
- <u>Commercial Building Efficiency Program</u> This program is designed as an umbrella efficiency program for existing commercial and industrial customers to increase awareness and

customer demand for high-efficiency, energy-saving equipment; increase availability and market penetration of energy efficient equipment; and contribute toward long-term energy savings and peak demand reductions.

 <u>Commercial/Industrial Custom Incentive</u> - This program is designed to establish the capability and process to offer advanced energy services and energy efficient end-user equipment (including comprehensive audits, design, and construction of energy conservation projects) not offered through other programs to Commercial or Industrial customers.

C. CONSERVATION RESULTS SUMMARY

The following tables provide estimates of the reductions in peak demand and net energy for load realized by Gulf's customers as a result of participation in Gulf's conservation programs.

HISTORICAL TOTAL CONSERVATION PROGRAMS CUMULATIVE ANNUAL REDUCTIONS AT GENERATOR

SUMMER	WINTER	NET ENERGY
PEAK	PEAK	FOR LOAD
(KW)	(KW)	(KWH)

2015	487,484	547,262	1,069,853,000

2016 BUDGET FORECAST TOTAL CONSERVATION PROGRAMS INCREMENTAL ANNUAL REDUCTIONS AT GENERATOR

	SUMMER PEAK (KW)	WINTER PEAK (KW)	NET ENERGY FOR LOAD (KWH)
2016	5,722	3,660	7,558,302
2017	6,061	3,802	8,293,586
2018	6,574	3,976	9,399,710
2019	7,141	5,510	10,502,833
2020	8,026	6,593	11,783,649
2021	8,828	7,620	12,862,948
2022	9,583	8,626	13,829,154
2023	10,292	9,627	14,693,193
2024	10,971	10,620	15,493,316
2025	10,971	10,620	15,493,316

2016 BUDGET FORECAST TOTAL CONSERVATION PROGRAMS CUMULATIVE ANNUAL REDUCTIONS AT GENERATOR

	SUMMER PEAK	WINTER PEAK	NET ENERGY FOR LOAD
	,	/	
	(KW)	(KW)	(KWH)
2016	493,206	550,922	1,077,411,302
2017	499,267	554,724	1,085,704,888
2018	505,841	558,699	1,095,104,598
2019	512,982	564,209	1,105,607,431
2020	521,009	570,802	1,117,391,080
2021	529,836	578,422	1,130,254,028
2022	539,419	587,048	1,144,083,182
2023	549,711	596,676	1,158,776,375
2024	560,682	607,296	1,174,269,691
2025	571,653	617,916	1,189,763,006

HISTORICAL RESIDENTIAL CONSERVATION CUMULATIVE ANNUAL REDUCTIONS AT GENERATOR

SUMMER	WINTER	NET ENERGY
PEAK	PEAK	FOR LOAD
(KW)	(KW)	(KWH)

2015	259.304	372.127	642,442,000
2013	200,004	JIZ, IZI	042,442,000

2016 BUDGET FORECAST RESIDENTIAL CONSERVATION INCREMENTAL ANNUAL REDUCTIONS AT GENERATOR

	SUMMER	WINTER	NET ENERGY
	PEAK	PEAK	FOR LOAD
	(KW)	(KW)	(KWH)
2016	4,743	3,541	5,462,964
2017	5,026	3,638	6,069,650
2018	5,521	3,804	7,148,870
2019	6,028	5,320	8,166,015
2020	6,834	6,367	9,267,558
2021	7,533	7,363	10,131,650
2022	8,174	8,337	10,853,640
2023	8,772	9,299	11,479,753
2024	9,342	10,252	12,041,950
2025	9,342	10,252	12,041,950

2016 BUDGET FORECAST RESIDENTIAL CONSERVATION CUMULATIVE ANNUAL REDUCTIONS AT GENERATOR

	SUMMER	WINTER	NET ENERGY
	PEAK	PEAK	FOR LOAD
	(KW)	(KW)	(KWH)
2016	264,047	375,668	647,904,964
2017	269,073	379,306	653,974,614
2018	274,594	383,110	661,123,484
2019	280,622	388,431	669,289,499
2020	287,456	394,798	678,557,057
2021	294,989	402,160	688,688,707
2022	303,163	410,498	699,542,347
2023	311,936	419,796	711,022,100
2024	321,277	430,049	723,064,050
2025	330,619	440,301	735,106,000

HISTORICAL COMMERCIAL/INDUSTRIAL CONSERVATION CUMULATIVE ANNUAL REDUCTIONS AT GENERATOR

SUMMER	WINTER	NET ENERGY
PEAK	PEAK	FOR LOAD
(KW)	(KW)	(KWH)

2015	228,180	175,135	427,411,000

2016 BUDGET FORECAST COMMERCIAL/INDUSTRIAL CONSERVATION INCREMENTAL ANNUAL REDUCTIONS AT GENERATOR

	SUMMER	WINTER	NET ENERGY
	PEAK	PEAK	FOR LOAD
	(KW)	(KW)	(KWH)
2016	979	119	2,095,338
2017	1,035	164	2,223,936
2018	1,053	171	2,250,840
2019	1,113	189	2,336,818
2020	1,192	226	2,516,091
2021	1,295	257	2,731,298
2022	1,408	289	2,975,515
2023	1,519	329	3,213,440
2024	1,630	368	3,451,365
2025	1,630	368	3,451,365

2016 BUDGET FORECAST COMMERCIAL/INDUSTRIAL CONSERVATION CUMULATIVE ANNUAL REDUCTIONS AT GENERATOR

	SUMMER PEAK (KW)	WINTER PEAK (KW)	NET ENERGY FOR LOAD (KWH)
2016	229,159	175,254	429,506,338
2017	230,194	175,418	431,730,274
2018	231,247	175,589	433,981,115
2019	232,360	175,778	436,317,932
2020	233,553	176,005	438,834,023
2021	234,847	176,261	441,565,321
2022	236,256	176,551	444,540,835
2023	237,775	176,879	447,754,276
2024	239,405	177,247	451,205,641
2025	241,035	177,615	454,657,006

VII. SMALL POWER PRODUCTION / RENEWABLE ENERGY

Gulf's 2015 DSM Plan does not have any small power production programs that affect the forecast.

Please refer to the Renewable Resources section of this TYSP for additional information concerning Gulf's efforts to promote and develop supplyside renewable energy resources. GULF POWER COMPANY

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

(6)		Average KWH	Consumption Per Customer	71,862	73,821	73,610	72,942	74,912	73,235	71,846	70,215	70,104	70,566	69,797	69,949	70,232	70,479	70,422	70,296	70,449	70,742	71,117	71,301		-0.2%	0.0%	0.1%
(8)	Commercial	Average	Customers	53,479	53,791	53,810	53,414	53,349	53,409	53,706	54,261	54,749	55,234	55,835	56,376	56,852	57,277	57,625	57,890	58,128	58,367	58,606	58,843		0.4%	0.9%	0.6%
(2)			GWH	3,843	3,971	3,961	3,896	3,997	3,911	3,859	3,810	3,838	3,898	3,897	3,943	3,993	4,037	4,058	4,069	4,095	4,129	4,168	4,196		0.2%	0.8%	0.7%
(9)		Average KWH	Per Customer	15,032	14,755	14,274	14,049	15,036	14,028	13,303	13,301	13,865	13,705	13,358	13,343	13,326	13,343	13,275	13,169	13,064	13,045	13,065	12,989		-1.0%	-0.6%	-0.5%
(2)	ential	Average	Customers	360,930	371,213	374,709	374,010	375,847	378,157	379,897	382,599	386,765	391,465	395,467	401,542	407,810	413,423	418,009	421,523	424,681	427,840	430,998	434,138		0.9%	1.3%	1.0%
(4)	Rural and Residentia		ВWН	5,425	5,477	5,349	5,254	5,651	5,305	5,054	5,089	5,362	5,365	5,282	5,358	5,434	5,516	5,549	5,551	5,548	5,581	5,631	5,639		-0.1%	0.7%	0.5%
(3)	R	Members	per Household*	2.57	2.56	2.55	2.55	2.54	2.55	2.55	2.54	2.54	2.53	2.52	2.51	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.49		-0.2%	-0.2%	-0.1%
(2)			Population*	859,890	860,260	863,080	866,520	872,760	882,080	899,870	914,410	928,620	942,670	957,700	973,840	990,580	1,007,560	1,024,530	1,040,990	1,057,030	1,072,880	1,088,600	1,104,080		1.0%	1.7%	1.6%
(1)			Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	CAAG	06-15	15-20	15-25

* Historical and projected figures include Pensacola, Crestview, and Panama City MSAs

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Schedule 2.2

History and Forecast of Energy Consumption and Number of Customers by Customer Class

Fotal Sales to Ultimate Consumers 11,429 11,521 11,521 10,903 11,359 11,040 11,040 11,0620 11,075 11,075 10,907 11,023 11,147 11,272 11,326 11,326 11,339 11,428 11,553 11,553 GWH -0.3% 0.4% 0.4% 8 Other Sales to Public Authorities GWH 0.0% 0.0% 0.0% 6 0 0000 000000000 000000 Highway Lighting GWH Street & -4.0% -2.0% 0.6% 9 24 22 22 23 23 23 25 25 25 25 25 25 25 25 25 24 23 and Railways Railroads GWH 0.0% 0.0% 0.0% (2)0 000000 0 0 0 00000 0 Average KWH Consumption Per Customer 7,165,343 7,235,499 7,260,626 6,769,670 7,592,204 6,785,229 6,164,567 6,133,961 6,586,591 6,581,320 6,710,779 6,710,779 6,710,779 6,712,534 6,710,779 6,710,779 6,710,779 6,453,071 6,712,534 6,710,779 0.0% -1.5% -0.8% 4 Industrial Customers Average No. of -1.9% 0.4% 0.2% 280 275 273 267 267 267 258 258 258 258 294 303 (3) 291 -1.1% -0.6% 1,703 1,698 1,698 1,698 1,698 1,698 -1.9% 2,136 2,048 2,211 1,727 1,686 1,799 1,700 1,849 1,798 1,698 1,698 1,698 GWH 5 CAAG 06-15 15-20 Year 2005 2007 2008 2009 2010 2011 2011 2012 2013 2013 2015 2015 2016 2017 2018 2019 2019 2021 2021 2021 2023 2023 2023 15-25 2025 Ē

GULF POWER COMPANY

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

(9)	Total	No. of	Customers	415,185	425,793	429,302	428,206	430,030	432,403	434,441	437,698	442,370	447,557	452,163	458,781	465,525	471,564	476,497	480,277	483,673	487,070	490,467	493,845		0.8%	1.3%	1.0%	
(5)	Other	Customers	(Average No.)	482	486	493	502	559	564	572	579	598	610	610	610	610	610	610	610	610	610	610	610		2.6%	0.0%	0.0%	
(4)	Net Energy	for Load	GWH	12,586	12,671	12,617	11,975	12,518	12,086	11,598	11,552	12,052	11,996	11,854	11,985	12,125	12,263	12,326	12,343	12,371	12,445	12,544	12,583		-0.5%	0.5%	0.5%	
(3)	Utility Use	& Losses	GWH	743	733	676	682	750	663	597	602	645	580	616	623	630	637	640	641	642	646	651	653		-2.7%	2.0%	1.2%	
(2)	Sales for	Resale	GWH	415	417	398	390	409	382	339	330	332	330	330	339	348	354	360	363	367	370	375	377		-2.5%	1.7%	1.4%	
(1)			Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	CAAG	06-15	15-20	15-25	

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Schedule 3.1 History and Forecast of Summer Peak Demand - MW

Base Case

(10)	Net Firm	2,483	2,634	2,541	2,546	2,525	2,535	2,351	2,362	2,437	2,495	2,450	2,491	2,520	2,546	2,552	2,554	2,554	2,564	2,576	2,586		0.1%	0.5%	0.4%
(6)	Comm/Ind	<u>201351 20101</u> 173	180	182	186	192	198	212	220	224	228	229	230	231	232	234	235	236	238	239	241		3.1%	0.5%	0.5%
(8)	Comm/Ind Load Management		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0.0%	0.0%	0.0%
(2)	Residential	<u>2011361 VALIOLI</u> 171	175	176	177	178	186	206	229	243	259	264	269	275	281	287	295	303	312	321	331		4.7%	2.1%	2.5%
(9)	Residential Load		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0.0%	0.0%	0.0%
(2)	ntarri intibla		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0.0%	0.0%	0.0%
(4)	Rotail	2,734	2,891	2,807	2,817	2,807	2,830	2,693	2,736	2,830	2,904	2,874	2,919	2,954	2,986	2,999	3,009	3,018	3,038	3,060	3,080		0.7%	0.6%	0.6%
(3)	alcsalod/M	<u>93</u>	66	91	92	88	89	76	74	75	78	69	71	72	73	74	75	76	76	77	77		-1.9%	-1.1%	-0.1%
(2)	Lator	2,828	2,989	2,898	2,909	2,896	2,919	2,769	2,810	2,905	2,982	2,943	2,990	3,026	3,059	3,073	3,084	3,093	3,114	3,137	3,158		0.6%	0.6%	0.6%
(1)	Voor Voor	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	CAAG	06-15	15-20	15-25

NOTE: Wholesale and total columns include contracted capacity allocated to certain Resale customers by Southeastern Power Administration (SEPA).

