# TEN YEAR SITE PLAN 1990-1999 

FOR ELECTRIC GENERATING FACILITIES

## AND

## ASSOCIATED TRANSMISSION LINES

APRIL, 1990

Gulf Power $\boldsymbol{\lambda}$

# GULF POWER COMPANY TEN YEAR SITE PLAN 

# FOR ELECTRIC GENERATING FACILITIES <br> AND <br> <br> ASSOCIATED TRANSMISSION LINES 

 <br> <br> ASSOCIATED TRANSMISSION LINES}

Submitted to the
State of Florida
Department of Community Affairs Division of Local Resource Management Bureau of Land and Water Management Power Plant Siting Program

APRIL 1, 1990

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## CHAPTER I

 DESCRIPTION OF EXISTING FACILITIESLansing Smith

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& \text { Scholz } \\
& \text { Daniel }^{(A)}
\end{aligned}
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Abbreviations:

$$
\begin{aligned}
& \text { 81 WyOs dAL } \\
& \begin{array}{l}
\text { (A) As of } 12 / 31 / 89 \text {. } \\
\text { (B) Includes buildings. }
\end{array} \\
& \text { Utility: Gulf Power Company } \\
& \stackrel{\square}{2}
\end{aligned}
$$

$\begin{aligned} & \text { (B) Includes buildings. } \\ & \text { (C) Buildings excluded due to inclusion in col. } 5 \\ & \text { (D) Daniel Plant information refers to total area o }\end{aligned}$
$\begin{aligned} & \text { (D) Daniel Plant information refers to total area owned jointly by Gulf and Mississippi Power. } \\ & \text { (E) Gulf Power's portion of Plant Daniel only. }\end{aligned}$
(F) Scherer Plant information refers to total area owned by Georgia Power and area owned jointly
(G) Gulf Power's portion of Plant Scherer only. Includes acquisition adjustment in the amount of $\mathbf{\$ 8 , 1 5 4 , 9 2 4}$.

[^0]\[

$$
\begin{aligned}
& \text { eviations: } \\
& \text { EP - Electrostatic Precipitator } \\
& \text { WCTM - Wet cooling tower, mechanical draft } \\
& \text { OTS - Once-through, saline } \\
& \text { OTF - Once-through, fresh } \\
& \text { CP - Cooling pond } \\
& \text { NDCT - Natural Draft Cooling Tower }
\end{aligned}
$$
\]

$$
\begin{gathered}
\text { GULF POWER COMPANY } \\
\text { SYSTEM MAP } \\
\text { JANUARY, 1990 }
\end{gathered}
$$



## CHAPTER II FORECAST OF ELECTRIC POWER DEMAND

TYP FORM 2
PAGE 1 OF 3


[^1]TYP FORM 2
PAGE 2 OF 3



##  <br> gulf power company


history and forecast of energy consumption and number of customers by customer class

| ત્ર |  |  <br>  |
| :---: | :---: | :---: |
| - |  |  |
| ర్ర్ర |  |  <br>  |
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Certain customers by southeastern power administration (sepa).



$$
\begin{aligned}
& 2 \pm 0 ~\llcorner\text { abed } \\
& \forall \Sigma \text { WYOA dMI }
\end{aligned}
$$

$$
\begin{gathered}
\text { Utility: Gulf Power Company } \\
\text { (a) (b) } \\
\text { Energy Sources }
\end{gathered}
$$

[^2]$2+02$ a6ed
$\forall \varepsilon$ WYOA dA1



 Utility: Gulf Power Company




(a) Includes contracted energy allocated to certain resale customers by Southeastern Power
(b) Includes energy generated and sold under existing power sales contracts.

