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April 1, 2014

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

Re: 2014 Ten Year Site Plan

Dear Ms. Stauffer:

Attached for electronic filing is Gulf Power Company's 2014 Ten Year Site Plan filed pursuant to F.P.S.C. Rule No. 25-22.071.

Sincerely,

Robert L. MI-Sarp.

Robert L. McGee, Jr. **Regulatory and Pricing Manager** 

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Attachments

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

# TEN YEAR SITE PLAN 2014-2023

# FOR ELECTRIC GENERATING FACILITIES AND ASSOCIATED TRANSMISSION LINES

**APRIL 2014** 



# 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, 2014

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#### **GULF POWER COMPANY**

#### **TEN-YEAR SITE PLAN**

#### Executive Summary

The Gulf Power Company (Gulf) 2014 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 2014 TYSP is being filed in compliance with the applicable FPSC rules.

Included in Gulf's 2014 TYSP is the documentation of assumptions used for Gulf's load forecast, fuel forecasts, the 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<sup>™</sup>) 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 2014 TYSP cycle, Gulf's two purchased power agreements (PPAs) that currently supply 494 megawatts (MW) of peaking power from two existing regional market facilities will be available to serve its customers until their expiration on May 31, 2014. Following the expiration of the peaking PPAs, Gulf's 885 MW PPA with Shell Energy North America (Shell PPA) will provide capacity and energy to serve customers from an existing gas-fired combined cycle generating unit located in Alabama. This PPA resource has been utilized by Gulf to serve its customers on a non-firm basis since November 2009, and it is scheduled to meet Gulf's firm capacity requirements beginning in June 2014.

As early as 2015, Gulf's existing coal-fired generation must comply with specific emission limits contained in the Environmental Protection Agency's (EPA) Mercury and Air Toxics Standards (MATS) rule. As discussed in its 2013 TYSP, Gulf has finalized its MATS compliance plans for Plant Crist and Plant Daniel, but its MATS compliance plans for Plant Smith have not been finalized. Once the Company determines the most cost-effective overall compliance options for Plant Smith, Gulf will submit revisions to its environmental

Compliance Program for the Commission's review. The final plans for MATS compliance could include land and water improvements necessary to meet regulatory requirements.

Evaluation of various options for Plant Scholz to comply with MATS and future environmental regulations indicates that significant investments in capital equipment will be required to meet those environmental rule requirements. Because it has been determined that the required compliance expenditures for Plant Scholz cannot be justified, Gulf announced on March 22, 2013 the planned closure of Plant Scholz. Therefore, after many years of valuable service to Gulf's customers, Plant Scholz will be retired in April 2015.

Until the impacts of MATS and all currently proposed EPA land and water regulations on the future coal-fired operations at Plant Smith are more fully evaluated and compliance plans for this plant are finalized, Gulf will assume that the coal-fired units at Smith will be available to operate on coal throughout the 2014-2023 planning cycle. Gulf will update its environmental Compliance Program and submit its finalized plans for Plant Smith to the FPSC once the most cost-effective compliance options for this plant have been determined.

The Shell PPA capacity combined with Gulf's diverse fleet of existing coal, natural gas, oil, and renewable generating units that are shown on Schedule 1 of this TYSP will enable Gulf to meet its reserve margin requirements during the 2014-2023 planning cycle until June 2023 when new capacity will be needed. Because Gulf's peak demand and energy loads are forecasted to be lower during the 2014-2023 planning cycle than the loads discussed in Gulf's previous TYSP, Gulf's next planned resource type needed in 2023 has changed from combined

cycle (CC) capacity to a requirement for combustion turbine capacity (CT). The SES IRP indicates that Gulf will need to add this peaking capacity by June 2023 following the expiration of the 885 MW Shell PPA in May 2023.

## 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% ownership in Unit 3 at Georgia Power Company's Scherer Electric Generating Facility which is completely dedicated to wholesale power sales contracts. This fleet of generating units consists of eleven 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 357 MW of steam generation, 556 MW (summer rating) of combined cycle generation, and 32 MW (summer rating) of combustion turbine facilities. The Scholz Electric Generating Facility, near Sneads, Florida, consists of 92 MW of steam generation. 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.

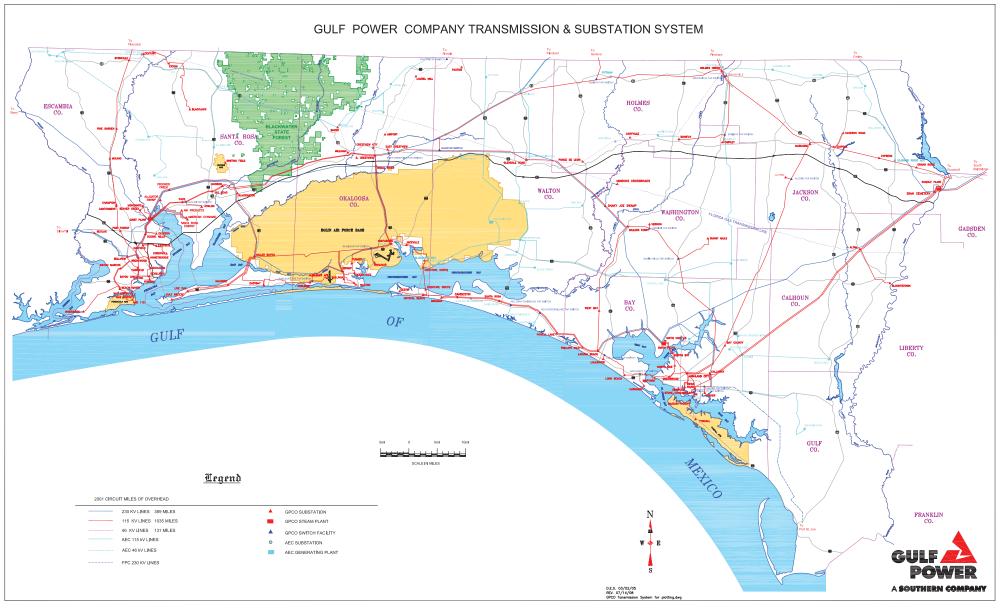
Including Gulf's ownership interest in the Daniel fossil steam Units 1 and 2 and the Scherer fossil steam Unit 3, Schedule 1, as of December 31, 2013,

shows Gulf's total net summer generating capability to be 2,704 MW and its total net winter generating capability to be 2,743 MW.

The existing Gulf system in Northwest Florida, including major generating plants, substations, and transmission lines, are shown on the system map on page 9 of this TYSP. Data related to Gulf's existing generating facilities is presented on Schedule 1 of this TYSP.

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		(10)	Com'l In- Service Mo/Yr		07/59 06/61 05/70 08/73		06/65 06/67 04/02 05/71		03/53 10/53		09/77 06/81	01/87		05/98 05/98 05/98
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		(2)	Unit No.		4 い 0 <i>ト</i>		<b>-</b> α α ∢		~ N		~ N	ю		0 0 <del>-</del>
		(1)	Plant Name	Crist		Lansing Smith		Scholz		Daniel	Ç	(a) Scherer	Pea Ridge	

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		(1)	Plant Name	Perdido LFG							



### CHAPTER II

FORECAST OF ELECTRIC POWER DEMAND AND ENERGY CONSUMPTION

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### 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, which are predicated on the philosophy of knowing and understanding the needs, perceptions and motivations of our customers and actively promoting wise and efficient uses of energy which 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-70's. This program brought customer awareness, understanding and expectations regarding energy efficient construction standards in Northwest Florida to levels unmatched elsewhere.

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 May 2013 economic projection provided by Moody's Analytics. This economic projection incorporates the national recession which started in December 2007 and officially ended in June 2009.

The May 2013 economic projection assumed the Federal Reserve would continue to keep interest rates low through early 2015. U.S. real GDP was expected to grow 3.4% in 2014 and 4.2% in 2015. Total U.S. employment was projected to benefit from continued recovery in housing markets and would return to pre-recession levels by the latter half of 2014.

#### 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-Lynn Haven-Panama City Beach. The Northwest Florida economy, by comparison to the national economy, was impacted by the recession before the nation-wide downturn and beyond the official end date of the national recession. A number of economic indicators for Gulf's service area, namely income, employment, housing starts, and population, were in decline at the end of 2006 or beginning of 2007 and either continued to decline or remained weak through 2013. However, Moody's projects that the economy in our service area will continue to recover through 2014, with a return to pre-recession levels by the end of 2015.

Northwest Florida's real disposable personal income increased 1.1% in 2013, significantly below the pre-recession average annual growth rate of 4.6%. Real disposable personal income was projected to grow over the next five years at an average annual rate of 3.8%. The region's employment, which had a pre-recession average annual growth rate of 3.4%, bottomed out in 2010 and remained weak through 2013. Employment was projected to grow at an average annual rate of 2.6% over the next five years. Single family housing starts were approximately 2,800 in 2013, which is a little more than half of the average level experienced prior to the recession and pre-recession housing boom. Housing starts were projected to return to more normal levels by 2015. Population growth in Northwest Florida was 1.3% before the recession, was nearly flat at 0.7% since 2006 through 2013, and was projected to return to normal growth rates by 2015, growing at an average annual rate of 1.6% for the next five years. Over the long-run, Northwest Florida growth was projected to decelerate after recovery from the recession to an average annual rate of 1.9% for income and 1.6% for employment.

Gulf's projections incorporate electric price assumptions derived from the 2014 Gulf Power Official Long-Range Forecast. Fuel price projections for gas and oil are developed by Southern Company Services (SCS) Fuel Procurement 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 (2013-2018)

GDP Growth	3.1 %
Interest Rate (30 Year AAA Bonds)	5.4 %
Inflation	2.4 %

#### TABLE 2

#### AREA DEMOGRAPHIC SUMMARY (2013-2018)

Population Gain	68,680
Average Annual Net Migration	10,690
Average Annual Population Growth	1.6 %
Average Annual Labor Force Growth	2.4 %

#### II. CUSTOMER FORECAST

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

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 as well as 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 secondyear-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 class energy use per customer per billing day was estimated based on historical data, normal weather, real disposable income per household, and projected 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 Residential End-Use Energy Planning System (REEPS) model, an electric utility end-use forecasting tool. REEPS 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 REEPS projection to extend the short-term 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 most recent 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. Monthly energy use per customer per billing day for small commercial customers (rates GS and Flat-GS) was estimated based on historical data, normal weather, non-manufacturing employment, and projected price of electricity. Similarly, monthly energy use per customer per billing day for large commercial customers (all other commercial rates) was estimated based on historical data, normal weather, nonmanufacturing employment, and projected price of electricity. These regression model outputs were then multiplied by the projected number of small and large commercial customers, respectively, and projected billing days by month, then summed to the total commercial class.