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Schedule 3.2 History and Forecast of Winter Peak Demand - MW Base Case

(10)	Net Firm	Demand	2,072	2,224	2,370	2,320	2,553	2,495	2,139	1,766	2,694	2,492	2,124	2,153	2,177	2,205	2,210	2,210	2,209	2,215	2,223	2,230		2.1%	-2.4%	-1.1%
(6)	Comm/Ind	Conservation	142	146	147	150	154	157	165	169	172	175	175	175	176	176	176	176	177	177	177	178		2.4%	0.1%	0.1%
(8)	Comm/Ind Load	Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0.0%	0.0%	0.0%
(2)	Residential	Conservation	262	275	276	287	289	297	317	341	356	372	376	379	383	388	395	402	410	420	430	440		4.0%	1.2%	1.7%
(9)	Residential Load	Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0.0%	0.0%	0.0%
(5)		Interruptible	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0.0%	0.0%	%0.0
(4)		Retail	2,382	2,554	2,696	2,659	2,890	2,851	2,532	2,205	3,132	2,954	2,603	2,634	2,660	2,692	2,702	2,709	2,716	2,731	2,748	2,765		2.4%	-1.8%	-0.7%
(3)		Wholesale	94	91	97	98	107	66	89	20	06	85	72	74	76	77	79	80	80	81	82	83		-1.1%	-1.5%	-0.3%
(2)		Total	2,476	2,644	2,793	2,757	2,996	2,950	2,621	2,275	3,223	3,039	2,675	2,708	2,736	2,769	2,781	2,788	2,796	2,812	2,830	2,848		2.3%	-1.8%	-0.6%
(1)		Year	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	CAAG	06-15	15-20	15-25

NOTE: Wholesale and total columns include contracted capacity allocated to certain Resale customers by Southeastern Power Administration (SEPA).

GULF POWER COMPANY

Schedule 3.3

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

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~	Load	Factor %	57.9%	54.9%	56.5%	53.7%	56.0%	54.4%	56.2%	55.8%	51.1%	54.9%	55.1%	54.9%	54.9%	55.0%	55.0%	55.2%	55.3%	55.4%	55.4%	55.5%		-0.6%	%0.0	0.1%
~	Net Energy	<u>for Load</u>	12,586	12,671	12,617	11,975	12,518	12,086	11,598	11,552	12,052	11,996	11,854	11,985	12,125	12,263	12,326	12,343	12,371	12,445	12,544	12,583		-0.5%	0.5%	0.5%
~	Utility Use	<u>& Losses</u>	743	733	676	682	750	663	597	602	645	580	616	623	630	637	640	641	642	646	651	653		-2.7%	2.0%	1.2%
~		<u>Wholesale</u>	415	417	398	390	409	382	339	330	332	330	330	339	348	354	360	363	367	370	375	377		-2.5%	1.7%	1.4%
~		Retail	11,429	11,521	11,543	10,903	11,359	11,040	10,663	10,620	11,075	11,086	10,907	11,023	11,147	11,272	11,326	11,339	11,361	11,428	11,518	11,553		-0.3%	0.4%	0.4%
~	Comm/Ind	Conservation	322	327	331	345	350	361	374	399	416	427	430	432	434	436	439	442	445	448	451	455		3.2%	0.5%	0.6%
~	Residential	Conservation	365	375	378	384	388	417	482	551	595	642	648	654	661	669	679	689	200	711	723	735		6.5%	1.1%	1.4%
		Total	13,273	13,373	13,326	12,704	13,256	12,864	12,453	12,502	13,064	13,066	12,931	13,071	13,220	13,369	13,444	13,473	13,515	13,604	13,718	13,773		-0.2%	0.6%	0.5%
~		Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	CAAG	06-15	15-20	15-25

NOTE: Wholesale and total columns include contracted capacity and energy allocated to certain Resale customers by Southeastern Power Administration (SEPA).

GULF POWER COMPANY

Schedule 4

Previous Year Actual and Two Year Forecast of Peak Demand and Net Energy for Load by Month

(2)		ast	NEL	GWH	948	813	828	823	1,056	1,198	1,301	1,270	1,133	923	782	606
(9)	2017	Forecast	Peak Demand	MM	2,153	1,970	1,658	1,711	2,213	2,346	2,491	2,364	2,229	2,030	1,564	1,958
(5)	0	ast	NEL	GWH	936	824	810	812	1,022	1,182	1,279	1,266	1,109	912	800	901
(4)	2016	Forecast	Peak Demand	MM	2,124	1,996	1,619	1,687	2,137	2,312	2,450	2,355	2,179	2,001	1,602	1,943
(3)	D	al	NEL	GWH	948	896	830	874	1,053	1,184	1,326	1,267	1,074	893	820	831
(2)	2015	Actu	Peak Demand	MM	2,492	2,230	1,914	1,729	2,086	2,408	2,495	2,420	2,297	1,876	1,790	1,483
(1)			1	<u>Month</u>	January	February	March	April	May	June	July	August	September	October	November	December

NOTE: Includes contracted capacity and energy allocated to certain Resale customers by Southeastern Power Administration (SEPA)

Gulf Power Company

Schedule 5 Fuel Requirements

(16)	2025	None	4,528	00	None	None	None	9	9	None	0	None	14,602	0	9,292	5,310	240
(15)	2024	None	4,304	00	None	None	None	80	8	None	0	None	11,809	0	9,830	1,979	240
(14)	2023	None	4,252	00	None	None	None	7	7	None	0	None	16,987	0	16,051	936	240
(13)	2022	None	3,901	00	None	None	None	6	൭	None	0	None	31,275	0	31,275	0	240
(12)	2021	None	3,633	00	None	None	None	0	б	None	0	None	30,593	0	30,593	0	240
(11)	2020	None	3,437	00	None	None	None	11	11	None	0	None	33,010	0	33,010	0	240
(10)	2019	None	2,840	00	None	None	None	11	11	None	0	None	60,144	0	60,144	0	240
(6)	2018	None	2,745	00	None	None	None	10	10	None	0	None	67,987	0	66,791	1,196	240
(8)	2017	None	2,205	00	None	None	None	12	12	None	0	None	70,773	0	69,577	1,196	240
(2)	2016	None	1,747	00	None	None	None	10	10	None	0	None	64,188	0	62,989	1,199	240
(9)	Actual 2015	None	2,490	00	None	None	None	19	17	None	2	None	54,704	383	53,333	988	258
(5)	Actual 2014	None	3,678	00	None	None	None	25	17	None	8	None	58,285	514	57,464	307	259
(4)	Units	Trillion BTU	1000 TON	1000 BBL 1000 BBL	1000 BBL	1000 BBL	1000 BBL	1000 BBL	1000 BBL	1000 BBL	1000 BBL	1000 BBL	1000 MCF	1000 MCF	1000 MCF	1000 MCF	1000 MCF
(3)	lirements			Total Steam	ပ ပ	СТ	Diesel	Total	Steam	00 00	СТ	Diesel	Total	Steam	00	СТ	
(2)	Fuel Requirements	Nuclear	Coal	Residual				Distillate					Natural Gas				(17) Other ^(A)
(1)		(1)	(2)	(3)	(2)	(9)	(2)	(8)	(6)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)

(A) Perdido Units' landfill gas burn included in Other

GULF POWER COMPANY

Schedule 6.1 Energy Sources

(16)	2025	(1,023)	None	10,687	00	None	None	0.0	None	None	0.0	None	1,828	0	1,302	526	1,091	12,583
(15)	2024	(266)	None	10,140	00	None	None	0.0	None	None	0.0	None	1,579	0	1,383	196	1,091	12,544
(14)	2023	(066)	None	10,027	00	None	None	0.0	None	None	0.0	None	2,321	0	2,228	93	1,087	12,445
(13)	2022	(2,180)	None	9,175	00	None	None	0.0	None	None	0.0	None	4,291	0	4,291	0	1,085	12,371
(12)	2021	(1,467)	None	8,524	00	None	None	0.0	None	None	0.0	None	4,202	0	4,202	0	1,084	12,343
(11)	2020	(1,364)	None	8,053	00	None	None	0.0	None	None	0.0	None	4,553	0	4,553	0	1,084	12,326
(10)	2019	(3,780)	None	6,591	00	None	None	0.0	None	None	0.0	None	8,372	0	8,372	0	1,080	12,263
(6)	2018	(4,673)	None	6,357	00	None	None	0.0	None	None	0.0	None	9,362	0	9,281	81	1,079	12,125
(8)	2017	(3,899)	None	5,102	00	None	None	0.0	None	None	0.0	None	9,683	0	9,602	81	1,099	11,985
(2)	2016	(1,799)	None	4,036	00	None	None	0.0	None	None	0	None	8,746	0	8,664	82	871	11,854
(9)	Actual 2015	(803)	None	4,876	00	None	None	0.8	None	None	0.8	None	7,787	23	7,697	67	235	11,996
(2)	Actual 2014	(3,760)	None	7,394	00	None	None	0.9	None	None	0.9	None	8,207	24	8,107	76	210	12,052
(4)	Units	GWH	GWH	GWH	GWH GWH	GWH GWH	GWH	GWH	GWH	GWH	GWH	GWH	GWH	GWH	GWH	GWH	GWH	ВWH
(3)	ses	ange			Total Steam	0 0	Diesel	Total	Steam	ပ္ပ ပ	CT	Diesel	Total	Steam	C C C	СТ		_
(2)	Energy Sources	(1) Annual Firm Interchange	Nuclear	Coal	Residual			Distillate					Natural Gas			(17)	(18) NUGs	(19) Net Energy for Load
(1)		(1)	(2)	(3)		(9)	(8)			(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)

NOTE: Line (18) includes energy received from Non-Renewable and Renewable resources. See Schedule 6.3 for details on Gulf's renewable resources .

GULF POWER COMPANY

Schedule 6.2 Energy Sources

(16)	2025	(8.13)	None	84.93	0.00	None None None		00.0	None	0.00	None	14.53	0.00	4.18	8.67	100.00
(15)	2024	(2.12)	None	80.84	0.00	None None None		0.00 None	None	0.00	None	12.59	0.00	1.56	8.70	100.00
(14)	2023	(96.7)	None	80.57	0.00	None None None		0.00 None	None	0.00	None	18.65	0.00	0.75	8.73	100.00
(13)	2022	(17.62)	None	74.17	0.00	None None None		00.0	None	00.0	None	34.69	0.00	00.00	8.77	100.00
(12)	2021	(11.89)	None	69.06	0.00	None None None		00.0	None	00.0	None	34.04	0.00	0.00	8.78	100.00
(11)	2020	(11.07)	None	65.33	0.00	None None None		0.00 None	None	00.0	None	36.94	0.00	0.00	8.79	100.00
(10)	2019	(30.82)	None	53.75	0.00	None None None		0.00 None	None	00.0	None	68.27	0.00	0.00	8.81	100.00
(6)	2018	(38.54)	None	52.43	0.00	None None None		0.00 None	None	0.00	None	77.21	0.00	0.67	8.90	100.00
(8)	2017	(32.53)	None	42.57	0.00	None None None		00.00 None	None	00.0	None	80.79	0.00	0.68	9.17	100.00
(2)	2016	(15.18)	None	34.05	0.00	None None None		0.00 None	None	00.0	None	73.78	0.00	0.69	7.35	100.00
(9)	Actual 2015	(7.53)	None	40.65	0.00	None None None		0.01 None	None	0.01	None	64.91	0.19 EA 1E	0.56	1.96	100.00
(2)	Actual 2014	(31.20)	None	61.35	0.00	None None None		0.01 None	None	0.01	None	68.10	0.20 67 77	0.63	1.74	100.00
(4)	Units	%	%	%	% %	% % %	ò	% %	%	%	%	%	% >	%	%	%
(3)	S	ge			Total Steam	CC CT Diesel	ŀ	Steam	CC	СТ	Diesel	Total	Steam	S F		
(2)	Energy Sources	Annual Firm Interchange	Nuclear	Coal	Residual		-	Ulstillate		_) Natural Gas			NUGs	(19) Net Energy for Load
(1)		(1)	(2)	(3)	(4) (5)	9(2)(8)		(9)	(11)	(12)	(13)	(14)	(15)	(11)	(18)	(19)

NOTE: Line (18) based on energy received from Non-Renewable and Renewable resources. See Schedule 6.3 for details on Gulf's renewable resources .