Utility: Gulf Power Company


Fuel Requirements





领
 $\stackrel{0}{2}$


TYP FORM 3B
Page 2 of 2


人

ility: Gulf Power Company
Fuel Requirements





 NOTE: Wholesale and total columns include contracted capacity and energy allocated to certain
resale customers by Southeastern Power Administration (SEPA)
TYP FORM 4
PAGE 2 OF 2



NOTE: (A) SHOWS INSTALLED GENERATING CAPACITY ONLY: REFER TO FORM $7 B$ FOR NET AVAILABLE CAPACITY. (b) ingludes capacity allogated to certain resale customers by sepa.
mpans





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## OVERVIEW

Gulf Power Company views the forecasting effort as a dynamic process requiring ongoing efforts to yield results which 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 marketing 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 is recognized as an industry leader in the successful implementation of cost-effective conservation programs, beginning with the introduction of the highly successful Good Cents Home concept in 1976, and continuing with concerted efforts to meet the mandates of the 1980 Florida Energy Efficiency and Conservation Act (FEECA). This philosophy entails focused market research efforts, coupled with field marketing efforts that maintain an open line of communication with our customers, and yields increased knowledge and understanding of changes in the marketplace. Also included in these efforts is continued research support for promising new energy technologies, including solar photovoltaics, electric vehicles, fuel cells and high efficiency equipment.

The Forecasting and Marketing Planning section of the Marketing and Load Management Department is responsible for preparing forecasts of customers, energy and peak demand. A description of the methods used in the development of these forecasts follows.

## A. RESIDENTIAL CUSTOMER FORECAST

The immediate short-term forecast ( $0-2$ years) of customers is based primarily on projections prepared by division personnel. The divisions remain abreast of local market and economic conditions within their service territories through direct contact with economic development agencies, developers, builders, lending institutions and other key contacts. The immediate short-term forecasts prepared by the divisions, which are developed through various forecasting methods, are analyzed for consistency and the incorporation of major construction projects and business developments is reviewed. The end result is a near-term forecast of residential customers by type of dwelling.

For the remaining forecast horizon (3-25 years), the Regional Economic Growth Impact Study (REGIS), a mathematically intensive forecasting model, is utilized in the development of residential customers. At the center of this system is a cohort survival routine approach in which population by age group is aged from one time period to the next. The model's migration/demographic component, given an initial population age distribution, together with forecasts of migration, births and deaths, projects population by age group into the future.

The forecast of residential customers is an outcome of the final section of the migration/demographic element of the model. The number of residential customers Gulf expects to serve is
calculated by multiplying the total number of households located in the eight counties in which Gulf provides service by the percentage of customers in these eight counties for which Gulf currently provides service.

The number of households referred to above is computed by applying a household formation trend to the previously mentioned population by age group, and then by summing the number of households in each of five adult age categories. As indicated, there is a relationship between households, or residential customers, and the age structure of the population of the area, as well as household formation trends. The household formation trend is the product of initial year household formation rates in the Gulf service area and projected U.S. trends in household formation.
B. COMMERCIAL CUSTOMER FORECAST

The immediate short-term forecast (0-2 years) of commercial customers, as in the residential sector, is prepared by the divisions. A review of the assumptions, techniques and results for each division is undertaken, with special attention given to the incorporation of major commercial development projects.

Beyond the immediate short-term period, commercial customers are forecast as a function of residential customers, reflecting the growth of commercial services to meet the needs of new residents. Implicit in the commercial customer forecast is the relationship between growth in total real disposable income and growth in the commercial sector.

## II. ENERGY SALES FORECAST

## A. RESIDENTIAL SALES FORECAST

The residential energy sales forecast is prepared using the Residential End-Use Energy Planning System (REEPS), a model developed for the Electric Power Research Institute (EPRI) by Cambridge Systematics, Incorporated, under Project RP1211-2. The REEPS model integrates elements of both econometric and engineering end-use approaches to energy forecasting. Market penetrations and energy consumption rates for major appliance end-uses are treated explicitly. REEPS produces forecasts of appliance installations, operating efficiencies and utilization patterns for space heating, water heating, air conditioning and cooking, as well as other major end-uses. Each of these decisions is responsive to energy prices and demand-side initiatives, as well as household/dwelling characteristics and geographical variables.

The major behavioral responses in the simulation model have been estimated statistically from an analysis of household survey data. Surveys provide the data source required to identify the responsiveness of household energy decisions to prices and other variables.

The REEPS model forecasts energy decisions for a large number of different population segments. These segments represent households with different demographic and dwelling characteristics. Together, the population segments reflect the full distribution of characteristics in the customer population. The total service area
forecast of residential energy decisions is represented as the sum of the choices of various segments. This approach enhances evaluation of the distributional impacts of various demand-side initiatives.