Long-term projections of commercial sales were developed utilizing the Commercial End-Use Planning System (COMMEND) model, an electric utility end-use forecasting tool that provides a conceptual framework for organizing commercial market building-type and end-use information. Gulf utilized growth rates from the COMMEND 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 most recent 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 industrial customers were interviewed by Gulf's industrial account representatives to identify expected load changes due to equipment additions, replacements, or changes in operating schedules and characteristics. The short-term 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 The resulting estimates of energy and month using historical averages. 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 real disposable income per household. 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 Hourly Electric Load Model (HELM), developed by ICF, Incorporated, for EPRI under Project RP1955-1. HELM inputs include historical load shapes and projections of net energy for load, which were based on the forecasted energy sales described previously. HELM spreads the energy projections using the historical load shapes and the results are 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 most recent 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 data from the Bureau of Economic Analyses. 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-11-0114-PAA-EG on February 11, 2011. Gulf's conservation programs were designed to meet the goals established by the Commission in Order No. PSC-09-0855-FOF-EG in December of 2009. 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.
- 2. <u>EnergySelect and EnergySelect LITE</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, early retirement, upgrades and duct repair.
- 5. <u>Landlord/Renter 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 split-incentive barrier which exists in a landlord/renter situation.
- Heat Pump Water Heater Program This program will provide incentives directly to the customer for the installation of highefficiency Heat Pump Water Heating equipment for domestic hot water production.
- 7. <u>Ceiling Insulation Program</u> This program will provide incentives to encourage customers to install or increase high efficiency insulation

in new or existing residential homes to reduce heat loss and heat gain from both conductive and convective means.

- 8. <u>High Performance Window Program</u> This program will provide incentives to install high-efficiency windows or window films in existing or new residential homes to reduce solar heat gain which, in turn, leads to reduced HVAC loads and operating costs.
- 9. <u>Reflective Roof Program</u> This program will provide incentives to promote the installation of ENERGY STAR qualified cool/reflective roofing products when constructing a new home or replacing the roof on an existing home to decrease the amount of heat transferred through roof assemblies and into vented attic spaces which, in turn, decreases the transfer of heat into the home's conditioned living area.
- 10. <u>Variable Speed/Flow Pool Pump Program</u> This program will provide an incentive to encourage the installation of high-efficiency variable speed or variable flow pool pumping and control equipment in both new and existing residential homes to reduce the energy, demand, and costs associated with swimming pool operation.
- 11. <u>Self-Install Energy Efficiency Program</u> This program promotes the purchase and installation of ENERGY STAR rated appliances, lighting and other self-installed energy saving measures for residential customers by focusing on increasing customer awareness of the benefits of energy efficient technologies and products through customer education, retail partnerships,

promotional distribution of compact fluorescent light bulbs (CFLs), on-line store, energy audits and seasonal promotional campaigns.

12. <u>Refrigerator Recycling Program</u> – This program is designed to increase customer awareness of the economic and environmental costs associated with running inefficient, older appliances in a household, and to provide eligible customers with free refrigerator and freezer pick-up services in addition to a cash incentive.

# B. COMMERCIAL/INDUSTRIAL CONSERVATION

- <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 electrotechnologies to replace old or inefficient equipment.
- 2. <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.
- 3. <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.

- 4. <u>Occupancy Sensor HVAC Control</u> The purpose of this program is to promote the installation of occupancy sensors to reduce energy waste in hotel rooms by providing hotel owners the opportunity to automatically control temperature settings when the rooms are unoccupied.
- High Efficiency Motor Program The purpose of this program is to reduce demand and energy associated with electric motors by encouraging the replacement of worn out, inefficient motors with high efficiency motors.
- Food Service Efficiency Program This program encourages the installation of ENERGY STAR qualified or equivalent energy efficient commercial and industrial food service equipment to reduce energy consumption and demand as well as operating costs for the customer.
- 7. <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.

8. <u>Real Time Pricing (RTP)</u> – The objective of this program, available to large Commercial and Industrial customers of Gulf Power, is to encourage customers to reduce demand on Gulf's system during peak times when the marginal cost of generating or purchasing electricity is at its highest by providing hourly prices on a day-ahead basis.

# C. <u>CONSERVATION RESULTS SUMMARY</u>

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)

2013 448,184 509,292 950,573,000

# 2014 BUDGET FORECAST TOTAL CONSERVATION PROGRAMS INCREMENTAL ANNUAL REDUCTIONS AT GENERATOR

	SUMMER PEAK (KW)	WINTER PEAK (KW)	NET ENERGY FOR LOAD (KWH)
2014	23,500	21,000	76,100,000
2015	23,500	20,600	75,300,000
2016	21,900	19,100	71,300,000
2017	22,300	20,000	74,600,000
2018	21,600	19,500	72,100,000
2019	20,500	19,000	68,800,000
2020	20,500	19,000	68,800,000
2021	20,500	19,000	68,800,000
2022	20,500	19,000	68,800,000
2023	20,500	19,000	68,800,000

# 2014 BUDGET FORECAST TOTAL CONSERVATION PROGRAMS CUMULATIVE ANNUAL REDUCTIONS AT GENERATOR

	SUMMER PEAK (KW)	WINTER PEAK (KW)	NET ENERGY FOR LOAD (KWH)
2014	471,684	530,292	1,026,673,000
2015	495,184	550,892	1,101,973,000
2016	517,084	569,992	1,173,273,000
2017	539,384	589,992	1,247,873,000
2018	560,984	609,492	1,319,973,000
2019	581,484	628,492	1,388,773,000
2020	601,984	647,492	1,457,573,000
2021	622,484	666,492	1,526,373,000
2022	642,984	685,492	1,595,173,000
2023	663,484	704,492	1,663,973,000

# HISTORICAL RESIDENTIAL CONSERVATION CUMULATIVE ANNUAL REDUCTIONS AT GENERATOR

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

2013 228,504 340,547 551,262,000

# 2014 BUDGET FORECAST RESIDENTIAL CONSERVATION INCREMENTAL ANNUAL REDUCTIONS AT GENERATOR

	SUMMER	WINTER	NET ENERGY
	PEAK	PEAK	FOR LOAD
	(KW)	(KW)	(KWH)
2014	19,400	19,000	65,100,000
2015	18,900	18,600	63,200,000
2016	17,000	17,000	58,500,000
2017	17,500	17,900	61,800,000
2018	16,700	17,500	59,200,000
2019	16,000	17,100	56,800,000
2020	16,000	17,100	56,800,000
2021	16,000	17,100	56,800,000
2022	16,000	17,100	56,800,000
2023	16,000	17,100	56,800,000

# 2014 BUDGET FORECAST RESIDENTIAL CONSERVATION CUMULATIVE ANNUAL REDUCTIONS AT GENERATOR

	SUMMER PEAK (KW)	WINTER PEAK (KW)	NET ENERGY FOR LOAD (KWH)
2014	247,904	359,547	616,362,000
2015	266,804	378,147	679,562,000
2016	283,804	395,147	738,062,000
2017	301,304	413,047	799,862,000
2018	318,004	430,547	859,062,000
2019	334,004	447,647	915,862,000
2020	350,004	464,747	972,662,000
2021	366,004	481,847	1,029,462,000
2022	382,004	498,947	1,086,262,000
2023	398,004	516,047	1,143,062,000

# HISTORICAL COMMERCIAL/INDUSTRIAL CONSERVATION CUMULATIVE ANNUAL REDUCTIONS AT GENERATOR

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

2013	219,680	168,745	399,311,000
2010	<b>_</b> .0,000	100,110	000,011,000

# 2014 BUDGET FORECAST COMMERCIAL/INDUSTRIAL CONSERVATION INCREMENTAL ANNUAL REDUCTIONS AT GENERATOR

	SUMMER	WINTER	NET ENERGY
	PEAK	PEAK	FOR LOAD
	(KW)	(KW)	(KWH)
			44 000 000
2014	4,100	2,000	11,000,000
2015	4,600	2,000	12,100,000
2016	4,900	2,100	12,800,000
2017	4,800	2,100	12,800,000
2018	4,900	2,000	12,900,000
2019	4,500	1,900	12,000,000
2020	4,500	1,900	12,000,000
2021	4,500	1,900	12,000,000
2022	4,500	1,900	12,000,000
2023	4,500	1,900	12,000,000

# 2014 BUDGET FORECAST COMMERCIAL/INDUSTRIAL CONSERVATION CUMULATIVE ANNUAL REDUCTIONS AT GENERATOR

	SUMMER PEAK (KW)	WINTER PEAK (KW)	NET ENERGY FOR LOAD (KWH)
2014	223,780	170,745	410,311,000
2015	228,380	172,745	422,411,000
2016	233,280	174,845	435,211,000
2017	238,080	176,945	448,011,000
2018	242,980	178,945	460,911,000
2019	247,480	180,845	472,911,000
2020	251,980	182,745	484,911,000
2021	256,480	184,645	496,911,000
2022	260,980	186,545	508,911,000
2023	265,480	188,445	520,911,000

# VII. SMALL POWER PRODUCTION / RENEWABLE ENERGY

The current forecasts also consider Gulf's active promotion of customersited renewable energy resources. Gulf initiated implementation of four new solar programs in 2011 in compliance with the Commission's Order No. PSC-10-0608-PAA-EG approved in October 2010. The Solar PV program, the Solar Thermal Water Heating program, the Solar for Schools program and the Solar Thermal Water Heating for Low Income Housing program are expected to result in demand and energy reductions that have been incorporated in the conservation estimates provided elsewhere in this document.

Please refer to the Renewable Resources section of this TYSP for additional information concerning Gulf's existing renewable resources and its efforts to promote and develop supply-side renewable energy resources.