CHAPTER III

PLANNING ASSUMPTIONS AND PROCESSES

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THE INTEGRATED RESOURCE PLANNING PROCESS

In order to coordinate its plans for future resource additions, Gulf participates in the SES IRP process. This planning process begins with a determination of the various escalation and inflation rates that will impact the financial condition of the SES. Experts from within and outside the SES meet to discuss current and historical economic trends and conditions, as well as future expected economic conditions which would impact the SES's business over the next twenty to twenty-five years. Information gathered from these discussions serves as a basis for developing the general inflation and escalation assumptions that will affect fuel costs, construction costs, labor rates and variable O&M.

In addition to the work on the economic assumptions, there are a number of activities that are conducted in parallel with one another in the IRP process. These activities include energy and demand forecasting, fuel price forecasting, generation technology screening analysis and evaluation, engineering cost estimation, evaluation of dispatchable and non-dispatchable demand-side management (DSM) programs, and other planning activities.

The SES operating companies remain active in offering customers various DSM programs which result in modified consumption patterns. The impact of such DSM programs on system loads is assessed and included as an input into the SES IRP process. DSM programs which are identified as cost-effective alternatives to the supply-side resources are integrated with the supply-side options to produce a final integrated resource plan. Gulf's forecast of energy

sales and peak demand reflects the continued impacts of its conservation programs. The DSM programs' costs and benefits are regularly updated in order to facilitate cost-effectiveness evaluations against the selected supply-side technologies from the IRP process.

A number of existing generating units on the SES are also evaluated with respect to their anticipated compliance costs. These evaluations are extremely important in order to maximize the benefit of existing investment from both a capital and an operations and maintenance expense perspective.

Additionally, the market for potential power purchases is analyzed in order to determine its cost-effectiveness in comparison to the available supply-side and demand-side options for meeting any identified capacity need. Power purchases are evaluated on both a near-term and long-term basis as a possible means of meeting the system's demand requirements. These power purchases can be procured from utility sources as well as from non-utility generators which utilize conventional or renewable fuels.

The supply side of the IRP process focuses on the SES as a whole. The current SES IRP used in the development of Gulf's 2016 TYSP has as its planning criterion a 15% reserve margin target for the year 2019 and beyond.⁽²⁾ The reserve margin is the optimum economic point at which the system can meet its energy and demand requirements after accounting for load forecast error, abnormal weather conditions, and unit forced outage conditions.

⁽²⁾ The SES recently completed a revised reserve margin study which recommends a change in the planning reserve margin target from 15% to 17%. If ultimately adopted by the retail SES operating companies, this criterion will be used to develop the system's future IRP, and will be reflected in subsequent Gulf TYSPs.

It also balances the cost of adding additional generation with the cost of not serving all the energy requirements of the customer.

Once the above mentioned planning assumptions are determined, generating unit technologies are screened to determine the most acceptable candidates, the necessary planning inputs are defined and the generation mix analysis is initiated. The main optimization tool used in the generation mix analysis is the Strategist® model. Strategist® employs a generation mix optimization module named PROVIEW[™]. The supply-side technology candidates are input into Strategist® in specific MW block sizes for selection over the planning horizon for the entire SES. Although this model uses many data inputs and assumptions in the process of optimizing system generation additions, the key assumptions are fuel forecasts, load forecasts, DSM programs, candidate units, reserve margin requirements, cost of capital, and escalation rates.

PROVIEW[™] uses a dynamic programming technique to develop the optimum resource mix. This technique allows PROVIEW[™] to evaluate many combinations of generation additions that satisfy the reserve margin constraint for every year. Annual system operating costs are simulated and are added to the construction costs required to build each combination of resource additions. An indicative schedule of least cost resource additions is developed by evaluating each year sequentially and comparing the results of each combination. PROVIEW[™] produces a number of different combinations over the planning horizon, evaluating both the capital cost components for unit

additions as well as the operating and maintenance cost of existing and future supply-side additions. The program produces a report which ranks all of the different combinations with respect to the total net present value cost over the entire twenty-year planning horizon. The leading combinations from the program are then evaluated for reasonableness and validity. It is important to note that supply-side additions from the PROVIEW[™] program output are for the entire SES and are reflective of the various technology candidates selected.

After the SES results are verified, each individual operating company's specific needs over the planning horizon are evaluated. Each company is responsible for recommending the type and timing of its unit additions. When all companies are satisfied with their capacity additions, the system base supply-side plan is complete. The result is an individual operating company supply plan that fits within the SES planning criteria.

Finally, a financial analysis of the plan is performed to assess the impact on the system's cost. Once the plan has proven to be robust and financially feasible, it is reviewed with and presented for approval to executive management.

In summary, the SES IRP process involves a significant amount of manpower and computer resources in order to produce a truly least-cost, integrated demand-side and supply-side resource plan. During the entire process, the SES is continually looking at a broad range of alternatives in order to meet the SES's projected demand and energy requirements. The SES updates its IRP each year to account for the changes in the demand and energy

forecast, as well as the other major assumptions previously mentioned in this section. A mix study is again performed to ensure that the IRP is the most economical and cost-effective plan. The resulting product of the SES IRP process is an integrated indicative plan which meets the needs of the SES's customers in a cost-effective and reliable manner.

TRANSMISSION PLANNING PROCESS

The transmission system is not studied as a part of the IRP process, but it is studied, nonetheless, for reliability purposes. Commonly, a transmission system is viewed as a resource used to transport electric power from its generation source to the point of its conversion to distribution voltages under a number of system conditions known as contingencies. The results of the IRP are factored into transmission studies in order to determine the impacts of various generation site options upon the transmission system. The transmission system is studied under different contingencies for various load levels to ensure that the system can operate adequately without exceeding conductor thermal and system voltage limits.

When the study reveals a potential problem with the transmission system that warrants the consideration of correction in order to maintain or restore reliability, a number of possible solutions are identified. These solutions and their costs are evaluated to determine which is the most cost-effective. Once a solution is chosen to correct the problem, a capital budget expenditure request is prepared for executive approval.

In prior years, Gulf has entered into a series of power purchase agreements to meet its needs, and it will continue this practice in the future when economically attractive opportunities are available. In order to ensure that adequate transmission facilities are in place to handle these purchase transactions when Gulf has the need for additional capacity, it has been and will continue to be Gulf's practice to perform a transmission analysis of viable power purchase proposals to determine any transmission constraints. Gulf will formulate a plan, if needed, to resolve any transmission issues in a reasonable, cost-effective manner prior to proceeding with negotiations for power purchase agreements.

FUEL PRICE FORECAST PROCESS

FUEL PRICE FORECASTS

Fuel price forecasts are used for a variety of purposes within the SES, including such diverse uses as long-term generation planning and short-term fuel budgeting. The SES fuel price forecasting process is designed to support these various uses.

The delivered price of any fuel consists of a variety of components. The main components are commodity price and transportation cost. Domestic coal commodity prices are forecast on either a mine-mouth basis or free on board (FOB) barge basis, while import coals are forecast on an FOB ship basis at the port of import. Natural gas prices are forecast at the Henry Hub, Louisiana benchmark delivery point. Because mine-mouth coal prices vary by source, sulfur content, and Btu level, commodity price forecasts are prepared for different coal classifications used on the SES. Because natural gas does not possess the same quality variations as coal, a single commodity price forecast for gas at Henry Hub is prepared, and a basis differential between Henry Hub and the various pipelines serving SES plants is applied. One price forecast is developed for ultra-low sulfur diesel (ULSD) oil, which is the only oil used in the SES.

Transportation costs, to be used in the delivered price forecast, are developed for potential sites when modeling generic unit additions in the resource planning process. Site-specific transportation costs are developed for existing units to produce delivered price forecasts for both the resource planning process and the fuel budget process. Similarly, when site-specific unit additions

are under consideration, site-specific transportation costs are developed for each option.

SES GENERIC FUEL FORECAST

The SES develops short-term (current year +2) and long-term (year 4 and beyond) fuel price forecasts for coal, oil, and natural gas which extend through the Company's 10-year planning horizon. The short-term forecasts are developed by SCS Fuel Services for use in the system's fuel budgeting process and marginal pricing dispatch procedures.

The long-term forecasts are developed in the spring of each year for use in system planning activities. Charles River & Associates (CRA) is the modeling vendor used by the system to develop the long-term forecasts. This process is a collaborative effort between CRA and members of cross-functional SES planning teams, including Gulf Power personnel, and is governed by an SES executive team.

Fuel market assumptions, developed in collaboration between CRA and SES, are integrated into CRA's model to develop commodity forecast prices. Transportation prices are developed by the SES and are combined with the CRA commodity prices to produce the total delivered prices used in the resource planning process. These prices are developed for existing units and potential green field/brown field sites for future expansion.

COAL PRICE FORECAST

In 2015, coal production in the United States was approximately 900 million short tons, a decrease from the 994 million short tons for 2014, and the lowest level since 1986. The largest decline in coal production was in the Central Appalachian region, largely because of its difficult mining geology and high operating costs. Coal production in Central Appalachia in 2015 was 40% below its annual level for the 2010-2014 period. In other major coal regions, Northern Appalachia, Western Bituminous (Colorado and Utah), and Powder River, production in 2015 was 10% to 20% below their corresponding regional average levels for 2010-2014. By contrast, coal production from Illinois Basin in 2015 was 8% higher than average production levels for 2010-2014. It is estimated that Colombian production in 2015 was up approximately 3.5% over 2014 levels.

Overall global demand for coal continues to decrease. The major importers continue to be China and India. Although China has demanded less over the last few years, India has had increases in demand over the same period. The primary supply for China and India continues to be from Indonesia and Australia. European demand remains relatively flat with its primary supply coming from Colombia and its secondary source being supplied from the United States (U.S.) when an imbalance occurs.

From an overall global market perspective the coal market is oversupplied, leading to lower prices than experienced over the last few years. In the U.S., this price decrease continues to be driven by the abundance of low priced natural gas which has led to the displacement of coal generation. With the exception of the Western Bituminous region, steam coal prices in major basins experienced

double-digit percentage declines in 2015. Central Appalachian coal spot prices dropped by 22% in 2015, following a decline of 13% the year before. Coal prices in the Powder River, Illinois, and Northern Appalachian basins, which had remained largely unchanged during 2014, decreased 18%, 26%, and 29%, respectively in 2015. Colombian coal prices have been relatively flat to declining over the last couple of years.

Coal production from the Central Appalachian coal region continues to decline as a result of the inability of mines to compete with lower price coal basins, including the Illinois Basin and the Powder River Basin. Illinois Basin coal production has seen steady increases, in large part, as a result of the widespread installation of scrubbers at eastern power generation stations. Capital investment is typically required to enable Illinois Basin or Central Appalachian coal-fired generating units to utilize the less expensive Powder River Basin coal.

Historically, Powder River Basin (PRB) regional coal production has grown at 5% per year over sustained periods, but recently production levels have decreased. Production costs in the PRB have increased slightly as mining moves from East to West across the basin and deeper reserves are accessed. Increased overburden and distance to rail load outs have put upward pressure on costs, but the continued decrease in fuel oil prices will provide some cost relief. Overall, the economics of surface mining in this region remain favorable.

Demand for Western Bituminous coal is expected to remain relatively flat to declining as several generators in Colorado have ceased burning this coal. The quality of the coal that can be exported from this region will have a major

impact on its long term production levels. As for the movements into the southeast, the high transportation costs make Western Bituminous coals less economic to this region.