For each of the major end-uses, REEPS forecasts equipment purchases, efficiency and utilization choices. The model distinguishes among appliance installations in new housing, retrofit installations and purchases of portable units. Within the simulation, the probability of installing a given appliance in a new dwelling depends on the operating and performance characteristics of the competing alternatives, as well as household and dwelling features. The installation probabilities for certain end-use categories are highly interdependent.

The functional form of the appliance installation models is the multinomial logit or its generalization, the nested logit. The parameters of these models quantify the sensitivity of appliance installation choices to costs and other characteristics. The magnitudes of these parameters have been estimated statistically from household survey data.

Appliance operating efficiency and utilization rates are simulated in the REEPS model as interdependent decisions. Efficiency choice is dependent on operating cost at the planned utilization rate, while actual utilization depends on operating cost given the appliance efficiency. Appliance and building standards affect efficiency directly by mandating higher levels than those otherwise expected.

The sensitivity of efficiency and utilization decisions to costs, climate, household and dwelling size, and income has been estimated from historical survey data. Energy prices, income, and household and dwelling size significantly affect space conditioning and residual energy use. Household and dwelling size also influence water heating usage. Climate significantly impacts space heating and air conditioning.

Major appliance base year unit energy consumption (UEC) estimates are based on either metered appliance data or conditioned energy demand regression analysis. The latter is a technique employed in the absence of metered observations of individual appliance usage, and involves the disaggregation of total household demand for electricity into appliance specific demand functions.

Conditional energy demand models are multivariate regressions which explain residential customers' demands for electricity as functions of the energy-using equipment that they own, weather conditions, demographic and dwelling characteristics, and other factors playing a major role in total household energy consumption. The mathematics underlying this method rely upon the premise that consumption through a particular end-use must be zero if the end-use is not present, and if the end-use is present, energy consumption levels are represented as dependent on weather, demographics, income and other variables.

The total electrical energy consumption, $E$, of a household can be represented as:

$$
E=E_{0}+\sum_{i=1}^{N} E_{i}
$$

Where $E_{i}$ is the electrical energy consumed by a specified major appliance $i$, and $E_{0}$ is the electrical energy consumed by the remaining, unspecified set of appliances. The methodology of conditional energy demand analysis produces cross sectional, ordinary least squares regression estimates of the appliance coefficients. The regressions were performed using input data from the Gulf Power Company 1986 and 1988 Residential Market Surveys, billing cycle monthly energy data, and billing cycle monthly weather data.

The residential sales forecast reflects the continued impacts of Gulf Power's Good Cents Home program and efficiency improvements undertaken by customers as a result of Centsable Energy Check audits, as well as conversions to higher efficient outdoor lighting. Additional information on the Residential Conservation programs and program features are provided in the Conservation section.
B. COMMERCIAL SALES FORECAST

COMMEND, a commercial end-use model developed by the Georgia Institute of Technology through EPRI Project RP1216-06, serves as the basis for the major portion of Gulf's commercial energy sales forecast.

The COMMEND model is an extension of the capital-stock approach used in most econometric studies. This approach views the demand for energy as a product of three factors. The first of these factors is the physical stock of energy-using capital, the second


#### Abstract

factor is base year energy use, and the third is a utilization factor representing utilization of equipment relative to the base year.


Changes in equipment utilization are modeled using short-run econometric fuel price elasticities. Fuel choice is forecast with a life-cycle cost/behavioral microsimulation submodel, and changes in equipment efficiency are determined using engineering and cost information for space heating, cooling and ventilation equipment and econometric elasticity estimates for the other end-uses (lighting, water heating, ventilation, cooking, refrigeration, and others).

Three characteristics of COMMEND distinguish it from traditional modeling approaches. First, the reliance on engineering relationships to determine future heating and cooling efficiency provides a sounder basis for forecasting long-run changes in space heating and cooling energy requirements than a pure econometric approach can supply. Second, the simulation model uses a variety of engineering data on the energy-using characteristics of commercial buildings. Third, COMMEND provides estimates of energy use detailed by end-use, fuel type and building type.