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

(6)		Average KWH	Consumption	Per Customer	71,093	70,599	71,862	73,821	73,610	72,942	74,912	73,235	71,846	70,215	7/118		73,944	74,661	74,751	74,674	74,895	75,343	75,679	76,234	76,630	-01%	1.2%	0.9%	
(8)	Commercial	Average	No. of	<u>Customers</u>	51,981	52,916	53,479	53,791	53,810	53,414	53,349	53,409	53,706	54,261	57 G7G		55,083	55,653	56,320	56,950	57,546	58,108	58,612	59,063	59,480	0.5%	1.0%	0.9%	
(2)				GWH	3,695	3,736	3,843	3,971	3,961	3,896	3,997	3,911	3,859	3,810	1 052	4,004	4,073	4,155	4,210	4,253	4,310	4,378	4,436	4,503	4,558	0.3%	2.2%	1.8%	
(9)		Average KWH	Consumption	Per Customer	15,096	15,181	15,032	14,755	14,274	14,049	15,036	14,028	13,303	13,301	13 773		13,370	13,325	13,131	12,959	12,847	12,862	12,865	12,898	12,919	-1 4%	-0.5%	-0.3%	
(5)	ential	Average	No. of	<u>Customers</u>	345,467	350,404	360,930	371,213	374,709	374,010	375,847	378,157	379,897	382,599	385 620		389,687	395,858	403,166	410,063	416,572	422,699	428,170	433,064	437,567	1 1%	1.4%	1.4%	
(4)	Rural and Residentia			GWH	5,215	5,320	5,425	5,477	5,349	5,254	5,651	5,305	5,054	5,089	5 211		5,210	5,275	5,294	5,314	5,352	5,437	5,508	5,586	5,653	-0.3%	0.9%	1.1%	
(3)	R	Members	per	<u>Household*</u>	2.56	2.56	2.57	2.56	2.55	2.54	2.54	2.55	2.56	2.56	0 KK	0.10	2.53	2.52	2.51	2.50	2.50	2.49	2.49	2.49	2.49	%U U	-0.4%	-0.3%	
(2)				Population*	776,870	786,860	792,610	791,860	793,380	795,610	801,440	809,280	822,920	833,420	002 200		856,000	870,970	886,460	902,100	917,840	933,430	947,930	961,460	974,490	0 8%	1.6%	1.6%	
(1)				<u>Year</u>	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	100	107	2015	2016	2017	2018	2019	2020	2021	2022	2023	04-13	13-18	13-23	

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

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

(6) (7) (8)	Street & Other Sales Total Sales	to Public	Lighting Authorities Consumers	<u>GWH</u> <u>GWH</u> <u>GWH</u>	23 0 11,046	0	24 0 11,429	-	0	0	0	0		0	27 0 11,129		0	0		27 0 11,443	0	0 11	0	, t	-	-	%0.00	- T `	- T ` %0.0		- T %0.0 %0.0	- T , , , , , , , , , , , , , , , , , ,	- T X X %0.0
(c)		Railroads	and Railways	GWH	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	%0.0 %0.0	0.0% 0.0%	%0.0 %0.0	0.0 %0.0	0.0 %0.0 %0.0
(4)		Average KWH	Consumption	Per Customer	7,569,053										6,265,113	6,170,095	6,138,397		6,088,892		6,057,859						-1.5%	-1.5%	-1.5% -1.5%	-1.5% -1.5%	-1.5% -1.5%	-1.5%	-1.5% -1.5% -0.9%
(3)	Industrial	Average	No. of	<u>Customers</u>	279	295	294	303	291	280	275	273	267	258	277	284	286	288	288	288	290	291	292	293			-0.9%	-0.9% 200-	-0.9% 2.2%	-0.9% 2.2%	-0.9% 2.2%	-0.9% 2.2%	-0.9% 2.2% 1.3%
(2)																								1,756			-2.4%	-2.4% 0.6%	-2.4% 0.6%	-2.4% 0.6%	-2.4% 0.6%	-2.4% 0.6%	-2.4% 0.6% 0.3%
(1)				Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		CAAG	<b>CAAG</b> 04-13	<b>CAAG</b> 04-13	<b>CAAG</b> 04-13 13-18	<b>CAAG</b> 04-13 13-18	<b>CAAG</b> 04-13 13-18	<b>CAAG</b> 04-13 13-18	<b>CAAG</b> 04-13 13-18 13-23

GULF POWER COMPANY

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

(9)	Total No. of <u>Customers</u> 398,200	404,086 415,185 425,793 429,302	428,206 430,030 432,403 434,441 437,698	441, 151 445, 632 452, 374 460, 352 467, 879 474, 985 481, 674 487, 650 492, 996 492, 996	1.1% 1.3% 1.3%
(5)	Other Customers ( <u>Average No.)</u> 474	472 482 493	502 559 572 579	578 578 578 578 578 578 578 578	2.3% 0.0% 0.0%
(4)	Net Energy for Load <u>GWH</u> 12,162	12,322 12,586 12,671 12,617	11,975 12,518 12,086 11,598 11,552	12,185 12,125 12,292 12,451 12,559 12,659 12,877 13,040 13,179	-0.6% 1.5% 1.3%
(3)	Utility Use & Losses <u>GWH</u> 727	666 743 733 676	682 750 663 602	713 708 716 727 727 754 754 762	-2.1% 3.7% 2.4%
(2)	Sales for Resale <u>GWH</u> 389	418 415 398	390 382 339 330	343 354 376 376 389 389 415 415	-1.8% 2.9% 2.5%
(1)	<u>Year</u> 2004	2005 2006 2007 2008	2009 2010 2011 2012 2013	2014 2015 2016 2017 2019 2020 2021 2022 2023	<b>CAAG</b> 04-13 13-23

Note: Sales for Resale and Net Energy for Load include contracted energy allocated to certain customers by Southeastern Power Administration (SEPA).

,ponoc	(10)	Net Firm	<u>Demand</u>	2,431	2,436	2,483	2,634	2,541	2,546	2,525	2,535	2,351	2,362	2,512	2,501	2,526	2,545	2,556	2,575	2,610	2,641	2,675	2,703		-0.3%	1.6%	1.4%
	(6)	Comm/Ind	<b>Conservation</b>	159	164	173	180	182	186	192	198	212	220	224	228	233	238	243	247	252	256	261	265		3.6%	2.0%	1.9%
	(8)	Comm/Ind Load	<u>Management</u>	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	<u>Conservation</u>	161	167	171	175	176	177	178	186	206	229	248	267	284	301	318	334	350	366	382	398		4.0%	6.8%	5.7%
Base Case	(9)	Residential Load	<u>Management</u>	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%
Base	(5)		<u>Interruptible</u>	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)		<u>Retail</u>	2,663	2,674	2,734	2,891	2,807	2,817	2,807	2,830	2,693	2,736	2,912	2,922	2,967	3,007	3,038	3,076	3,130	3,180	3,233	3,280		0.3%	2.1%	1.8%
	(3)		<u>Wholesale</u>	89	94	93	66	91	92	88	89	76	74	72	74	76	77	79	80	82	83	85	86		-2.0%	1.3%	1.5%
	(2)		<u>Total</u>	2,752	2,768	2,828	2,989	2,898	2,909	2,896	2,919	2,769	2,810	2,984	2,996	3,043	3,084	3,117	3,156	3,212	3,263	3,318	3,366		0.2%	2.1%	1.8%
	(1)		<u>Year</u>	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	CAAG	04-13	13-18	13-23

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

GULF POWER COMPANY

Schedule 3.1 History and Forecast of Summer Peak Demand - MW

# **GULF POWER COMPANY**

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

(10)	Net Firm	Demand	2,070	2,130	2,072	2,224	2,370	2,320	2,553	2,495	2,139	1,766	2,370	2,299	2,326	2,346	2,357	2,375	2,406	2,436	2,467	2,494		-1.7%	5.9%	3.5%
(6)	Comm/Ind	Conservation	135	137	142	146	147	150	154	157	165	169	171	173	175	177	179	181	183	185	187	188		2.5%	1.2%	1.1%
(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	240	250	262	275	276	287	289	297	317	341	360	378	395	413	431	448	465	482	499	516		3.9%	4.8%	4.2%
(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%
(2)		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	2,358	2,426	2,382	2,554	2,696	2,659	2,890	2,851	2,532	2,205	2,825	2,773	2,816	2,854	2,883	2,918	2,966	3,013	3,061	3,106		-0.7%	5.5%	3.5%
(3)		Wholesale	87	92	94	91	97	98	107	66	89	70	75	77	80	82	84	85	87	89	91	93		-2.3%	3.6%	2.8%
(2)		Total	2,445	2,518	2,476	2,644	2,793	2,757	2,996	2,950	2,621	2,275	2,900	2,850	2,896	2,936	2,966	3,003	3,053	3,102	3,152	3,198		-0.8%	5.4%	3.5%
(1)		Year	03-04	04-05	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	CAAG	04-13	13-18	13-23

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

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# History and Forecast of Annual Net Energy for Load - GWH Schedule 3.3

**Base Case** 

(9) Load 57.0% 57.2% 54.9% 56.2% 56.2% 55.3% 55.3% 55.3%	55.5% 55.5% 55.5% 55.7% 55.7% 55.7%
(8) Net Energy <u>for Load</u> 12,162 12,586 12,586 12,586 11,975 11,975 11,552 11,552 11,552 12,185 12,185 12,125	12,232 12,378 12,559 12,732 13,040 13,179
(7) Utility Use <u>&amp; Losses</u> 727 666 676 682 682 682 663 663 663 602 602 713	719 722 727 737 745 754 754
(6) <u>Wholesale</u> 389 415 415 417 339 330 339 330 333 354	300 374 382 399 407 415
(5) <u>Retail</u> 11,046 11,521 11,523	11,210 11,284 11,597 11,597 11,597 11,870 11,993
(4) Comm/Ind 203 303 319 322 322 323 327 327 327 327 327 327 327	435 461 473 485 529 521
(3) Residential <u>Conservation</u> 348 357 357 365 378 378 378 378 378 378 378 378 375 378 378 375 378 378 376 378 378 378 378 378 378 378 378 378 378	7.38 859 873 973 1,029 1,143
(2) <u>Total</u> 12,813 13,373 13,373 13,373 13,373 12,453 12,502 13,226 12,502 13,227 13,226 13,227 13,226 13,227 13,226 13,227 13,226 13,273 13,273 13,273 13,273 13,273 13,273 13,273 13,273 13,273 13,273 13,273 13,273 13,273 13,273 13,276 13,273 13,273 13,276 12,813 12,813 13,273 13,276 12,813 12,726 13,2727 13,276 13,276 13,276 13,276 13,276 13,276 13,276 13,276 13,276 13,276 13,276 13,276 13,276 13,276 13,277 13,276 13,277 13,276 13,277 13,276 13,277 13,276 13,277 13,276 13,277 13,277 13,277 13,276 13,277 13,276 13,277 13,276 13,277 13,276 13,277 13,276 13,277 13,276 13,277 13,276 13,277 13,276 13,277 13,276 13,276 13,276 13,276 13,276 13,276 13,276 13,276 13,276 13,277 13,276 13,277 13,276 13,277 13,276 13,277 13,276 13,277 13,276 13,277 13,276 13,277 14,277	13,465 13,771 13,948 14,190 14,404 14,635 14,843