NATURAL GAS PRICE FORECAST

Gas Daily Henry Hub prices averaged \$2.61/MMBtu in 2015. That was a \$1.71/MMBtu decrease over the average of \$4.32/MMBtu for 2014. December 2014 was warmer than normal, which when combined with robust production, contributed to lower prices throughout 2015. In the first quarter, prices averaged from \$2.99/MMBtu in January to \$2.80/MMBtu in March. While the January average monthly price of \$2.99/MMBtu was the highest monthly average in 2015, it was the lowest monthly average on record since September 2012. Entering the second guarter, prices retreated even more, with April settling at an average of \$2.58/MMBtu. Gas prices in May settled the month at \$2.83/MMBtu on forecasts of warmer weather and increased power sector burn nationwide during the month. By the end of the second quarter prices fell to an average of \$2.76/MMBtu. A return to warmer temperatures at the beginning of the third quarter saw July prices average higher at \$2.82/MMBtu. Natural gas production set consecutive records in July, August and September, which increased storage levels during the summer season despite warmer temperatures and higher natural gas consumption. Although natural gas consumption in August was the highest on record for that month, above average storage levels and increased production led to August prices closing the month at \$2.76/MMBtu, or \$0.06/MMBtu lower than July. Demand remained highly dependent on

temperatures. Prices continued to fall for the remainder of the quarter with September settling at a monthly average of \$2.65/MMBtu due primarily to slightly cooler weather following the summer peak season. Warmer than normal temperatures in the first half of the heating season, record inventory levels, production growth, and forecasts for a warm winter contributed to prices remaining low. The last quarter of 2015 experienced the most substantial drop of the year with prices averaging \$2.33/MMBtu in October, \$2.07/MMBtu in November, and \$1.86/MMBtu in December. December's monthly average price was the lowest monthly average on record since April 2012.

After a mild 2014-2015 winter season, natural gas storage inventory consistently registered above previous year levels, with the first net injection of 2015 occurring before the end of the traditional November–March heating season. By the end of March, working gas inventories were 1,461 Bcf, or 75.4% higher than last year at that time. Record setting shale gas production during the summer months led to high levels of injections following the heating season. The industry refilled 2.447 trillion cubic feet (Tcf) of storage from April through October 2015, resulting in natural gas storage inventories at the end of October being 3.93 Tcf, a record level for the industry's summer season.

The 2015-2016 winter heating season began with warmer than average temperatures in November. Inventory levels began the 2015 withdrawal season at 3.98 Tcf, or 6.2% less than the same time in 2014, and 6.8% below the five year average. By mid-November 2015, inventory levels hit 4.0 Tcf with an injection of 15 Bcf. This marks the second time in five years that a net injection has occurred this late in the year. Subsequent withdrawals in late November and

early December brought stocks back below 4.0 Tcf. Even with these withdrawals, early December 2015 inventories were still higher than the previous year's December levels and higher than the five year average.

By the end of January 2016, withdrawals from storage saw a dramatic increase, as the first triple digit withdrawals of the winter season occurred. Withdrawals began in the first week of January and increased steadily throughout the month. Despite these consecutive weeks of triple-digit storage withdrawals, inventories remained well above the five year average. The U.S. Energy Information Administration (EIA) announced that working gas in storage was 2.7 Tcf as of February 12, 2016, and industry analysts were predicting storage levels above the five year average at the end of the heating season by March 2016.

With the warmer temperatures, daily Henry Hub prices traded below \$2.00/MMBtu for the first time during 2015 in November. In the following weeks, prices dropped to historically low levels. On December 24, 2015, day ahead Henry Hub spot prices fell to \$1.54/MMBtu, the lowest level since December 1998. For 2015, the Henry Hub average was \$2.61/MMBtu, the lowest annual average since 1999. Since the end of December, prices have traded above \$2/MMBtu, with the Henry Hub averaging \$2.27/MMBtu for the entire month. Henry Hub prices began February \$0.14/MMBtu higher and fell within the first week to \$2.03/MMBtu on February 3, following forecasts for warmer weather. The Henry Hub average as of February 18, 2016 was \$2.09/MMBtu. The EIA expects the monthly average spot prices to remain low for the next couple of years. The projected Henry Hub price averages are \$2.64/MMBtu in 2016 and \$3.22/MMBtu in 2017.

NATURAL GAS AVAILABILITY

U.S. production growth will continue to reduce demand for natural gas imports from Canada and will support growth in exports to Mexico. Exports to Mexico will increase as demand grows from the electric power sector and natural gas production rate in that country remain flat. The EIA projects gross exports will increase to an average of 0.5 Bcf/day in 2016 and average 1.3 Bcf/day in 2017. U.S. natural gas production is poised to reach another record year in 2016. Most growth is expected to come from the Marcellus and Utice Shales, as a backlog of drilled wells is completed and new pipeline capacity is placed in service to deliver Marcellus/Utica gas to markets. U.S. natural gas production is estimated to have averaged over 74 Bcf/day in 2015, which was an increase from 2014 levels and was the sixth consecutive annual record increase for U.S. gas production. The EIA reports that growth will slow to 0.7% in 2016, as low natural gas prices and declining rig activity begin to affect production. In 2017, forecast production growth increases to 2.0%. The continued growth in domestic production should provide more than a sufficient supply of natural gas to meet operating needs.

STRATEGIC ISSUES

Power Purchase Agreements have provided supply-side diversity and the flexibility allowing Gulf to adapt its future generation expansion plans to changing market conditions without negative financial impacts to the Company and its customers. Gulf's Shell PPA provides 885 MW of firm capacity and energy from an existing gas-fired combined cycle (CC) generating unit that is interconnected with the SES in Alabama. With the Shell PPA in place, Gulf will have sufficient capacity to meet its load service and reliability requirements until June 2023. This strategy of supplementing Gulf's development of long-term capacity resources with shorter-term power purchases has proven to be effective over the years, and Gulf will continue to follow this strategy in the future when appropriate and cost-effective to do so.

Another important strategic advantage for Gulf is its association with the SES as it relates to integrated planning and operations. Drawing on the planning resources of Southern Company Services to perform coordinated planning and having the capacity resources of the SES available to Gulf through the Intercompany Interchange Contract's (IIC) reserve sharing mechanism in times when Gulf is temporarily short of reserves are key benefits that Gulf and its customers realize through its association with the SES. In addition, the SES's generation organization actively pursues firm energy market products at prices that can lead to significant savings to the SES and its customers.

Over the next decade, Gulf will face significant challenges in developing a generation expansion plan that serves not only its customers' load growth but its existing base need for capacity. As discussed in the Environmental Compliance section of this TYSP, compliance with additional environmental regulations has led to retirements of several Gulf coal-fired units. The current system resource plan indicates that the addition of new gas-fired units will be needed in 2023 to replace this capacity. Gulf continues to monitor the development of state and national policy in the area of air, land, and water regulations. Gulf will consider options for compliance with the resulting regulations that fulfill its obligation to serve the energy needs of its retail customers in Northwest Florida with reliable and reasonably priced electricity. With Gulf's Shell PPA that provides firm gas-fired generating capacity until May 2023 of the current planning cycle, Gulf is well positioned to meet current and future load requirements as proposed state and federal environmental compliance standards are finalized.

ENVIRONMENTAL COMPLIANCE

Gulf has developed and routinely updates its environmental compliance strategy to serve as a road map for a reasonable, least-cost compliance plan. This road map establishes general direction, but allows for individual decisions to be made based on specific information available at the time. The focus of the strategy updates is centered on compliance with the acid rain requirements and other significant clean air requirements, as well as new land and water requirements. This approach is necessary to preserve the flexibility to match a dynamic regulatory environment with the available compliance options.

Gulf will continue to take all necessary actions to fully comply with all environmental laws and regulations as they apply to the operation of its existing generation facilities and the installation of new generation. The following is a summary of each major area of existing and emerging environmental regulations and Gulf's actions taken to comply with these regulations.

Existing Environmental Regulations

Clean Air Act Amendments of 1990

In 1990, Congress passed major revisions to the Clean Air Act requiring existing coal-fired generating plants to substantially reduce air emissions of sulfur dioxide (SO₂) and nitrogen oxides (NO_X). Gulf's compliance actions for SO₂ have included fuel switching to lower sulfur coals coupled with the use of banked emission allowances and the acquisition of additional allowances for future year compliance. Also, Gulf completed installation and began operating flue gas de-sulfurization equipment on Plant Crist Units 4 through 7 in December

2009 which is now achieving significant reductions of SO_2 emissions at these coal-fired units. In addition to reducing SO_2 emissions, Gulf has installed low NO_X burners and/or additional post-combustion NO_X controls on its coal-fired units. The Company utilizes a system-wide NO_X emissions averaging plan to meet the requirements of the Act.

Air Quality Standards for Ozone

In 1997, the Environmental Protection Agency (EPA) announced a stringent new eight-hour National Ambient Air Quality Standard (NAAQS) for ozone based on an eight-hour average. In 2002, Gulf entered into an agreement with the Florida Department of Environmental Protection (FDEP) to reduce NO_X emissions at Plant Crist in order to help ensure that the new ozone standard is attained in the Pensacola area. Gulf installed Selective Catalytic Reduction (SCR) controls on Crist Unit 7 in May 2005. In addition to the SCR control on Unit 7, the Company installed Selective Non-Catalytic Reduction Controls (SNCR) and over-fire air on Crist Unit 6 in February 2006 and SNCR controls on Crist Unit 5 in April 2006. These controls have achieved the overall plant-wide NO_X emissions average of 0.20 lbs/MMBtu as outlined in the FDEP Agreement. In accordance with the FDEP agreement, Gulf also retired Crist Unit 1 in 2003 and Crist Units 2 and 3 in 2006. The Crist 6 SNCR was replaced with SCR technology in April 2012 in order to further reduce NO_X emissions.

In 2008, the EPA adopted a revised eight-hour ozone NAAQS, and published its final area designations in 2012. The regions where Gulf's generation resources are located have achieved attainment of the 2008 standard. On October 26, 2015, the EPA published a more stringent eight-hour

ozone NAAQS. This new standard may result in the need for additional emission controls, improvements to control efficiency, and operational fuel changes that could affect the siting of new generating units. States will recommend area designations by October 2016, and the EPA is expected to finalize them by October 2017.

Air Quality Standards for Fine Particulate Matter

The EPA regulates fine particulate matter concentrations on an annual and 24-hour average basis. Attainment with the 1997 and 2006 particulate matter NAAQS has been achieved in all geographical areas served by the Company. In 2012, the EPA issued a final rule that increases the stringency of the annual fine particulate matter standard. The EPA promulgated final designations for the 2012 annual standard in December 2014, and no new nonattainment areas were designated within the Company's service area. The EPA has, however, deferred designation decisions for certain areas in Florida, so future non-attainment designations in these areas are possible.

Air Quality Standards for SO₂ and NO₂

In December 2009, the EPA proposed revisions to the NAAQS for SO₂. These revisions, which include the establishment of a new one-hour standard, became effective in August 2010. No areas within the Company's service area have been designated as non-attainment under this rule. However, the EPA may designate additional areas as non-attainment in the future. Implementation of the revised SO₂ NAAQS could result in additional required reductions in SO₂ emissions and increased compliance and operation costs.

Revisions to the NAAQS for Nitrogen Dioxide (NO₂), which established a new one-hour standard, became effective in April 2010. Although none of the geographical areas served by the Company were designated as non-attainment for the NO₂ standard, based on current ambient air quality monitoring data, the new NO₂ NAAQS could result in additional compliance and operational costs for units that require new source permitting.

Clean Air Interstate Rule / Cross State Air Pollution Rule

The EPA issued its final Clean Air Interstate Rule (CAIR) in 2005 which called for phased reductions in SO₂ and NO_x emissions from power plants in 28 eastern states. In 2008, the U.S. Court of Appeals for the District of Columbia Circuit issued decisions invalidating certain aspects of CAIR, but left CAIR compliance requirements in place while the EPA developed a revised rule. In 2011, the EPA promulgated the Cross State Air Pollution Rule (CSAPR) to replace CAIR. Like the CAIR, the CSAPR was intended to address interstate emissions of SO₂ and NO_x that interfere with downwind states' ability to meet or maintain national ambient air quality standards for ozone and/or particulate matter. The first phase of CSAPR took effect on January 1, 2015 and Phase II will begin in 2017.