Gulf's most recent Commercial Market Survey, conducted in 1984, provided much of the input data required for the COMMEND model. The model produces forecasts of energy use for the end-uses mentioned above, within each of the following business categories:

1. Food Stores
2. Elementary/Secondary Schools
3. Offices
4. Colleges/Trade Schools
5. Retail and Personal Services 9. Hospitals/Health Services
6. Public Utilities
7. Hotels/Motels
8. Automotive Services
9. Religious Organizations
10. Restaurants
11. Miscellaneous

The Commercial Sales forecast reflects the continued impacts of Gulf Power's Commercial Good Cents building program and efficiency improvements undertaken by customers as a result of Commercial Energy Audits and Technical Assistance Audits, as well as conversions to higher efficient outdoor lighting. Additional information on the Commercial Conservation programs and program features are provided in the Conservation section.
C. INDUSTRIAL SALES FORECAST

The short-term industrial energy sales forecast is developed using a combination of on-site surveys of major industrial customers, trending techniques, and multiple regression analysis. Forty-three of Gulf's largest industrial customers are interviewed to identify load changes due to equipment addition, replacement or changes in operating characteristics.

The short-term forecast of monthly sales to these major industrial customers is a synthesis of the detailed survey information and historical monthly load factor trends. The
forecast of short-term sales to the remaining smaller industrial customers is developed using multiple regression analysis.

The long-term forecast of industrial energy sales is based on econometric models of the chemical, pulp and paper, other manufacturing, and non-manufacturing sectors. The industrial forecast is further refined by accounting for expected cogeneration installations, and a supplemental energy rate.
D. STREET LIGHTING SALES FORECAST

The forecast of monthly energy sales to street lighting customers is based on projections of the number of fixtures in service, for each of the following fixture types:

HIGH PRESSURE SODIUM VAPOR
MERCURY VAPOR

| 5,400 Lumen | 3,200 Lumen |
| ---: | ---: |
| 8,800 Lumen | 7,000 Lumen |
| 20,000 Lumen | 9,400 Lumen |
| 25,000 Lumen | 17,000 Lumen |
| 46,000 Lumen | 48,000 Lumen |

In the short-term, the estimated monthly kilowatt-hour consumption for each fixture type is multiplied by the projected number of fixtures in service to produce total monthly sales for a given type of fixture. This methodology allows Gulf to explicitly evaluate the impacts of lighting programs, such as mercury to high pressure sodium conversions. In the long-term, kilowatt-hour consumption grows at the same rate as projected fixture growth which, in itself, is modeled as a function of projected residential customer growth.

## E. WHOLESALE ENERGY FORECAST


#### Abstract

The short-term forecast of energy sales to wholesale customers is based on interviews with these customers, as well as recent historical data. A forecast of total monthly energy requirements at each wholesale delivery point is produced.

The long-term forecast is based on estimates of annual growth rates for each delivery point, according to future growth potential.


F. COMPANY USE \& INTERDEPARTMENTAL ENERGY

The 1990 Annual Forecast for Company and Interdepartmental energy usage was based on recent historical values, with appropriate adjustments to reflect increases in energy requirements through 1989, for new Company facilities. The 1990 forecasted Company usage was then projected through the year 2014, at the same growth rate each year as the growth in residential customers. The monthly spreads were derived using historical relationships between monthly and annual energy usage.

The peak demand forecast is prepared using the Hourly Electric Load Model (HELM), developed by ICF, Incorporated, for EPRI under Project RP1955-1. The model forecasts hourly electrical loads over the long-term.

Load shape forecasts have always provided an important input to traditional system planning functions. Forecasts of the pattern of demand have acquired an added importance due to structural changes in the demand for electricity and increased utility involvement in influencing load patterns for the mutual benefit of the utility and its customers.

HELM represents an approach designed to better capture changes in the underlying structure of electricity consumption. Rapid increases in energy prices during the 1970's and early 1980's brought about changes in the efficiency of energy-using equipment. Additionally, sociodemographic and microeconomic developments have changed the composition of electricity consumption, including changes in fuel shares, housing mix, household age and size, construction features, mix of commercial services, and mix of industrial products.

In addition to these naturally occurring structural changes, utilities have become increasingly active in offering customers options which result in modified consumption patterns. An important input to the design of such demand-side programs is an assessment of their likely impact on utility system loads.