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

-0.2% -0.1% 0.0%

-0.6% 1.5% 1.3%

-2.1% 3.7% 2.4%

-1.8% 2.9% 2.5%

-0.4% 1.3% 1.2%

3.1% 2.9% 2.7%

5.3% 9.3% 7.6%

-0.3% 2.0% 1.7%

13-18 13-23

**CAAG** 04-13

2014 2015 2015 2017 2017 2018 2019 2019 2020 2021 2021 2023 2023

Year 2005 2005 2005 2007 2007 2009 2009 2011 2011 2013 2013

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**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	954	805	825	827	1,040	1,209	1,324	1,305	1,144	950	819	923
(9)	2015	Foreca	Peak Demand	MW	2,299	2,068	1,701	1,730	2,282	2,407	2,501	2,469	2,301	2,069	1,629	2,134
(2)	4	ast	NEL	GWH	977	820	838	837	1,052	1,217	1,328	1,306	1,143	944	811	912
(4)	2014	Forec	Peak Demand	MW	2,370	2,120	1,734	1,753	2,313	2,426	2,512	2,474	2,299	2,051	1,611	2,113
(3)	с	al	NEL	GWH	856	765	859	804	953	1,174	1,185	1,208	1,117	927	804	899
(2)	2013	Actu	Peak Demand	MW	1,739	1,731	1,840	1,611	2,069	2,312	2,305	2,362	2,245	1,998	1,783	1,829
(1)			I	<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)

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Schedule 5 Fuel Requirements

(16)	2023	None 3,928	0 0 None None None	15 13 None None	37,374 0 35,861 1,513	360
(15)	2022	None 4,024	0 None None None	11 None None	55,232 0 55,232 0	360
(14)	2021	None 3,528	0 None None None	10 None None	56,506 0 56,506 0	360
(13)	2020	None 3,265	0 None None None	9 9 None None	56,576 0 56,576 0	361
(12)	2019	None 2,901	0 None None None	13 13 None 0 None	59,418 0 59,418 0	360
(11)	2018	None 2,691	0 None None None	10 None None	62,524 0 61,328 1,196	360
(10)	2017	None 2,492	0 None None None	9 9 None None	65,141 0 63,945 1,196	360
(6)	2016	None 2,019	0 None None None	8 None None None	63,474 0 62,275 1,199	361
(8)	2015	None 2,012	0 None None None	13 13 None 0 None	62,419 0 61,223 1,196	310
(7)	2014	None 2,461	0 None None None	10 10 None 0 None	61,070 0 59,874 1,196	240
(9)	Actual 2013	None 2,799	0 0 None None	18 16 None None	63,160 681 61,211 1,268	254
(5)	Actual 2012	None 2,769	0 None None None	17 15 None None	76,318 4,072 69,552 2,694	273
(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 CC CT Diesel	Total Steam CC CT Diesel	Total Steam CC CT	
(2)	Fuel Requirements	<ol> <li>Nuclear</li> <li>Coal</li> </ol>	Residual	Distillate	<ul><li>(13) Natural Gas</li><li>(14)</li><li>(15)</li><li>(16)</li></ul>	(17) Other <sup>(A)</sup>
(1)		(1) (2)	(3) (5) (5) (4) (3)	(8) (9) (11) (12) (12)	(13) (14) (15) (16)	(17)

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

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Schedule 6.1 Energy Sources

(1) (2)	(3)	(4)	(5)	(9)	(2)	(8)	(6)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Energy Sources	ources	Units	Actual 2012	Actual 2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
(1) Annual Firm Interchange	erchange	GWH	(4,555)	(3,174)	(2,140)	(1,444)	(1,551)	(2,807)	(2,836)	(2,865)	(3,167)	(3,592)	(4,405)	(1,469)
(2) Nuclear		GWH	None	None	None	None	None	None	None	None	None	None	None	None
(3) Coal		GWH	5,391	5,601	5,449	4,527	4,649	5,724	6,194	6,696	7,564	8,159	9,312	9,078
<ul> <li>(4) Residual</li> <li>(5)</li> <li>(6)</li> <li>(7)</li> <li>(8)</li> </ul>	Total Steam CC Diesel	HWD GWH GWH GWH	0 0 None None	0 0 None None	0 0 None None	0 0 None None	0 0 None None None	0 0 None None None	0 0 None None	0 0 None None	0 0 None None None	0 0 None None	0 0 None None	0 None None None
<ul> <li>(9) Distillate</li> <li>(10)</li> <li>(11)</li> <li>(12)</li> <li>(13)</li> </ul>	Total Steam CC Diesel	6 WH 6 WH 6 WH	0.7 None 0.7 None	0.6 None 0.6 None	0.0 None None None	0.0 None 0.0 None	0.0 None 0.0 None	0.0 None 0.0 None	0.0 None 0.0 None	0.0 None 0.0 None	0.0 None 0.0 None	0.0 None 0.0 None	0.0 None 0.0 None	0.8 None 0.8 None
<ul> <li>(14) Natural Gas</li> <li>(15)</li> <li>(16)</li> <li>(17)</li> </ul>	Total Steam CC CT	GWH GWH GWH GWH	10,517 352 9,813 352	8,834 52 8,622 160	8,580 0 8,499 81	8,776 0 8,695 81	8,919 0 8,837 82	9,181 0 9,100 81	8,808 0 8,727 81	8,438 0 8,438 0	8,040 0 8,040 0	8,010 0 8,010 0	7,828 0 7,828 0	5,258 0 5,113 145
(18) NUGs		GWH	244	290	296	266	275	280	285	290	295	300	305	311
(19) Net Energy for Load NOTE: Line (18) inc	Net Energy for Load GWH 11,598 11,552 12,185 12,125 NOTE: Line (18) includes energy received from Non-Renewable and Renewable resources.	GWH av received	11,598 1 from Non-Re	11,552 enewable ar	12,185 Id Renewab	12,125 le resources	•	12,292 12,378 12,451 12,559 12,732 1 See Schedule 6.3 for details on Gulf's renewable resources .	12,451 details on G	12,559 Sulf's renewa	12,732 able resource	12,877 	13,040	13,179
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(16)	2023	8) (11.15)	le None	1 68.88		0.01 None None 0.01 None	3 39.90 0 0.00 3 38.80 1.10	4 2.36	0 100.00
(15)	2022	(33.78)	None	71.41	0.00 0.00 Non Non	0.00 None 0.00 None	60.03 0.00 60.03 0.00	2.34	100.00
(14)	2021	(27.89)	None	63.36	0.00 0.00 None None	0.00 None None 0.00 None	62.20 0.00 62.20 0.00	2.33	100.00
(13)	2020	(24.87)	None	59.41	0.00 0.00 None None	0.00 None 0.00 None	63.15 0.00 63.15 0.00	2.32	100.00
(12)	2019	(22.81)	None	53.32	0.00 0.00 None None	0.00 None 0.00 None	67.19 0.00 67.19 0.00	2.31	100.00
(11)	2018	(22.78)	None	49.75	0.00 0.00 None None	0.00 None 0.00 None	70.74 0.00 70.09 0.65	2.29	100.00
(10)	2017	(22.68)	None	46.24	0.00 0.00 None None	0.00 None 0.00 None	74.17 0.00 73.52 0.65	2.26	100.00
(6)	2016	(12.62)	None	37.82	0.00 0.00 None None	0.00 None 0.00 None	72.56 0.00 71.89 0.67	2.24	100.00
(8)	2015	(11.91)	None	37.34	0.00 0.00 None None	0.00 None 0.00 None	72.38 0.00 71.71 0.67	2.19	100.00
(2)	2014	(17.56)	None	44.72	0.00 0.00 None None	0.00 None 0.00 None	70.41 0.00 69.75 0.66	2.43	100.00
(9)	Actual 2013	(27.47)	None	48.49	0.00 0.00 None None	0.01 None 0.01 None	76.47 0.45 74.64 1.39	2.51	100.00
(5)	Actual 2012	(39.27)	None	46.48	0.00 0.00 None None	0.01 None 0.01 None	90.68 3.04 84.61 3.04	2.10	100.00
(4)	Units	%	%	%	% % % % %	% % % % %	% % % %	%	%
(3)	(0	ge			Total Steam CC Diesel	Total Steam CC Diesel	Total Steam CC CT		
(2)	Energy Sources	Annual Firm Interchange	Nuclear	Coal	Residual	Distillate	<ul><li>(14) Natural Gas</li><li>(15)</li><li>(16)</li><li>(17)</li></ul>	(18) NUGs	(19) Net Energy for Load
(1)		(1)	(2)	(3)	(4) (5) (7) (8)	(9) (10) (11) (12) (13)	(14) (15) (16) (17)	(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 .

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GULF POWER COMPANY

Schedule 6.2 Energy Sources SACE 1st Response to Staff 020789

# CHAPTER III

# PLANNING ASSUMPTIONS AND PROCESSES

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# THE INTEGRATED RESOURCE PLANNING PROCESS

As previously mentioned, Gulf participates in the SES IRP process. This 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 acts 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 modeling, evaluation of dispatchable and non-dispatchable demandside 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 currently planned retirement dates, as well as the economics and appropriateness of possible repowering over the planning horizon. 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. 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, which has as its planning criterion a 15% reserve margin target for the year 2017 and beyond. This 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. It also balances the cost of adding additional generation with the societal 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<sup>™</sup>. 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<sup>™</sup> uses a dynamic programming technique to develop the optimum resource mix. This technique allows PROVIEW<sup>™</sup> 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<sup>™</sup> 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<sup>™</sup> 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 involved in recommending the type and timing of its unit additions. When all companies are satisfied with their capacity additions, and the sum of these additions matches the system need, 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 medium 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.

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In prior years, Gulf has entered into a series of purchased power 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 purchased power 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 purchased power 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 purchased power 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. Coal commodity domestic 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, SES prepares commodity price forecasts for fourteen different coal classifications used on the SES. Because natural gas does not possess the same quality variations as coal, SES prepares a single commodity price forecast for gas at Henry Hub, and applies a basis differential between Henry Hub and the various pipelines serving SES plants. Two price forecasts are developed for oil, based on grade of oil, sulfur, and heat content.

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

process. Similarly, when site-specific unit additions are under consideration, sitespecific transportation costs are developed for each option.

# SES GENERIC FUEL FORECAST

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. The long-term forecasts are governed by the SCS Executive Planning Coordination Team (Executive PCT). 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 the cross-functional Planning Coordination Team (PCT) with final approval from the Executive PCT and/or Southern Company Management Council.

Fuel market assumptions, developed in collaboration between CRA and SES, are integrated into CRA's model to develop forecasted prices used in the IRP. These prices are developed for existing units and potential green field/brown field sites for future expansion, and include both commodity and transportation prices.