On July 28, 2015, the U.S. Court of Appeals for the District of Columbia Circuit issued an opinion invalidating certain emissions budgets under the CSAPR Phase II emissions trading program for a number of states, including Florida and Georgia, but rejected all other pending challenges to the rule. The court's decision leaves the emissions trading program in place and remanded the rule to the EPA for further action consistent with the court's decision. On

December 3, 2015, the EPA published a proposed revision to CSAPR that would revise existing ozone-season emissions budgets for nitrogen oxide in Mississippi and would remove Florida from the CSAPR program. The EPA proposes to finalize this rulemaking by summer 2016. The revised CSAPR program could result in additional compliance and operational costs for Gulf's affected units as early as 2017.

Decisions regarding Gulf's CAIR/CSAPR compliance strategy were made jointly with the Clean Air Visibility Rule (CAVR) and CAMR/MATS compliance plans due to co-benefits of proposed controls. Compliance is being accomplished by operation of emission controls installed for CAIR at Gulf's coalfired facilities and/or by the purchase of emission allowances as needed.

Clean Air Visibility Rule

The CAVR was finalized in 2005 in order to restore natural visibility conditions in certain areas (primarily national parks and wilderness areas) by 2064. The rule involves the application of Best Available Retrofit Technology (BART) to certain sources built between 1962 and 1977 and any additional emission reductions necessary for each designated area to achieve reasonable progress toward the natural conditions goal by 2018 and for each 10-year planning period thereafter. In 2012 the EPA determined that compliance with CSAPR is an alternative means of satisfying BART obligations.

Florida submitted a revised State Implementation Plan (SIP) on September 17, 2012. This SIP proposed a series of Electric Generating Unit (EGU)-specific BART and Reasonable Progress determinations which included BART limits for the coal-fired units at Plant Smith and no further controls for

Plant Crist. The EPA completed a review of the Florida SIP and published final approval on August 29, 2013 with an effective date of September 30, 2013. On October 15, 2013, environmental groups challenged EPA's approval of Florida's SIP in the U.S. Court of Appeals, Eleventh Circuit. On August 13, 2014, the Sierra Club and the National Parks Conservation Association filed a motion with the court seeking to voluntarily dismiss their challenge and the 11th Circuit granted that motion on September 2, 2014.

The Mississippi Department of Environmental Quality (MDEQ) requested that a source-specific BART analysis be submitted by December 15, 2012. The BART analysis for Plant Daniel submitted in December of 2012 demonstrated that the plant already meets "top level control" relative to BART. The EPA had until June 7, 2014 to finalize an approval or disapproval. Following the Supreme Court ruling and the lower court's reinstatement of CSAPR, neither MDEQ nor the EPA has taken any action. Until these issues are resolved, it remains uncertain what additional controls, if any, will ultimately be required for CAVR and BART compliance.

Mercury and Air Toxics Standards

In 2012 the EPA finalized the Mercury and Air Toxics Standards (MATS) rule which imposes stringent emissions limits for acid gases, mercury, and particulate matter on coal- and oil-fired electric utility steam generating units. The compliance deadline set by the final MATS rule was April 16, 2015 or April 16, 2016 for affected units for which extensions have been granted. On June 29, 2015, the Supreme Court of the United States (Supreme Court) issued a decision finding that in developing the MATS rule the EPA had failed to properly

consider costs in its decision to regulate hazardous air pollutant emissions from electric generating units. On December 15, 2015, the U.S. Court of Appeals for the District of Columbia Circuit remanded the MATS rule to the EPA without vacatur to respond to the U.S. Supreme Court's decision. The EPA's supplemental finding in response to the U.S. Supreme Court's decision, which the EPA proposes to finalize in April 2016, is not expected to have any impact on the MATS rule compliance requirements and deadlines.

Gulf has evaluated a number of options for its coal-fired generation to comply with emission standards required by the EPA's final MATS rule and EPA's proposed land and water rules. As described in Gulf's Air Quality Compliance Program Update that was filed with the FPSC, Gulf has determined that transmission upgrades are the best MATS compliance option for Plant Crist. For the Plant Daniel coal units, the best options to meet MATS limits include installing scrubbers, bromine injection, and activated carbon injection. The Plant Daniel scrubbers were placed in-service in November 2015 and the Plant Daniel bromine and activated carbon injection systems were placed in service in December 2015. The Plant Daniel and the Plant Crist MATS continuous emission monitoring systems (CEMS) were also placed in-service during 2015.

In 2013, the Company determined that the most cost-effective MATS compliance option for Plant Scholz was to retire the plant. Therefore, Plant Scholz was retired in April 2015. In early 2015, the Company finalized its MATS compliance strategy for Plant Smith. The most cost-effective compliance option was to retire the Plant Smith coal-fired Units 1 and 2 in March of 2016. Plant Smith's remaining units will continue to operate and generate electricity.

EMERGING ENVIRONMENTAL REGULATIONS

316(B) Intake Structures

The EPA published a proposed rule in 2011 that establishes standards for reducing effects on fish and other aquatic life caused by cooling water intake structures at existing power plants and manufacturing facilities. The rule also addresses cooling water intake structures for new units at existing facilities. EPA's final rule became effective in October 2014. Compliance with the final rule may require changes to existing cooling water intake structures at certain Gulf generating facilities; however, the ultimate effect of this final rule will depend on the results of additional studies and implementation of the rule by regulators based on site-specific factors. National Pollutant Discharge Elimination System permits issued after July 14, 2018 must include conditions to implement and ensure compliance with the standards and protective measures required by the rule.

Effluent Limitations

In 2009, the EPA announced plans to revise current effluent limitations guidelines for steam electric power plants. The EPA completed a multi-year study of power plant wastewater discharges and concluded that pollutant discharges from coal-fired power plants will increase significantly in the next few years as new air pollution controls are installed. On November 3, 2015, the EPA published a final effluent guidelines rule which imposes stringent technology-based requirements for certain waste streams from steam electric power plants. The revised technology-based limits and compliance dates will be incorporated into future renewals of National Pollutant Discharge Elimination System permits

at affected units and may require the installation and operation of multiple technologies sufficient to ensure compliance with applicable new numeric wastewater compliance limits. Compliance deadlines between November 1, 2018 and December 31, 2023 will be established in permits based on information provided for each applicable waste stream.

Waters of the U.S. Final Rule

On June 29, 2015, the EPA and the U.S. Army Corps of Engineers jointly published a final rule revising the regulatory definition of waters of the U.S. for all Clean Water Act (CWA) programs. The final rule significantly expands the scope of federal jurisdiction under the CWA. This rule could significantly increase permitting and regulatory requirements and costs associated with the siting of new facilities and the installation, expansion, and maintenance of transmission and distribution lines.

This CWA rule became effective August 28, 2015, but on October 9, 2015, the U.S. Court of Appeals for the Sixth Circuit issued an order staying implementation of the final rule. The ultimate impact of the final rule will depend on the outcome of this and other pending legal challenges.

Water Quality and Total Maximum Daily Loads

In addition to this federal action, State of Florida nutrient water quality standards that limit the amount of nitrogen and phosphorous allowed in state waters are in effect for the State's streams and estuaries. These standards only require periodic collection of water quality samples. The impact of future requirements will depend on further regulatory action in connection with their site-specific implementation through the State of Florida's National Pollutant

Discharge Elimination System permitting program and Total Maximum Daily Load restoration program and cannot be determined at this time.

Coal Combustion Residuals

On April 17, 2015, the EPA published the Coal Combustion Residuals (CCR) Rule in the Federal Register, which became effective on October 19, 2015. The CCR Rule regulates the disposal of CCR, including coal ash and gypsum, as non-hazardous solid waste in CCR Units at active generating power plants. The CCR Rule does not automatically require closure of CCR Units but includes minimum criteria for active and inactive surface impoundments containing CCR and liquids, lateral expansions of existing units, and active landfills. Failure to meet the minimum criteria can result in the required closure of a CCR Unit. Although the EPA does not require individual states to adopt the final criteria, states have the option to incorporate the federal criteria into their state solid waste management plans in order to regulate CCR in a manner consistent with federal standards. The EPA's final rule continues to exclude the beneficial use of CCR from regulation. The Company is currently completing an analysis of the plan of closure for all ash ponds, including the timing of closure and related cost recovery through regulated rates subject to Florida PSC approval.

Global Climate Issues

On October 23, 2015, the EPA published two final actions that would limit CO_2 emissions from fossil fuel-fired electric generating units. One of the final actions contains specific emission standards governing CO_2 emissions from new, modified, and reconstructed units. The other final action, known as the

Clean Power Plan, establishes guidelines for states to develop plans to meet EPA-mandated CO₂ emission rates or emission reduction goals for existing units. The EPA's final guidelines require state plans to meet interim CO₂ performance rates between 2022 and 2029 and final rates in 2030 and thereafter. At the same time, the EPA published a proposed federal plan and model rule that, when finalized, states can adopt or that would be put in place if a state either does not submit a state plan or its plan is not approved by the EPA. On February 9, 2016, the Supreme Court of the United States granted a stay of the Clean Power Plan, pending disposition of petitions for its review with the courts. The stay will remain in effect through the resolution of the litigation, whether resolved in the U.S. Court of Appeals for the District of Columbia Circuit or the Supreme Court.

These guidelines and standards could result in operational restrictions and material compliance costs, including capital expenditures, which could affect future unit retirement and replacement decisions. The ultimate financial and operational impact of the final rules on the Company cannot be determined at this time and will depend upon numerous factors, including the Company's ongoing review of the final rules; the outcome of legal challenges, individual state implementation of the EPA's final guidelines, additional rulemaking activities in response to legal challenges and related court decisions, the impact of future changes in generation and emissions-related technology and costs, the impact of future decisions regarding unit retirement and replacement, and the time periods over which compliance will be required.

Conclusion

Gulf has made substantial investments in environmental controls to comply with current and pending laws and regulations. Gulf will continue its involvement in the development of strategies to address any future clean air, water, or other requirements in order to minimize the uncertainty related to the scope and cost of compliance. As new initiatives emerge, Gulf will support any proposal that would help it meet environmental goals and objectives in a logical and cost-effective way, provided that the standards are based on sound science and economics which allow for adequate time to comply without compromising the safe, reliable and affordable supply of electricity to Gulf's customers.

AVAILABILITY OF SYSTEM INTERCHANGE

Gulf coordinates its operations with the other operating companies of the SES: Alabama Power Company, Georgia Power Company, Mississippi Power Company, and Southern Power Company. In any year, an individual operating company may have a temporary surplus or deficit in generating capacity, depending on the relationship of its generating capacity to its load and reserve responsibility. Each SES operating company either buys or sells its temporary deficit or surplus capacity from or to the pool in order to satisfy its reserve responsibility requirement. This is accomplished through the reserve sharing provisions of the SES Intercompany Interchange Contract (IIC) that is reviewed and updated annually.

OFF-SYSTEM SALES

Gulf and other SES operating companies have engaged in the sale of firm capacity and energy to several utilities outside the SES through a series of longterm wholesale power sales agreements with initial terms beginning prior to 1987. Gulf's share of these long-term off-system sales of capacity and energy varies from year to year and is reflected in the reserve calculations on Schedules 7.1 and 7.2, while the fuel use and the energy associated with Gulf's portion of these sales are included on Schedules 5 and 6.1 respectively. Gulf's primary contribution to these long-term off-system sales has historically come from its ownership interest in Unit 3 at Plant Scherer which Gulf acquired as part of its long range resource planning to meet the needs of its retail electric service customers. The initial contracts for sales out of Plant Scherer Unit 3 became effective with its commercial operation in 1987 for terms through 2010 and were succeeded by subsequent contracts that became effective in 2005 for terms beginning in 2010. The expiration dates for the 2005 vintage agreements vary by contract with one having termed out at the end of 2015. The two remaining contracts are scheduled to end May 2016 and December 2019, respectively.

CHAPTER IV

FORECAST OF FACILITIES REQUIREMENTS

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CAPACITY RESOURCE ALTERNATIVES

POWER PURCHASES

Gulf's use of power purchase agreements in previous years has proven to be a successful approach to meeting its reliability needs. As Gulf considers resources that can potentially meet its future need for capacity, longer-term power purchases from the market will be evaluated in order to determine their effect on supply flexibility and reduced commitment risk during periods in which environmental regulations (with considerable economic impacts) and legislative initiatives focusing on generation additions are in various stages of development. Gulf will continue to utilize both short-term and longer-term market purchases in the future to balance its approach to supply side resource development.