# **COAL PRICE FORECAST**

In 2013, coal production in the United States reached 984 million short tons, a decrease from the 1.056 billion short tons for 2012. The Central Appalachian region in the U.S. experienced a 13% decrease in production. The Interior region (Illinois Basin) of the U.S. recorded a 4% increase in production. The Western U.S. region (Powder River Basin, Colorado, Utah and Wyoming) experienced a 3% decline in production.

Over the past few years, global demand for coal has been steadily increasing, especially in India and China. Asian demand for steam coal remains robust and is being supplied mainly from Indonesia and Australia. European demand for coal has been flat and comes from Colombia and the U.S. for immediate coal supply.

From an overall global market perspective, coal prices decreased from levels experienced in 2012 due to lower demand. In the U.S., this decrease was due primarily to relatively lower domestic natural gas prices that contributed to displacement of coal generation by natural gas-fueled generating units and by decreased demand for exported coals into Europe.

Central Appalachian and Colombian coal prices have been relatively flat since the beginning of 2013. As mentioned in the preceding paragraph, this softness in the market is attributable to the continued downturn in both U.S. and European coal demand. Other factors placing downward pressure on demand and therefore pricing for these coals are depletion, environmental, safety, and permitting issues. In recent years, the production trend from the Central

Appalachian region has also been decreasing as a result of higher mining cost and the widespread installation of scrubbers at eastern power stations.

Conversely, the production trend from the Illinois Basin has been steadily increasing as a result of these same factors. Some Eastern utilities have switched from Central Appalachian coals to the higher sulfur Illinois Basin coals. In the longer term, productivity in the Illinois Basin is expected to improve as less productive mines are replaced by long wall operations.

Historically, Powder River Basin (PRB) regional coal production has grown at 5 percent per year over sustained periods, but recently production levels have decreased. Production costs 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 economics of surface mining in the region remain favorable, particularly relative to eastern coal options.

Demand for Western Bituminous coal is expected to remain flat as several generators in Colorado that currently consume this coal have announced that they will cease burning coal by 2015. Also, high transportation costs make Western Bituminous coals delivered to the Southeast less economic.

# NATURAL GAS PRICE FORECAST

Gas Daily Henry Hub prices averaged \$3.72 in 2013. That was almost a \$1.00 increase over the average of \$2.75 for 2012. Supported by cold weather, gas prices rose in the first quarter from a low of \$3.30 average in February to a high of \$3.80 average in March. Entering the second quarter, due to prolonged

cold weather, both April and May averaged above \$4.00 at \$4.16 and \$4.03 respectively. When temperatures moderated in the summer months, gas prices retreated slightly to an average of \$3.84 in June. Lackluster demand from a mild summer peak season resulted in the gas prices falling to an average low of \$3.42 in August. With the renewed support of winter, natural gas prices registered at an average low of \$3.63 in November, to back above \$4.00, with a December average of \$4.22. The overall year over year increase in gas prices led to a significant reduction in natural gas consumed by power generation in 2013. During the April – October period alone, national natural gas consumption for power generation was 2.9 Billion cubic feet (Bcf)/day lower than in 2012. The higher gas prices in 2013 also led to a modest increase in gas production, with an emphasis on shale gas production. Natural gas storage levels began the withdrawal season in November 2013 at healthy levels due to this increase in production combined with the reduction in natural gas used by power generation. Inventory levels began the 2013 withdrawal season at 3.8 trillion cubic feet (Tcf), 89 Bcf (2.3%) less than the previous year, but 15 Bcf (0.4%) above the 5-year average. Beginning in 2014, significantly colder weather prompted record setting withdrawals from storage as well as record delivered prices in the gas market. By the end of February 2014 withdrawals from storage, for six of the previous nine weeks, have been equal to or greater than 230 Bcf, with a record high of 287 Bcf withdrawn for the week ending January 10, 2014. The EIA announced on February 28, 2014 that working gas in storage was at 1.2 Tcf, the lowest level since 2004. Industry analysts are currently predicting that storage levels will be about 1 Tcf at the end of the heating season. As a result of these low gas

storage inventories, industry analysts believe that a significant increase in production or a decrease in demand will be required to rebuild storage stocks ahead of next winter. The uncharacteristic winter also led to record gas prices at the beginning of 2014 in the Eastern half of the country. The Henry Hub average for January and February 2014 was \$4.60 and \$5.86 respectively. Henry Hub cash traded as high as \$7.84 in February, registering the largest price movements since January 2010.

The EIA forecasts the Henry Hub cash price to average \$4.17 for 2014, an increase of \$0.27/MMBtu from the January forecast. Forecasters believe gas will likely need to trade higher to refill gas storage.

# NATURAL GAS AVAILABILITY

Liquefied natural gas (LNG) imports continued their decline in 2013 because of higher prices in Europe and Asia compared to the relatively low prices in the United States. While several companies, with government approval, are planning to export LNG from the United States, the winter 2013-2014 price spikes in natural gas and wholesale electricity prices has renewed interest in limiting export volumes in favor of domestic usage.

U.S. onshore natural gas production is expected to continue increasing over the next two years, with strong output growth in the Marcellus Shale offsetting production declines in the Gulf of Mexico. Overall U.S. natural gas production is expected to grow 2.1% this year and 1.3% in 2015. The continued growth in domestic production should provide sufficient gas supply to meet operating needs.

# STRATEGIC ISSUES

Gulf's three PPAs provide supply-side diversity and the flexibility for Gulf to adapt its future generation expansion plans to changing market conditions without negative financial impacts to the Company and its customers. Two of these PPAs currently supply 494 MW of firm peaking capacity from dual-fuel fired combustion turbines (CT), and they will continue to be available to serve system load until their expiration on May 31, 2014. Beginning in June 2014, Gulf's third PPA, the Shell PPA, will provide 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 that require lower emissions from power plants may lead to retirements of Gulf's existing coal units and the addition of new gas-fired units 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 the addition of Gulf's Shell PPA that provides firm gas-fired generating capacity from June 2014 through May 2023 of 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 potential new requirements. This approach is an absolute necessity in maintaining the flexibility to match a dynamic regulatory environment with the variety of available compliance options.

Gulf has evaluated a number of options for its coal-fired generation to comply with emission standards required by the Environmental Protection Agency's (EPA) final Mercury and Air Toxics Standards (MATS) rule and EPA's proposed land and water rules. The Company has finalized its MATS compliance strategies for Plants Crist and Daniel, and continues to evaluate compliance strategies for Plant Smith that could satisfy requirements for MATS and the EPA's proposed water quality and coal combustion residuals rules. These rules could significantly impact the operations of Gulf's existing coal-fired units and could lead to changing fuel sources for certain units, the addition of emission control equipment, and unit retirements.

As described in Gulf's 2014 Air Quality Compliance Program Update that is 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. Both injection systems will be placed in service with the scrubber during fourth quarter of 2015.

Gulf continues to analyze options for compliance with the MATS rule at Plant Smith. Once the Company determines the most cost-effective overall compliance options for Plant Smith, Gulf will submit revisions to the environmental Compliance Program for the Commission's review. The final plans for MATS compliance could include land and water improvements necessary to meet regulatory requirements.

Evaluation of potential compliance plans for Plant Scholz in response to MATS requirements and future land and water regulations indicates that significant capital investments in equipment to reduce emissions and meet the requirements of future environmental regulations would not be cost effective. Therefore, as previously mentioned, Plant Scholz will be retired by April 2015.

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. Until the evaluation of various compliance options for Plant Smith is completed, continued operation of Smith's coal-fired units will be assumed for the 2014-2023 period. 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 (SO<sub>2</sub>) and nitrogen oxides (NO<sub>X</sub>). Gulf's compliance actions for SO<sub>2</sub> 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<sub>2</sub> emissions at these coal-fired units. In addition to reducing SO<sub>2</sub> emissions, Gulf has installed low NO<sub>X</sub> burners and additional post-combustion NO<sub>X</sub> controls on all but two of its coal-fired units. The Company utilizes a system-wide NO<sub>X</sub> emissions averaging plan to meet the requirements of the Act.

#### Air Quality Standards for Ozone

In 1997, the 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<sub>X</sub> 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 Controls (SNCR) and over-fire air on Crist Unit 6 in February 2006 and SNCR controls on Crist Unit 4 and Unit 5 in April 2006. These controls have achieved the overall plant-wide NO<sub>X</sub> emissions average of 0.20 lbs/mmbtu as outlined in the FDEP Agreement. Gulf also retired Crist Unit 1 in March 2003 and Crist Units 2 and 3 in May 2006. The Crist 6 SNCR was

replaced with SCR technology in April 2012 in order to further reduce  $NO_X$  emissions.

In March 2008, the EPA issued new rules establishing a more stringent eight-hour ozone NAAQS. In January 2011 the EPA proposed further reductions in the eight-hour standard which are expected to be finalized in the 2014 timeframe. This revised eight-hour ozone standard could result in the designation of new non-attainment areas.

### 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 January 2013, the EPA published a final rule that increases the stringency of its annual fine particulate matter NAAQS. The new standard could result in new non-attainment areas.

### Air Quality Standards for SO<sub>2</sub> and NO<sub>2</sub>

On December 8, 2009, the EPA also proposed revisions to the NAAQS for  $SO_2$ . These revisions, which include the establishment of a new one-hour standard, became effective in August 2010. No areas within the area served by Gulf have been designated as non attainment areas. However, the EPA may designate additional areas as non attainment areas in the future. Implementation of the revised  $SO_2$  NAAQS could result in additional required reductions in  $SO_2$  emissions and increased compliance and operation costs.

Revisions to the NAAQS for Nitrogen Dioxide (NO<sub>2</sub>), 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 NO<sub>2</sub> standard, based on current ambient air quality monitoring data, the new NO<sub>2</sub> NAAQS could result in additional compliance and operational costs for units that require new source permitting.

### **Clean Air Interstate Rule**

The EPA issued its final Clean Air Interstate Rule (CAIR) in March 2005. This cap-and-trade rule addresses power plant SO<sub>2</sub> and NO<sub>x</sub> emissions that were found to contribute to non-attainment of the eight-hour ozone and fine particulate matter standards in downwind states. Twenty-eight eastern states, including Florida and Mississippi, are subject to the requirements of the rule. The rule calls for additional reductions of NO<sub>x</sub> and/or SO<sub>2</sub> to be achieved in two phases, 2009/2010 and 2015, respectively. 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 August 2011, the EPA adopted the Cross State Air Pollution Rule (CSAPR) to replace CAIR effective January 1, 2012. Like the CAIR, the CSAPR was intended to address interstate emissions of SO<sub>2</sub> and NO<sub>x</sub> that interfere with downwind states' ability to meet or maintain national ambient air quality standards for ozone and/or particulate matter. In August 2012, the U.S. Court of Appeals for the District of Columbia Circuit vacated the CSAPR in its entirety and ordered the EPA to continue administration of CAIR pending a final decision. Review of the U.S. Court of Appeals for the District of Appeals for the District of Columbia for the District of Columbia Circuit vacated the CSAPR in its entirety and ordered the EPA to continue administration of CAIR pending a final decision.