CAPACITY ADDITIONS

In conjunction with the SES, Gulf will conduct economic evaluations of its potential supply options in order to determine the most cost-effective means of meeting its future capacity obligations. Gulf will evaluate its internal construction options versus external development of capacity resources in order to determine how to best meet its future capacity obligations. Commercially available generating technologies such as gas combustion turbine, combined cycle, and nuclear will be included in future SES IRP mix studies. In addition, emerging Integrated Gasification Combined Cycle (IGCC) technologies, such as air blown IGCC, and generating facilities with carbon capture technology may be added to the future generation mix studies so that their potential economic and technical

viabilities may be evaluated. The potential benefits of these technologies include greater efficiency and lower environmental emissions.

If subsequent mix studies or market solicitations identify alternative power supply technologies or power purchase options that are more economical or that deliver more desirable results, Gulf will modify its expansion plan to reflect the proposed procurement of these resources. Gulf will continue to review all available capacity resource possibilities in order to serve the energy needs of its retail customers in Northwest Florida with reliable and cost-effective electricity.

RENEWABLE RESOURCES

Gulf has secured the supply of capacity and/or energy from several renewable facilities. Schedule 6.3 of this TYSP includes the amount of renewable energy that Gulf has produced or purchased from existing renewable resources, and the amounts currently projected to be produced or purchased from existing renewable resources during the 2016-2025 planning cycle.

Gulf will continue to purchase renewable energy produced by the Bay County Resource Recovery Facility through a negotiated energy purchase agreement that was executed in 2014. This facility, operated and maintained by Engen, LLC, is located in Panama City, Florida and uses municipal solid waste to produce energy for delivery to Gulf on a non-firm basis. Gulf will purchase the energy delivered to its system at fixed prices until the agreement expires in July 2017.

In 2010, Gulf constructed a landfill gas-fired generating facility that is located on leased property adjacent to Escambia County's Perdido Landfill which is just north of Pensacola, Florida. Gulf's Perdido Landfill Gas To Energy Facility consists of two Caterpillar G3520C internal combustion generating units that have a maximum capacity rating of 1.6 MW each. The facility is operated and maintained under contract with LFG Technologies, Inc. Gulf has an agreement with Escambia County, Florida for the purchase of their landfill gas to fuel this Gulf-owned facility. The agreement has a term of 20 years and can be renewed for additional, successive 12 month periods. Gulf Power has energy purchase agreements that secure cost-effective renewable energy from three solar facilities (Gulf Coast Solar Center I, Gulf Coast Solar Center II, and Gulf Coast Solar Center III) and one wind project (Kingfisher Wind) to serve Gulf's customers. The solar projects will be constructed at three military bases in Northwest Florida. The Kingfisher Wind project produces renewable energy from a facility located in Oklahoma.

On October 30, 2014 and November 7, 2014, Gulf Power and Gulf Coast Solar Center I, II, & III, LLC (subsidiaries of Coronal Development Services, LLC) executed three separate agreements that provide for the sale of energy produced by the solar facilities to Gulf. Each solar energy purchase agreement has a term of twenty-five years and contains robust performance security provisions to protect Gulf and its customers in case of contract default.

Gulf Coast Solar Center I, LLC will develop, construct, own, operate and maintain a 30 MW solar generation facility on Eglin Air Force Base in Okaloosa County, Florida. Gulf Coast Solar Center II, LLC will develop, construct, own, operate and maintain a 40 MW solar generation facility on the U.S. Navy's Holley Outlying Field in Santa Rosa County, Florida. Gulf Coast Solar Center III, LLC will develop, construct, own, operate and maintain a 50 MW solar generation facility on the U.S. Navy's Saufley Outlying Field in Escambia County, Florida. Each of the facilities will be directly interconnected to Gulf Power transmission facilities and the owners are fully responsible for the costs of interconnection. These solar energy purchase agreements are expected to provide multiple benefits to Gulf Power and its customers including, but not limited to, cost

savings over the term of the agreements, fuel diversity, promotion of renewable energy generation in Florida, and assistance to the United States Air Force and the United States Navy in achieving their goals for the promotion of renewable generation.

On December 18, 2014, Gulf Power and Morgan Stanley executed an energy purchase agreement with a term of approximately twenty years which is subject to early termination provisions. The Kingfisher Wind project, constructed as a result of this agreement, is located in Kingfisher and Canadian Counties, Oklahoma. Included in the agreement are performance security provisions designed to protect Gulf and its customers in case of default . Morgan Stanley is obligated to deliver a fixed number of MWhs to Gulf in each hour of the agreement's twenty year term, and Gulf will purchase the energy at prices as specified in the agreement. Morgan Stanley bears all risks and responsibilities associated with delivering energy to the Southern Companies Transmission System. The agreement is expected to provide multiple benefits to Gulf and its customers including, but not limited to, substantial cost savings over the term of the agreement, reduced exposure to future fuel cost increases and volatility, and promotion of new renewable wind energy generation.

Under the solar and wind energy purchase agreements, Gulf retains the flexibility to serve its retail customers with renewable energy by retiring the associated environmental attributes or selling the energy and/or environmental attributes separately or bundled together to third parties. To the extent that Gulf Power opts to sell renewable attributes, the proceeds from such sales would be

returned to Gulf's retail customers in the form of credits to the Fuel and Purchased Power Cost Recovery Clause.

Gulf is continuously looking for opportunities to provide cost-effective renewable energy to increase its fuel diversity. Gulf has access to possible purchases of renewable energy through its Renewable Standard Offer Contract (RSOC) on file with the FPSC. Consistent with state law, Gulf updates its pricing for the RSOC as needed so that a standard offer for the purchase of renewable energy is continually available to developers of renewable resources. Gulf may also negotiate a PPA with a renewable energy supplier.

Schedule 6.3 Renewable Energy Sources

(A) Owned and/or Purchased by Gulf.
(B) MW's scheduled during the system peak hour per contract obligation to deliver fixed amount per hour.
(C) Energy produced by these customers' generators varies depending on demand for their product.

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PREFERRED AND POTENTIAL SITES FOR CAPACITY ADDITIONS

Gulf's current plan is to either construct new generating facilities or purchase additional generating capacity by June 2023 of the current planning cycle following the expiration of its 885 MW Shell PPA. The Company's next need is anticipated to be for CT capacity. Gulf will consider its existing Florida sites at Plant Crist in Escambia County, Plant Smith in Bay County, and Plant Scholz in Jackson County, as well as its greenfield sites in Florida at Shoal River in Walton County, at Caryville in Holmes County, and at North Escambia in Escambia County as potential sites for locating future generating units in Northwest Florida.

Each of these potential sites has unique characteristics that may offer construction and/or operational advantages related to the potential installation of natural gas-fired CTs, which is the next potential type of capacity needed. Please note that the sites discussed herein are not listed in any particular order based on their individual attributes. Site selection for Gulf's next generating unit addition will be based on existing infrastructure, available acreage and land use, transmission, fuel facilities, environmental factors including evolving ozone standards, and overall project economics. The required environmental and land use information for each potential site is set forth below. The estimated peak water usage for the proposed CTs should be identical for each site mentioned below. Gulf projects that approximately 500 gallons per minute would be required for domestic, irrigation, and other potable and non-potable water uses.

Potential Site #1: Plant Crist, Escambia County

The project site would be located on Gulf's existing Plant Crist property in Escambia County, Florida. If a future project is ultimately located on this property, detailed studies must first be completed to determine the exact size and location of the project site within the plant property's boundaries in order to meet Gulf's needs while ensuring full compliance with local, state, and federal requirements. The plant property, approximately 10 miles north of Pensacola, Florida, can be accessed via county roads from nearby U. S. Highway 29. As shown on Schedule 1, the existing Plant Crist facility consists of 924 MW of steam generation.

U. S. Geological Survey (USGS) Map

A USGS map showing the general location of the Plant Crist property is found on page 83 of this chapter.

Land Uses and Environmental Features

The Plant Crist property is dedicated to industrial use. The land adjacent to the property is currently being used for residential, commercial, and industrial purposes. General environmental features of the undeveloped portion of the property include mixed scrub, mixed hardwood/pine forest, and some open grassy areas. This property is located on the Escambia River. There are no unique or significant environmental features on the property that would substantially affect project development.

Water Supply Sources

For industrial processing, cooling, and other water needs, Gulf would likely use a combination of groundwater from on-site wells, available surface water, and reclaimed water sources.

Potential Site #2: Plant Smith, Bay County

The project site would be located on Gulf's existing Plant Smith property in Bay County, Florida. If a future project is ultimately located on this property, detailed studies must first be completed to determine the exact size and location of the project site within the plant property's boundaries in order to meet Gulf's needs while ensuring full compliance with local, state, and federal requirements. The plant property, approximately 10 miles northwest of Panama City, Florida, is located on North Bay and can be accessed via a county road from nearby State Road 77. As shown on Schedule 1, the existing Plant Smith facility consists of 96 MW of steam generation per the FDEP MATS deadline extension, 556 MW of combined cycle generation, and 32 MW of CT generation.

U. S. Geological Survey (USGS) Map

A USGS map showing the general location of the Plant Smith property is found on page 84 of this chapter.

Land Uses and Environmental Features

The Plant Smith property is dedicated to industrial use. The land adjacent to the property is rural and consists of planted pine plantations. General environmental features of the property include a mixture of upland and wetland areas. This property is located on North Bay, which connects to St. Andrews Bay. The property has no unique or significant environmental features that would substantially affect project development.

Water Supply Sources

For industrial processing, cooling, and other water needs, Gulf would likely use a combination of groundwater from on-site wells and available surface water.

Potential Site #3: Plant Scholz, Jackson County

The project site would be located on Gulf's existing Plant Scholz property in Jackson County, Florida. If a future project is ultimately located on this property, detailed studies must first be completed to determine the exact size and location of the project site within the plant property's boundaries in order to meet Gulf's needs while insuring full compliance with local, state, and federal requirements. The plant property, approximately 3 miles southeast of Sneads, Florida, is located on the Apalachicola River and can be accessed via a private road from nearby U. S. Highway 90. The Plant Scholz facility was retired in April 2015.

U. S. Geological Survey (USGS) Map

A USGS map showing the general location of the Plant Scholz property is found on page 85 of this chapter.

Land Uses and Environmental Features

The Plant Scholz property is dedicated to industrial use. The land adjacent to the property is primarily rural and in a natural state, but some agricultural development exists. General environmental features of the property include a mixture of hardwood and pine forest areas. This property is located on the Apalachicola River. Because the river is designated as Outstanding Florida Waters, certain criteria must be satisfied to ensure that the river is not significantly degraded. Water withdrawals for any future generation sited here would be limited to volumes currently permitted for Plant Scholz. There are no other unique or significant environmental features that would substantially affect project development.

Water Supply Sources

For industrial processing, cooling, and other water needs, Gulf would likely use a combination of groundwater from on-site wells and available surface water.

Potential Site #4: Shoal River Property, Walton County

The project site would be located on undeveloped Gulf property in Walton County, Florida. If the project is ultimately located on this property, detailed studies will be required to determine the exact size and location of the project site within the property's boundaries in order to meet Gulf's needs, while insuring full compliance with local, state, and federal requirements. This property, also referred to as the Mossy Head property, is approximately 3 miles northwest of Mossy Head, Florida. It is located on the Shoal River and can be accessed via a county road from nearby U. S. Highway 90.

U. S. Geological Survey (USGS) Map

A USGS map showing the general location of the Shoal River property is found on page 86 of this chapter.

Land Uses and Environmental Features

The Shoal River property is currently dedicated to agricultural and rural residential use. The northern part of the site, some 150 acres, is designated General Agricultural in Walton County's Comprehensive Future Land Use Plan. The land adjacent to the property is rural and in a natural state. General environmental features of the property mainly include wooded upland areas. This property is located on the Shoal River. Because the river is designated as Outstanding Florida Waters, certain criteria must be satisfied to ensure that the river is not significantly degraded. There are no other unique or significant environmental features on the property that would substantially affect project development.

Water Supply Sources

For industrial processing, cooling, and other water needs, Gulf would likely use groundwater from on-site wells.

Potential Site #5: Caryville Property, Holmes County

The project site would be located on undeveloped Gulf property that is bisected by the Holmes/Washington County, Florida line. If the project is ultimately located on this property, detailed studies will be required to determine the exact size and location of the project site within the property's boundaries in order to meet Gulf's needs while ensuring full compliance with local, state, and federal requirements. This property is approximately 1.5 miles northeast of Caryville, Florida. It is located just east of the Choctawhatchee River and can be accessed via County Road 179 from nearby U. S. Highway 90.

U. S. Geological Survey (USGS) Map

A USGS map showing the general location of the Caryville property is found on page 87 of this chapter.

Land Uses and Environmental Features

The Caryville property is certified under the Power Plant Siting Act for two 500 MW coal-fired units, but is also suitable for CT generating units. The site is approximately 2,200 acres in size and is adjacent to a major railroad line on its southern boundary. The land surrounding the property is primarily rural and is used mainly for agriculture and timber harvesting. General environmental features of the property mainly include wooded upland areas, with areas of wetlands. There are no other unique or significant environmental features on the property that would substantially affect project development.

Water Supply Sources

For industrial processing, cooling, and other water needs, Gulf would likely use groundwater from on-site wells and available surface water.

Potential Site #6: North Escambia Property, Escambia County

The project site would be located on undeveloped Gulf property that is located in the northern part of Escambia County, Florida, approximately 5 miles southwest of Century, Florida. It is located just west of the Escambia River and can be accessed via County Road 4 from nearby U. S. Highway 29. If the project is ultimately located on this property, detailed studies will be required to determine the exact size and location of the project site within the property's boundaries in order to meet Gulf's needs, while insuring full compliance with local, state, and federal requirements.

U. S. Geological Survey (USGS) Map

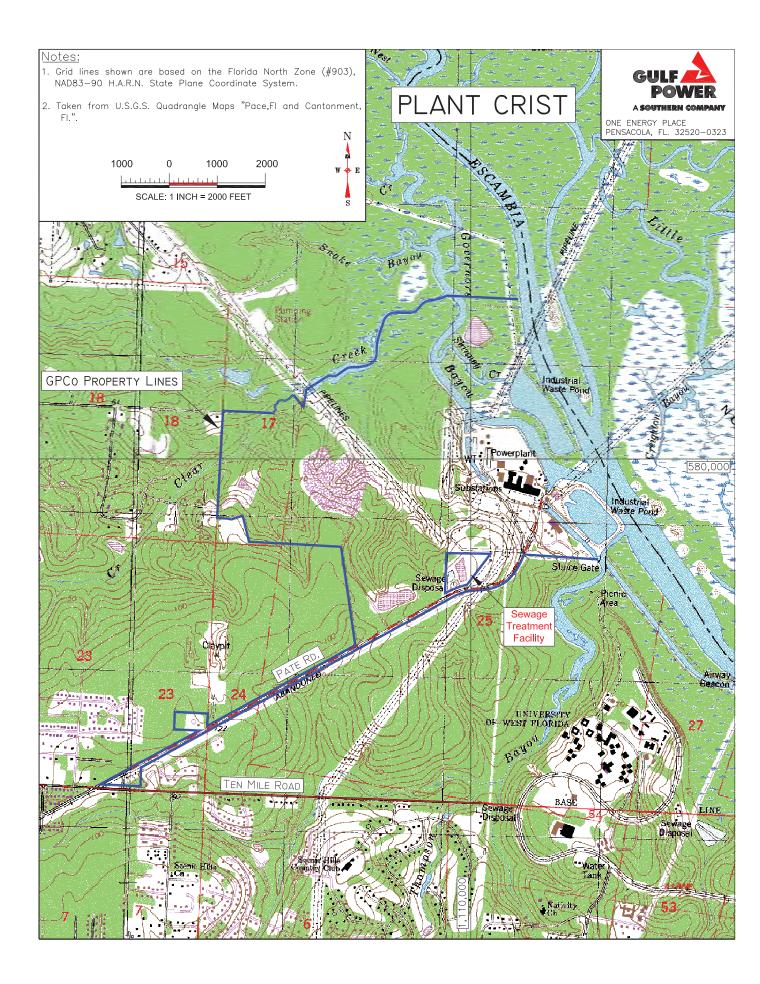
A USGS map showing the general location of the North Escambia property is found on page 88 of this chapter.

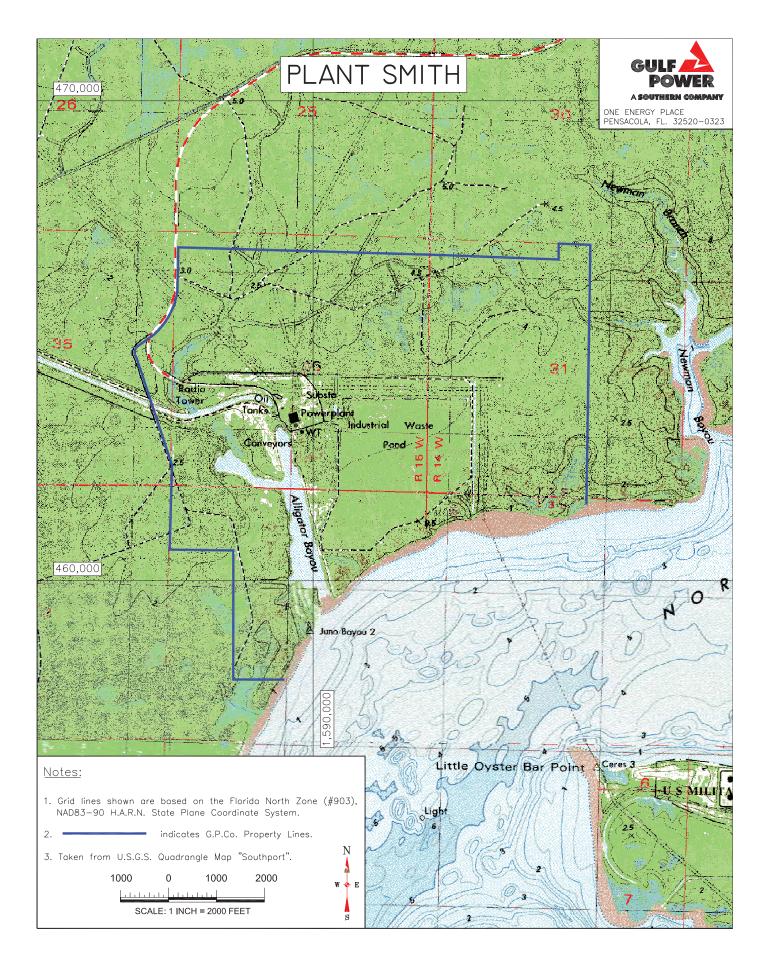
Land Uses and Environmental Features

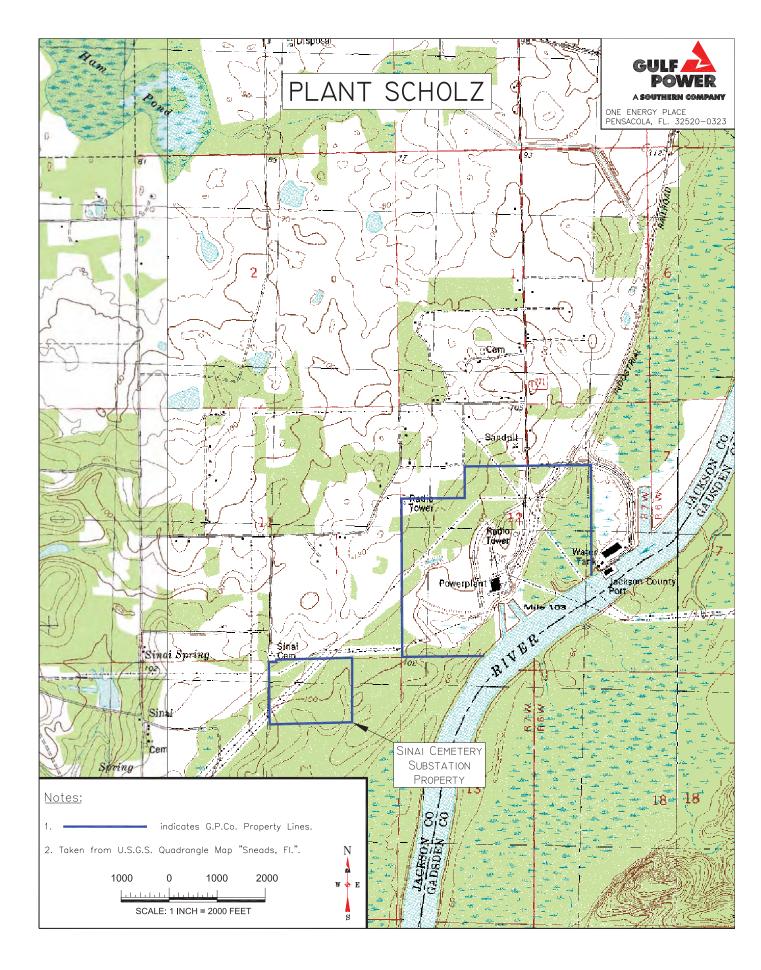
The North Escambia property is primarily dedicated to timber harvesting and agricultural use. The property is in close proximity to transmission, natural gas pipelines, railroad, major highways and access to water, all suitable to accommodate new generation needs. The site is currently 2728 acres and includes property located directly on the Escambia River to support the water supply needs for any future generating facility. The land surrounding the property is primarily rural and is used mainly for timber harvesting and agriculture. General environmental features of the property mainly include wooded upland areas, with areas of hardwood/pine forest and wetlands. There are no other unique or significant environmental features on the property that would substantially affect future project development.