The states of Florida and Mississippi have completed plans to implement CAIR, and emissions reductions are being accomplished by the installation and operation of emission controls at the Gulf's coal-fired facilities and/or by the purchase of emission allowances. Decisions regarding Gulf's CAIR compliance strategy were made jointly with the CAVR and CAMR compliance plans due to co-benefits of proposed controls.

### Clean Air Visibility Rule

The Clean Air Visibility Rule (CAVR) was finalized in July 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 by 2018 and for each 10-year period thereafter. In 2005, the EPA determined that compliance with the CAIR satisfies BART obligations under CAVR, but, on June 7, 2012, the EPA issued a final rule replacing CAIR with CSAPR as an alternative means of satisfying BART obligations. The 2012 vacatur of CSAPR created additional uncertainty with respect to whether additional controls may be required for CAVR and BART compliance. Given the pending legal challenge to the CSAPR, it remains uncertain whether additional controls may be required for CAVR and BART compliance.

### Mercury and Air Toxics Standards

In March 2005, the EPA published the final Clean Air Mercury Rule (CAMR), a cap-and-trade program for the reduction of mercury emissions from

coal-fired power plants. In February 2008, however, the U.S. Court of Appeals for the District of Columbia Circuit issued an opinion vacating the federal CAMR, thus eliminating requirements for generating facilities to install mercury controls to meet the CAMR cap and trade emission limits.

In a separate proceeding, the U.S. District Court for the District of Columbia, under a consent decree, required the EPA to develop a Maximum Achievable Control Technologies (MACT) rule that would limit the emission of numerous hazardous air pollutants, including mercury, from power plants. On February 16, 2012, the EPA published 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. Compliance for existing sources is required by April 16, 2015 unless a one year extension is granted by the state and local air permitting agency. In November 2012 the EPA proposed a rulemaking to reconsider certain new source and startup/shutdown issues for existing sources in April 2013 but has not acted on the existing source reconsideration.

Gulf has finalized compliance plans for Plants Crist and Daniel, and is evaluating potential MATS compliance options for Plant Smith. Compliance for Plants Crist and Smith is currently required by April 16, 2015. A one-year extension has been received for Plant Daniel extending its MATS compliance deadline to April 16, 2016.

### EMERGING ENVIRONMENTAL REGULATIONS

### 316(B) Intake Structures

The EPA published a proposed rule in April 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. Compliance with the final rule may require changes to existing cooling water intake structures at certain Gulf generating facilities, and new generating units constructed at existing plants would be required to install closed cycle cooling towers. The EPA entered into an amended settlement agreement to issue a final rule by April 17, 2014. Given these requirements, the Company may be subject to significant additional compliance costs and capital expenditures that could affect future unit retirement decisions.

### **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 June 7, 2013, the EPA published a proposed rule requesting comments on options for addressing certain waste streams from steam electric power plants. The EPA has agreed to finalize the rule by May 2014. The regulations could result in the installation of additional controls on certain Company facilities. The impact of the revised

effluent guidelines will depend on the specific technology requirements of the final rule and, therefore, cannot be determined at this time.

### 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 expected to be effective during 2014. These regulations could result in additional compliance costs that could affect future unit retirement and replacement decisions. The ultimate impact of these state standards will depend on further regulatory action regarding implementation of these standards and cannot be determined at this time.

### **Coal Combustion Residuals**

The EPA continues to evaluate regulation of coal combustion residuals (ash and gypsum) under federal solid and hazardous waste laws. In June 2010, the EPA issued a proposal rule and requested comments on two options regarding the management and disposal of coal combustion byproducts. Adoption of either option, either to further regulate coal combustion byproducts as a solid waste or a hazardous waste, could have a significant impact on the Company's management, beneficial use, and disposal of such byproducts. Environmental groups and other parties have filed lawsuits in the U.S. District Court for the District of Columbia seeking to require the EPA to complete its rulemaking process and issue final regulations pertaining to the regulation of CCRs.

On September 30, 2013, the U.S. District Circuit for the District of Colombia issued an order granting partial summary judgment to the

environmental groups and other parties, ruling that the EPA has a statutory obligation to review and revise, as necessary, the federal solid waste regulations applicable to CCRs. On January 29, 2014, the EPA filed a consent decree requiring the agency to take final action regarding the proposed regulation of CCRs as solid waste by December 19, 2014.

### **Global Climate Issues**

The EPA regulates greenhouse gases under the Prevention of Significant Deterioration (PSD) and Title V operating permit programs of the Clean Air Act. Over the past several years, many proposals to reduce greenhouse gas emissions have been considered by the U.S. Congress. Although Federal legislative proposals that would impose mandatory requirements related to greenhouse gas emissions (GHG) may continue to be considered in Congress, the EPA is moving forward with regulation of greenhouse gases under the Clean Air Act.

In April 2007, the U.S. Supreme Court ruled that carbon dioxide (CO<sub>2</sub>) and GHGs could be considered "pollutants" under the CAA and that the EPA must decide whether emissions of these pollutants endanger public health and welfare. The EPA's final endangerment finding in December 2009 provided the "cause" for the EPA to regulate GHGs. Subsequent actions including the Light Duty Vehicle Rule in April 2010 made GHGs "regulated pollutants" under the CAA and triggered stationary source permitting requirements for GHGs. In May 2010, the EPA issued its final rule, known as the Tailoring Rule, governing how these programs would be applied to stationary sources, including power plants. This rule changed the permitting emission thresholds and detailed a phased

approach for GHG stationary source permitting requirements. As of January 2, 2011 new and modified stationary sources that have GHG emissions over the thresholds must go through the prevention of significant deterioration permitting process including installation of the best available control technology for  $CO_2$  and other GHGs.

EPA's the Endangerment Finding, the Light Duty Vehicle Rule, and the Tailoring Rule were challenged in the U.S. Court of Appeals for the District of Columbia Circuit, but in June 2012 the Court issued decisions to dismiss those challenges. On December 20, 2012, the U.S. Court of appeals for the District of Columbia Circuit rejected an industry-backed request to reconsider its decision to uphold the GHG regulations. On January 8, 2014, the EPA published reproposed regulations to establish standards of performance for greenhouse gas emissions from new fossil fuel steam electric generating units. A Presidential memorandum issued on June 25, 2013 also directs the EPA to propose standards, regulations, or guidelines for addressing modified, reconstructed, and existing steam electric generating units by June 1, 2014.

Although the ultimate outcome of these federal and state rulemaking activities cannot be determined at this time, additional restrictions on the Company's GHG emissions may result in additional compliance costs, including significant capital expenditures. These costs could affect future unit retirement and replacement decisions for a significant number of coal-fired generating units.

### 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 negotiated the sale of firm capacity and energy from specific generating units to several utilities outside the SES. Gulf sells through three contracts that became effective in June 2010. Two of the contracts end in December 2015 and May 2016, respectively, while the other contract will end in December 2019. Gulf's share of the capacity sales is included in the reserve calculation 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.

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### CHAPTER IV

### FORECAST OF FACILITIES REQUIREMENTS

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### **CAPACITY RESOURCE ALTERNATIVES**

### **POWER PURCHASES**

Gulf's use of purchased power arrangements 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, longerterm power purchases from the market will be factored into expansion studies in order to evaluate 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 longerterm 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. All commercially available generating technologies such as gas combustion turbine and combined cycle, conventional pulverized coal, 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 will 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 is committed to encouraging and promoting cost-effective renewable energy. Gulf believes that obtaining renewable energy supplies for its customers at costs comparable to those of conventional generating resources can provide the benefits of fuel diversity that will effectively supplement the Company's present and future capacity and energy needs. In efforts to further diversify its generation fuel mix, 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, and the amounts projected to be produced or purchased during the 2014-2023 planning cycle.

Gulf has purchased renewable energy produced by the Bay County Resource Recovery Facility through a negotiated PPA that was executed in 2008. This facility is located in Panama City, Florida and uses municipal solid waste to produce energy for delivery to Gulf on a non-firm basis. The facility that is operated and maintained by Engen, LLC will provide non-firm energy at fixed prices until the agreement expires in July 2014.

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.

Initially, the landfill gas supply was proven sufficient for the operation of two engines. As the gas collection system is expanded, the supply may be sufficient for a third unit. In anticipation of the potential additional landfill gas supply, Gulf, as indicated on Schedule 8 of this TYSP, is currently projecting to bring a third 1.6 MW generation unit on-line at its Perdido facility in the June 2015 timeframe.

Gulf also 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.

Gulf is prepared to secure renewable resources in the future if costeffective opportunities arise. If future solicitations ultimately result in projects that are competitive with resources that Gulf would otherwise develop, the Company will secure this renewable capacity and/or energy through a PPA or construct the facility itself.

## GULF POWER COMPANY

# Schedule 6.3 Renewable Energy Sources

				1_				
(13)	2023	4.5	37,080 0	37,080	0.2	0.3	0.3	68 varies
(12)	2022	4.5	37,080 0	37,080	0.2	0.3	0.2	68 varies
(11)	2021	4.5	37,080 0	37,080	0.2	0.3	0.2	68 varies
(10)	2020	4.5	37,184 0	37,184	0.2	0.3	0.2	68 varies
(6)	2019	4.5	37,080 0	37,080	0.2	0.3	0.2	68 varies
(8)	2018	4.5	37,080 0	37,080	0.2	0.3	0.2	68 varies
(2)	2017	4.5	37,080 0	37,080	0.2	0.3	0.2	68 varies
(9)	2016	4.5	37,184 0	37,184	0.2	0.3	0.3	68 varies
(2)	2015	4.5	31,952 0	31,952	0.2	0.3	0.2	68 varies
(4)	2014	3.0	24,720 42,220	66,940	0.1	0.5	0.5	68 varies
(3) Actuals	2013	3.0	25,240 4,226	29,466	0.1	0.6	0.4	68 varies
(2)		Perdido MW 3.0	Perdido MWh Bay County MWh	Total MWh	% of Capacity Mix	% of NEL	% of Fuel Mix	MW MWh (B)
(1)	Renewable Energy Sources (A)	(1) Renewable Generating Capacity						(2) Self-Service Generation By Renewable Generation

(A) Owned and/or Purchased by Gulf.(B) 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 occurring in June 2023. 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 and at Caryville in Holmes County as potential sites for locating future generating unit(s) 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 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 250 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 80 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 357 MW of steam generation, 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 81 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. As shown on Schedule 1, the existing Plant Scholz facility consists of 92 MW of steam generation.

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

A USGS map showing the general location of the Plant Scholz property is found on page 82 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 83 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 84 of this chapter.

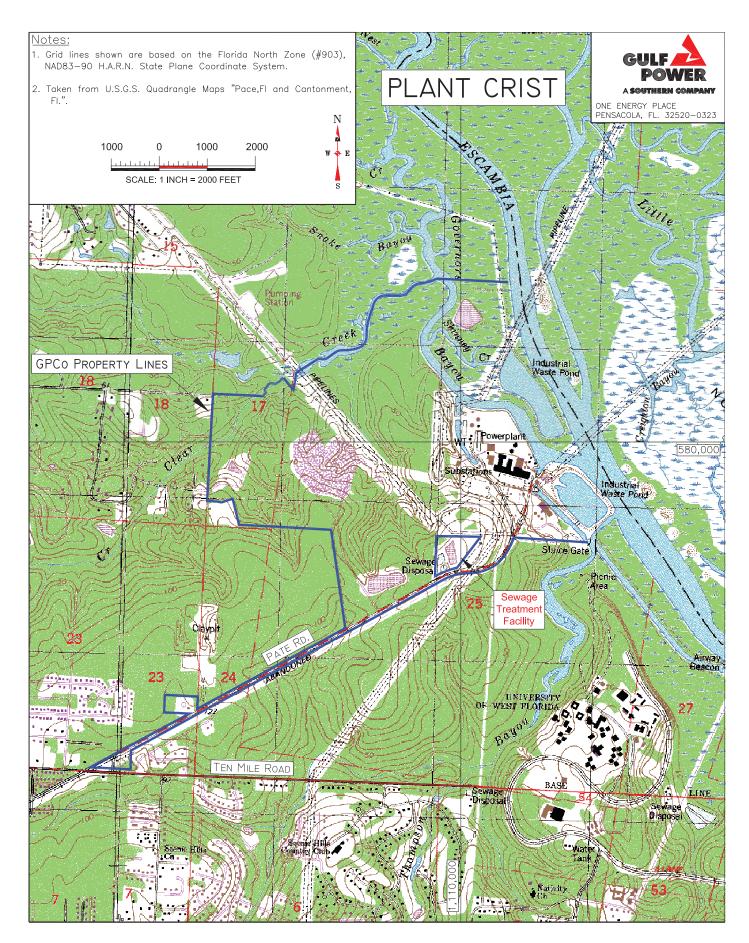
### Land Uses and Environmental Features

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.

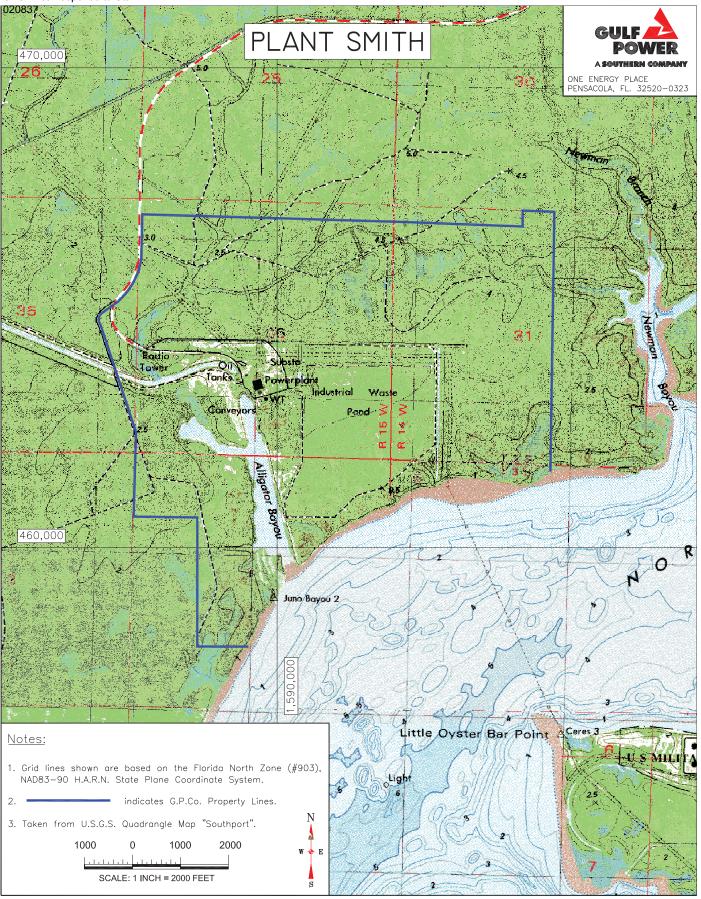
### Water Supply Sources

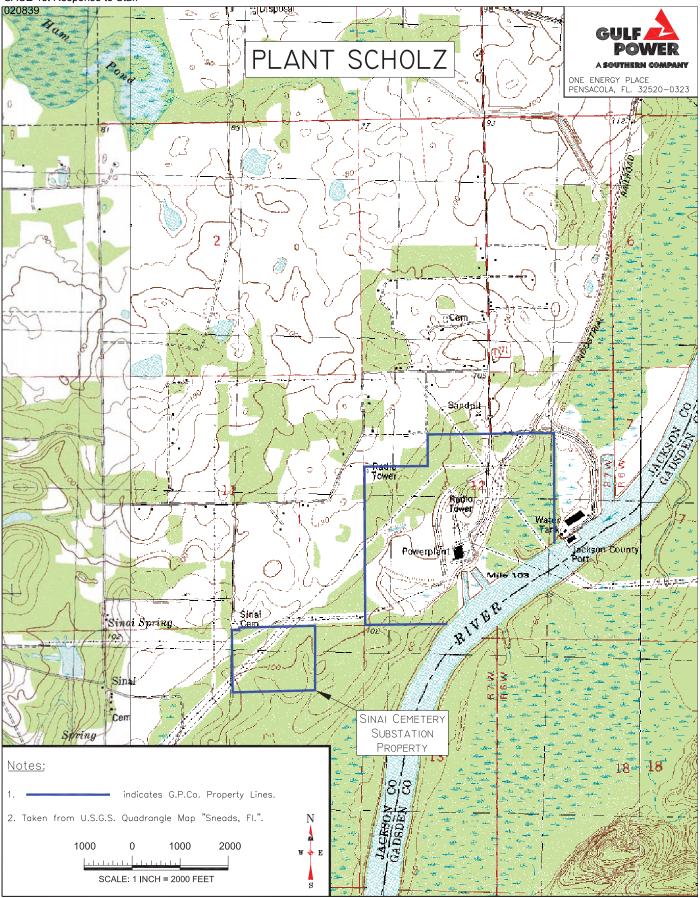
For industrial processing, cooling, and other water needs, Gulf would likely

use groundwater from on-site wells and available surface water.

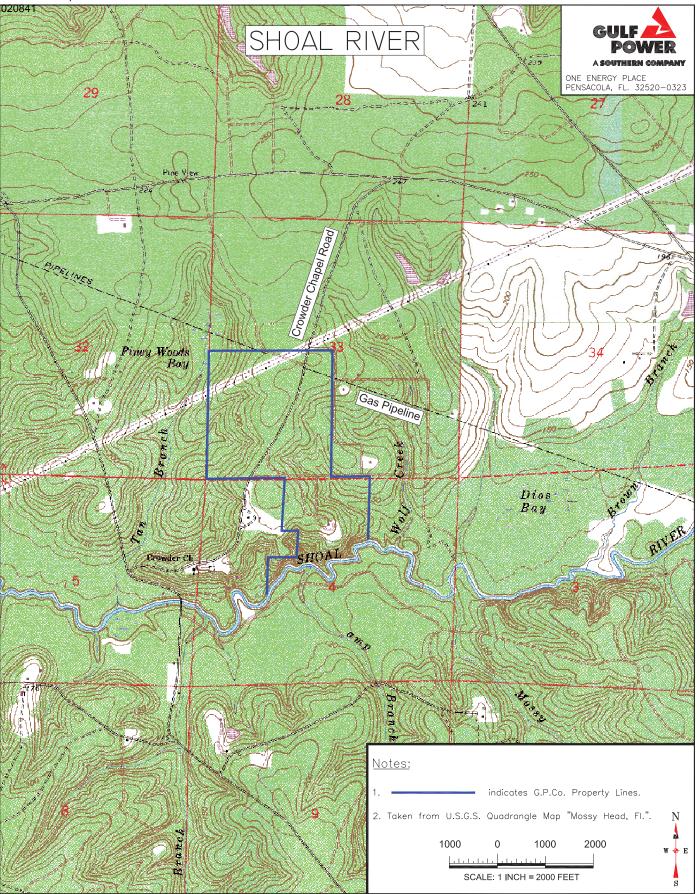


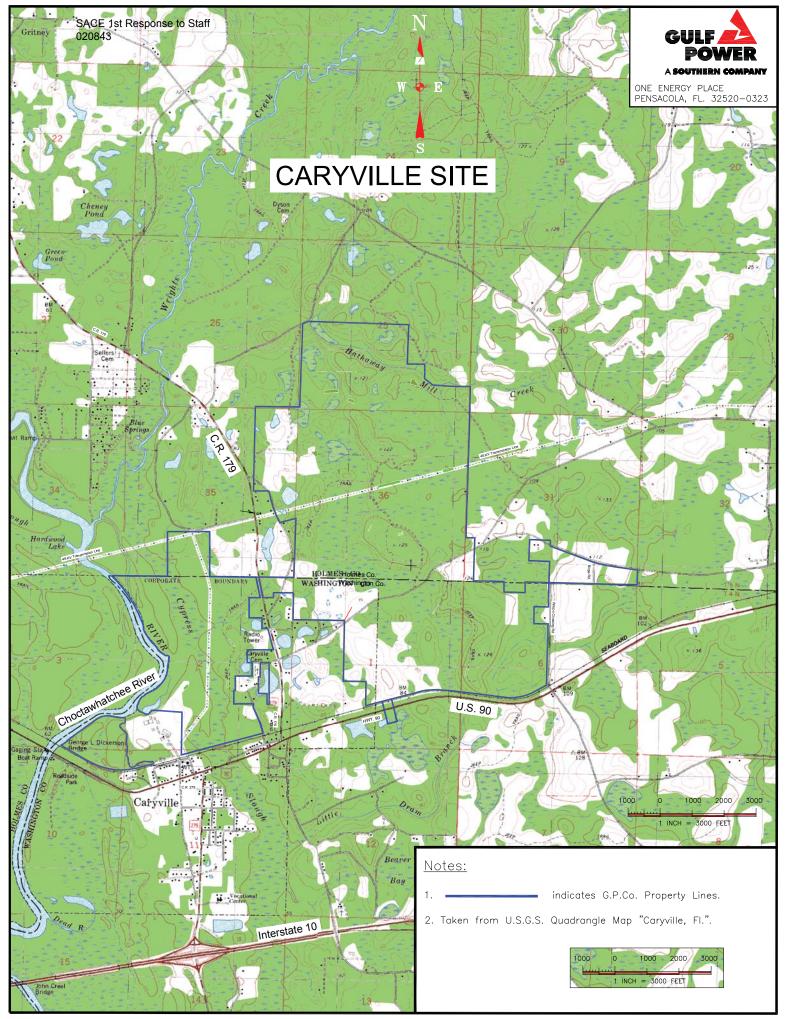
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## GULF POWER COMPANY