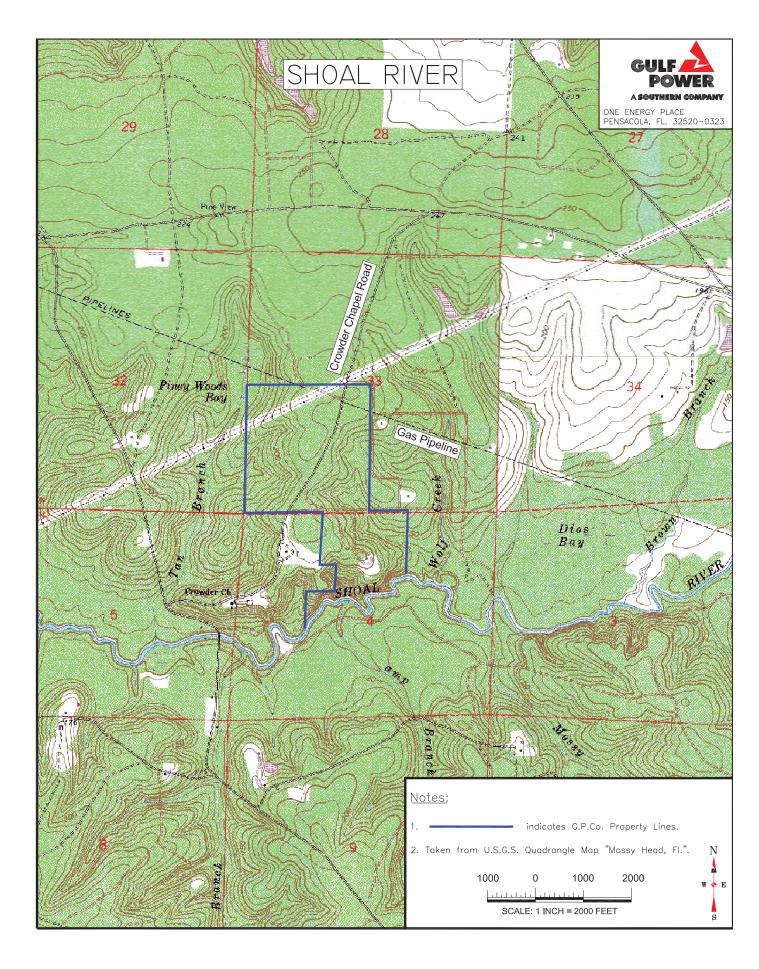
Water Supply Sources

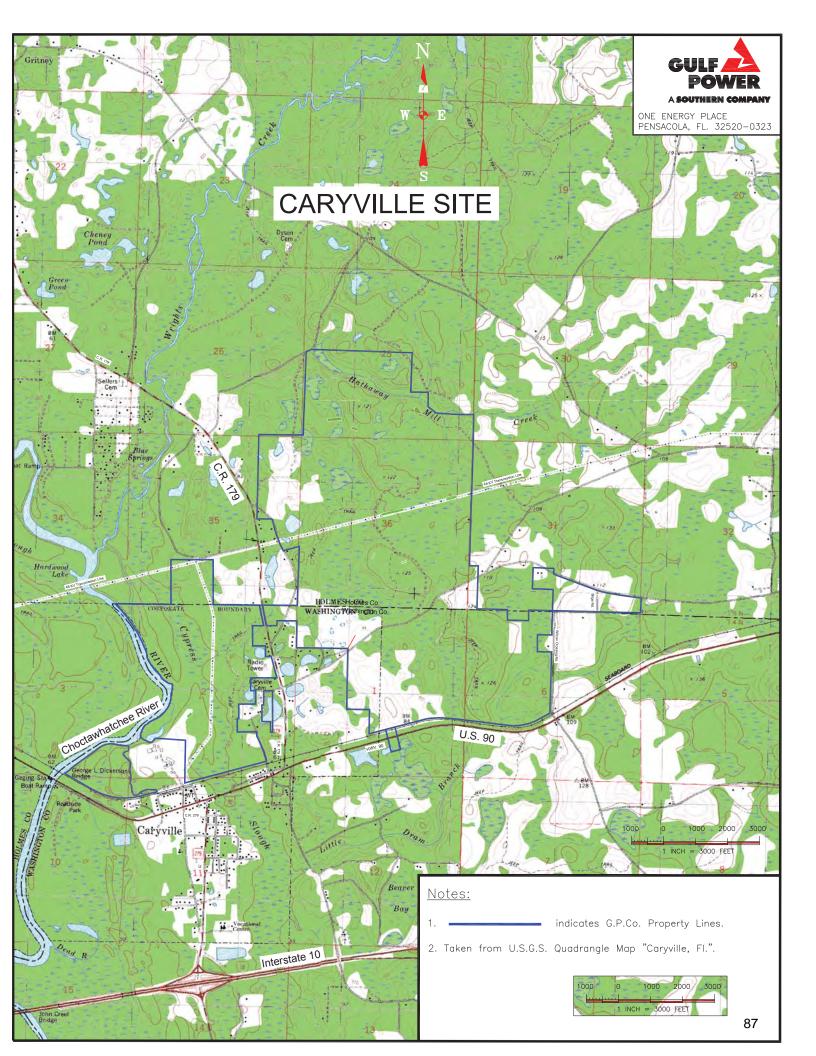
For industrial processing, cooling, and other water needs, Gulf would likely use a combination of groundwater from on-site wells and available surface water. This page is intentionally blank.

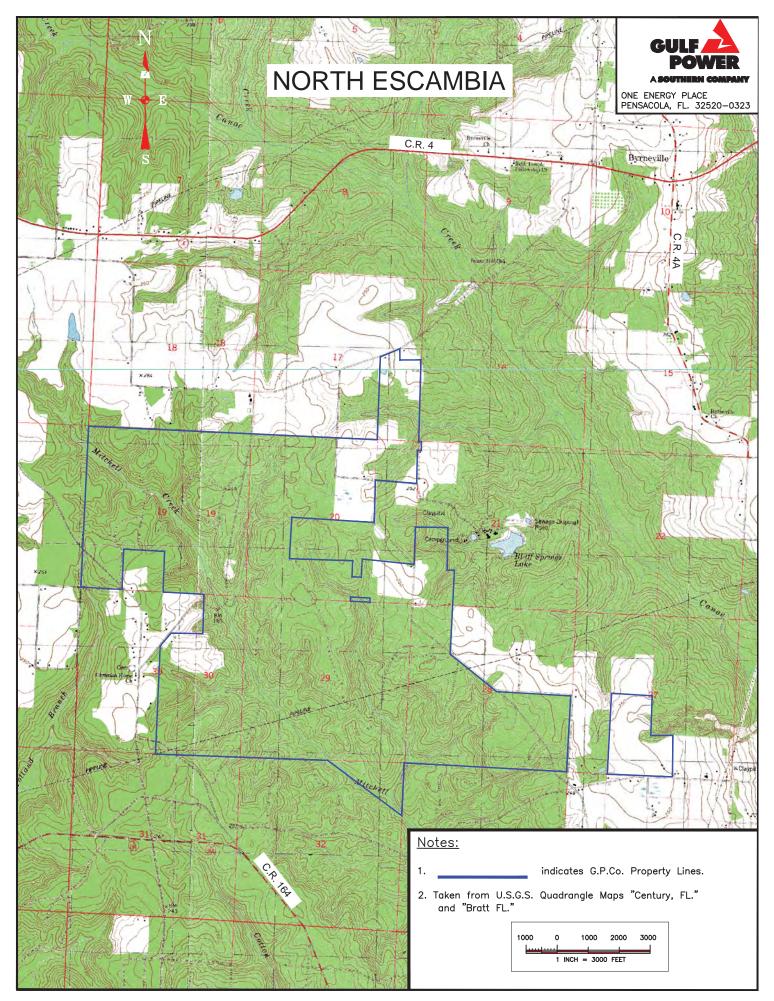












SCHEDULE 7.1 FORECAST OF CAPACITY, DEMAND, AND SCHEDULED MAINTENANCE AT TIME OF SUMMER PEAK

(12)	RESERVE MARGIN AFTER MAINTENANCE %	OF PEAK	28.1%	26.2%	24.8%	23.0%	24.7%	24.6%	24.6%	15.1%	14.6%	14.1%
(11)	RES MARGI MAINTE	MM	689	653	624	586	630	628	628	387	375	365
(10)	SCHEDULED MAINTENANCE	MW	NONE									
(6)	RESERVE MARGIN BEFORE MAINTENANCE %	OF PEAK	28.1%	26.2%	24.8%	23.0%	24.7%	24.6%	24.6%	15.1%	14.6%	14.1%
(8)	RESI MARGIN MAINTE	MW	689	653	624	586	630	628	628	387	375	365
(2)	FIRM PEAK DEMAND	MM	2,450	2,491	2,520	2,546	2,552	2,554	2,554	2,564	2,576	2,586
(9)	TOTAL CAPACITY AVAILABLE	MW	3,139	3,144	3,144	3,132	3,182	3,182	3,182	2,951	2,951	2,951
(5)	NUG	MM	0	0	0	0	0	0	0	0	0	0
(4)	FIRM CAPACITY EXPORT	MM	(22)	(20)	(20)	(20)	0	0	0	0	0	0
(3)	FIRM CAPACITY IMPORT	MM	943	943	943	943	943	943	943	58	58	58
(2)	TOTAL INSTALLED CAPACITY	MM	2,251	2,251	2,251	2,239	2,239	2,239	2,239	2,893	2,893	2,893
(1)		YEAR	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025

SCHEDULE 7.2 FORECAST OF CAPACITY, DEMAND, AND SCHEDULED MAINTENANCE AT TIME OF WINTER PEAK

(12)	RESERVE MARGIN AFTER MAINTENANCE	% OF PEAK	47.2%	48.2%	46.8%	44.3%	43.9%	46.2%	46.3%	45.9%	36.0%	35.6%
(11)	RESI MARGIN MAINTE	MW	1,003	1,038	1,019	976	971	1,021	1,022	1,016	800	793
(10)	SCHEDULED	MAINTENANCE MW	NONE									
(6)	RESERVE AARGIN BEFORE MAINTENANCE	% OF PEAK	47.2%	48.2%	46.8%	44.3%	43.9%	46.2%	46.3%	45.9%	36.0%	35.6%
(8)	RESE MARGIN MAINTE	MW	1,003	1,038	1,019	976	971	1,021	1,022	1,016	800	793
(2)	FIRM PEAK	DEMAND MW	2,124	2,153	2,177	2,205	2,210	2,210	2,209	2,215	2,223	2,230
(9)	TOTAL CAPACITY	AVAILABLE MW	3,127	3,191	3,196	3,181	3,181	3,231	3,231	3,231	3,023	3,023
(2)		NUG MM	0	0	0	0	0	0	0	0	0	0
(4)	FIRM CAPACITY	EXPORT MW	(216)	(22)	(20)	(20)	(20)	0	0	0	0	0
(3)	FIRM CAPACITY	IMPORT MW	956	956	956	956	956	956	956	956	71	71
(2)	TOTAL INSTALLED	CAPACITY MW	2,387	2,290	2,290	2,275	2,275	2,275	2,275	2,275	2,952	2,952
(1)		YEAR	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25

SCHEDULE 8 PLANNED AND PROSPECTIVE GENERATING FACILITY ADDITIONS AND CHANGES

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(15)	Status	CR	К	ĸ	К	٩
(14)	winter MW	(1.0)	(96.0) (96.0)	n/a	(15.0)	677.0
(13) (14)	Net Capability Summer Winter MW MW	(1.0)	(96.0)	n/a	(12.0)	654.0
(12)	Gen Max Nameplate KW		149,600	149,600	14,250	696,000
(11)	Effective Date Mo/Yr	06/16	03/16	03/16	12/18	06/23
(10)	Com'l In- Service Mo/Yr	01/87	06/65	06/65	05/98	06/23
(6)	Const Start Mo/Yr		I	ł	ł	06/19
(8)	uel sport Alt	ł	ł	1	I	1
(7) (8)	Fuel Transport Pri Alt	RR	WM	WA	Ч	Ы
(9)	uel Alt	ı	ł	:	1	:
(2)	Fuel Pri /	O	O	U	ŊŊ	Ŋ
(4)	Unit Type	FS	RS	ES E	СТ	СТ
(3)	Location	Monroe County, GA	Bay County 36/2S/15W	Bay County 36/2S/15W	Santa Rosa County 15/1N/29W	Unknown
(2)	Unit No.	ო	-	Ν	1 - 3	1-3
(1)	Plant Name	Scherer	Lansing Smith ⁽¹⁾	Lansing Smith ⁽²⁾	Pea Ridge	Combustion Turbines

Footnotes:

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Smith 1 retires in 3/2016 following derated status. Smith 2 retires in 3/2016 following off-line status.

NG - Natural Gas LO - Light Oil HO - Heavy Oil LFG - Landfill Gas WDS - Wood Waste Solid <u>Fuel</u> C - Coal CT - Combustion Turbine CC - Combined Cycle IC - Internal Combustion FS - Fossil Steam S - Steam Unit Type Abbreviations:

Fuel Transportation TK - Truck RR - Railroad WA - Water PL - Pipeline equal to 50% complete V - Under construction, more than 50% complete D - Environmental derate P - Planned, but not authorized by utility U - Under construction, less than or CR - Certified Rating change R - To be retired Status

Status Report and Specifications of Proposed Generating Facilities

Combustion Turbines	654 677	662 685	GT	06/19 06/23	NG DFO	Dry Low NOX Burners	Evaporative Cooling	Unknown	Planned Not Committed	Not Applied	Not Applied	1.4% 3.6% 95.0% 9.7%	40 598 461 62 75 4.92 4.92
Plant Name and Unit Number:	Net MW Capacity a. Summer: b. Winter	Gross MW Capacity a. Summer: b. Winter	Technology Type:	Anticipated Construction Timing a. Field construction start - date: b. Commercial in-service date:	Fuel a. Primary fuel: b. Alternate fuel:	Air Pollution Control Strategy:	Cooling Method:	Total Site Area:	Construction Status:	Certification Status:	Status with Federal Agencies:	Projected Unit Performance Data Planned Outage Factor (POF): Unplanned Outage Factor (UOF): Equivalent Availability Factor (EAF): Capacity Factor (%): Average Net Operating Heat Rate (ANOHR):	Projected Unit Financial Data Book Life (Years): Total Installed Cost (In-Service Year \$/kW): Direct Construction Cost ('16 \$/kW): AFUDC Amount (\$/kW): Escalation (\$/kW): Fixed O&M ('23 \$/kW - Yr): Variable O&M ('23 \$/MWH): K Factor:
(1)	(2)		(3)	(4)	(5)	(9)	(2)	(8)	(6)	(10)	(11)	(12)	(13)

Status Report and Specifications of Proposed Directly Associated Transmission Lines

Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	
(1) Point of Origin and Termination:	(2) Number of Lines:	(3) Right-of-Way:	(4) Line Length:	(5) Voltage:	(6) Anticipated Construction Timing:	(7) Anticipated Capital Investment:	(8) Substations:	(9) Particination with Other Utilities:

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