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

(12)	RESERVE MARGIN AFTER	MAINTENANCE	%	OF PEAK	34.2%	31.1%	29.7%	29.0%	28.5%	27.1%	25.4%	23.9%	22.3%	1.1%
(11)	RESE MARGIN	I		MW	858	779	749	739	728	697	662	631	597	29
(10)			MAINTENANCE	MW	NONE									
(6)	RESERVE AARGIN BEFORE			OF PEAK	34.2%	31.1%	29.7%	29.0%	28.5%	27.1%	25.4%	23.9%	22.3%	1.1%
(8)	RESE MARGIN	MAINTENANCE		MW	858	677	749	739	728	697	662	631	597	29
(7)		FIRM	DEMAND	MW	2,512	2,501	2,526	2,545	2,556	2,575	2,610	2,641	2,675	2,703
(9)		TOTAL	UAPACII Y AVAILABLE	MW	3,370	3,280	3,275	3,284	3,284	3,272	3,272	3,272	3,272	2,732
(5)			NUG	MW	0	0	0	0	0	0	0	0	0	0
(4)		FIRM	EXPORT	MW	(219)	(219)	(220)	(211)	(211)	(211)	(211)	(211)	(211)	(211)
(3)		FIRM	IMPORT	MM	885	885	885	885	885	885	885	885	885	0
(2)		TOTAL	CAPACITY	MW	2,704	2,614	2,610	2,610	2,610	2,598	2,598	2,598	2,598	2,943
(1)				YEAR	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023

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

42.5% 41.0% 39.3% 37.5% 27.7% 48.3% 41.3% 35.8% 34.1% 32.5% OF PEAK MARGIN AFTER (12) MAINTENANCE % RESERVE 656 1,110 989 968 966 933 902 872 841 841 810 (11) MΜ MAINTENANCE SCHEDULED NONE MΝ (10) 27.7% 48.3% 42.5% 41.3% 41.0% 39.3% 37.5% 35.8% 34.1% 32.5% OF PEAK MARGIN BEFORE 6 % MAINTENANCE RESERVE 656 1,110 989 968 966 933 902 872 841 841 810 MΜ 8 DEMAND 2,299 2,326 2,346 2,375 2,406 2,370 2,357 2,436 2,467 2,494 FIRM PEAK MΜ 6 AVAILABLE CAPACITY 3,026 3,409 3,315 3,314 3,323 3,308 3,308 3,308 3,308 3,304 TOTAL MΜ 9 00000000 0 0 NUG MΜ (2) (219) (220) (211) (211) (219) (211) (211) (211) (211) (211) CAPACITY EXPORT FIRM MΜ 4 CAPACITY 885 885 885 885 885 885 885 885 885 494 IMPORT FIRM MΜ ෆ INSTALLED 2,649 2,649 2,649 2,634 2,634 2,743 2,743 2,634 2,634 2,630 CAPACITY TOTAL MΜ 2 2017-18 2019-20 2021-22 2014-15 2015-16 2018-19 2013-14 2016-17 2020-21 2022-23 YEAR E

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	(15)	Status	٩	К	к	۵	۵	с
Page 1 of 2	(14)	tpability Winter MW	1.5	(46.0)	(46.0)	(2.0)	(2.0)	(15.0)
<u>د</u>	(13)	Net Capability Summer Winte MW MW	1.5	(46.0)	(46.0)	(2.0)	(2.0)	(12.0)
	(12)	Gen Max Nameplate KW	1,600	49,000	49,000	274,125	274,125	14,250
ANGES	(11)	Effective Date Mo/Yr	06/15	04/15	04/15	12/15	12/15	12/18
SCHEDULE 8 PLANNED AND PROSPECTIVE GENERATING FACILITY ADDITIONS AND CHANGES	(10)	Com'l In- Service Mo/Yr	06/15	03/53	03/53	22/60	06/81	05/98
ly additio	(6)	Const Start Mo/Yr	01/15			I	I	I
EACILI	(8)	Fuel ansport Alt	1	WA	WA	ТК	ТĶ	ł
LE 8 Erating	(2)	Fuel Transport Pri Alt	Ч	RR	RR	RR	RR	Ы
SCHEDULE 8 IVE GENERAT	(9)	el Alt	:	ł	ł	ОН	Р	ł
SPECTI	(5)	Fuel Pri	LFG	C	U	O	υ	ŊŊ
AND PRC	(4)	Unit Type	Q	FS	R	FS	FS	СТ
PLANNED	(3)	Location	Escambia County	Jackson County 12/3N/7W	Jackson County 12/3N/7W	Jackson Cnty, MS 42/5S/6W	Jackson Cnty, MS 42/5S/6W	Santa Rosa County 15/1N/29W
	(2)	Unit No.	ო	<del></del>	N	<del>.</del>	N	1 - 3
	(1)	Plant Name	Perdido LFG	Scholz	Scholz	Daniel	Daniel	Pea Ridge

020848								
	(15)	Status	۵	۵	٩			
Page 2 of 2	(14)	ability Winter MW	(2.0)	(2.0)	360.0		rtation	
-	(13)	Net Capability Summer Winte MW MW	(2.0)	(2.0)	349.0	-	Fuel Transportation	PL - Pipeline TK - Truck RR - Railroad WA - Water
	(12)	Gen Max Nameplate KW	274,125	274,125	370,000			complete
IANGES	(11)	Effective Date Mo/Yr	12/22	12/22	06/23			<ul> <li>CR - Certified Rating change</li> <li>D - Environmental derate</li> <li>P - Planned, but not authorized by utility</li> <li>R - To be retired</li> <li>U - Under construction, less than or equal to 50% complete</li> <li>V - Under construction, more than 50% complete</li> </ul>
SCHEDULE 8 PLANNED AND PROSPECTIVE GENERATING FACILITY ADDITIONS AND CHANGES	(10)	Com'l In- Service Mo/Yr	<i>11</i> /60	06/81	06/23			<ul> <li>CR - Certified Rating change</li> <li>D - Environmental derate</li> <li>P - Planned, but not authorize</li> <li>R - To be retired</li> <li>U - Under construction, less t equal to 50% complete</li> <li>V - Under construction, more</li> </ul>
тү арріті	(6)	Const Start Mo/Yr	I	ł	06/19		Status	CR - Cel D - Envii P - Plani R - To bi U - Unde equa
FACILI	(8)	Fuel ansport Alt	х	¥	:			σ
ILE 8 ERATING	(2)	Fuel Transport Pri Alt	RR	RR	Ы			C - Coal NG - Natural Gas LO - Light Oil HO - Heavy Oil LFG - Landfill Gas WDS - Wood Waste Solid
SCHEDULE 8 IVE GENERAT	(9)	el Alt	우	우	ł			C - Coal NG - Natural Gas LO - Light Oil HO - Heavy Oil LFG - Landfill Gas WDS - Wood Was
DSPECTI	(5)	Pri	O	O	ŊŊ	-	Fuel	C - Coal NG - Natural LO - Light Oil HO - Heavy C LFG - Landfill WDS - Wood
AND PRO	(4)	Unit Type	FS	FS	СТ			Ø
PLANNED	(3)	Location	Jackson Cnty, MS 42/5S/6W	Jackson Cnty, MS 42/5S/6W	Unknown Unknown		<u>Unit Type</u>	FS - Fossil Steam S - Steam CT - Combustion Turbine CC - Combined Cycle IC - Internal Combustion
	(2)	Unit No.	<del></del>	5	Unknown			
	(1)	Plant Name	Daniel	Daniel	Combustion Turbine		Abbreviations:	

# Schedule 9

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Perdido Unit # 3	1.5 5.1	6. H 6. H	Ö	01/15 06/15	LFG N/A	Manufactured to EPA Emission Standards	Water	2.47 acres	Pending	Not Applied	Not Applied	2.7% 1.3% 96.1% 11,247	16 2,788 272 1.3245
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): Total O&M (In-Service Year \$000): K Factor:
(1)	(2)		(3)	(4)	(5)	(9)	(2)	(8)	(6)	(10)	(11)	(12)	(13)

# Schedule 9 Status Report and Specifications of Proposed Generating Facilities

(1)	Plant Name and Unit Number:	Combustion Turbine
(2)	Net MW Capacity a. Summer: b. Winter	349 360
	Gross MW Capacity a. Summer: b. Winter	360 370
(3)	Technology Type:	GT
(4)	Anticipated Construction Timing a. Field construction start - date: b. Commercial in-service date:	06/19 06/23
(5)	Fuel a. Primary fuel: b. Alternate fuel:	NG DFO
(9)	Air Pollution Control Strategy:	Dry Low NOx Burners
(2)	Cooling Method:	Evaporative Cooling
(8)	Total Site Area:	Unknown
(6)	Construction Status:	Planned Not Committed
(10)	Certification Status:	Not Applied
(11)	Status with Federal Agencies:	Not Applied
(12)	Projected Unit Performance Data Planned Outage Factor (POF): Unplanned Outage Factor (UOF): Equivalent Availability Factor (EAF): Capacity Factor (%): Average Net Operating Heat Rate (ANOHR):	1.4% 3.6% 95.0% 9.5%
(13)	Projected Unit Financial Data Book Life (Years): Total Installed Cost (In-Service Year \$/kW): Direct Construction Cost ('14 \$/kW): AFUDC Amount (\$/kW): Escalation (\$/kW): Eixed O&M ('23 \$/kW - Yr): Variable O&M ('23 \$/MWH): K Factor:	40 988 733 102 153 18.03 6.17 6.17

Status Report and Specifications of Proposed Directly Associated Transmission Lines

Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A
(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) Participation with Other Utilities:

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