HELM has been designed to forecast electric utility load shapes and to analyze the impacts of factors such as alternative weather
conditions, customer mix changes, fuel share changes, and demand-side programs. The structural detail of HELM provides forecasts of hourly class and system load curves by weighting and aggregating load shapes for individual end-use components.

Model inputs include energy forecasts and load shape data for the user-specified end-uses. Inputs are also required to reflect new technologies, rate structures and other demand-side programs. Model outputs include hourly system and class load curves, load duration curves, monthly system and class peaks, load factors and energy requirements by season and rating period.

The methodology embedded in HELM may be referred to as a "bottom-up" approach. Class and system load shapes are calculated by aggregating the load shapes of component end-uses. The system demand for electricity in hour $i$ is modeled as the sum of demands by each end-use in hour i:
$L_{i}=\sum_{R=1}^{N_{R}} L_{R, i}+\sum_{C=1}^{N_{C}} L_{C, i}+\sum_{I=1}^{N_{I}} L_{I, i}+M i s c_{i}$
Where: $\quad L_{i}=$ system demand for electricity in hour $i ;$
$N_{R}=$ number of residential end-use loads;
$\mathrm{N}_{\mathrm{C}}=$ number of commercial end-use loads;
$N_{I}=$ number of industrial end-use loads;
$L_{R, i}=$ demand for electricity by residential end-use $R$ in hour i;
$\mathrm{L}_{\mathrm{C}, \mathrm{i}}=$ demand for electricity by commercial end-use R in hour i:
$\mathrm{L}_{\mathrm{I}, \mathrm{i}}=$ demand for electricity by industrial end-use $R$ in hour i;
Misc $_{i}=$ other demands (wholesale, street lighting, losses, Company use) in hour i.

As mentioned earlier, Gulf's forecast of energy sales and peak demand reflect the continued impacts of our conservation programs. The following provides a listing of the conservation programs and program features in effect and estimates of reductions in peak demand and net energy for load reflected in the forecast as a result of these programs.
A. RESIDENTIAL CONSERVATION

In the residential sector, Gulf's Good Cents New Home program is designed to make cost effective increases in the efficiencies of the new home construction market above that currently being provided by placing additional requirements on cooling equipment efficiencies and sizing, increased water heating efficiencies, increased insulation levels in walls, ceilings, and floors, and tighter restrictions on glass area.

Gulf's Good Cents Improved Home program is designed to make cost effective increases in efficiencies in the existing home market by requiring improvements in the insulation levels in walls, ceilings, and floors, and increased efficiency requirements on the heating and cooling systems and water heating systems.

Further conservation benefits are achieved in the existing home market with Gulf's Residential Energy Audit program which is designed to provide existing residential customers with cost-effective energy conserving options that increase comfort and


#### Abstract

reduce operating costs. The goal of this program is to upgrade the customer's home to the Good Cents Improved Home standard by providing specific whole house recommendations, a list of qualified companies who provide installation services, and information on "low-interest" financing.

Additional conservation benefits are realized in the residential sector through Gulf's Outdoor Lighting program by conversion of existing less efficient mercury vapor lighting to higher efficient high pressure sodium lighting.


B. COMMERCIAL CONSERVATION

In the commercial sector, Gulf's Good Cents Building program is designed to make cost effective increases in efficiencies in both new and existing commercial buildings with requirements resulting in energy conserving investments that address the thermal efficiency of the building envelope, interior lighting, heating and cooling equipment efficiency, and solar glass area. Additional recommendations are made, where applicable, on energy conserving options that include thermal storage, heat recovery systems, water heating heat pumps, solar applications, energy management systems, and high efficiency outdoor lighting.

The Commercial Energy Audit (EA) and Technical Assistance Audit (TAA) programs are designed to provide commercial customers with assistance in identifying cost effective energy conservation opportunities and introduce them to various technologies which will lead to improvements in the energy efficiency level of their
business. The program is designed with enough flexibility to allow for a simple walk through analysis (EA) or a detailed economic evaluation of potential energy improvements through a more in-depth audit process (TAA) which includes equipment energy usage monitoring, computer energy modeling, life cycle equipment cost analysis, and feasibility studies.

## C. STREET LIGHTING CONVERSION

Gulf's Street Lighting program is designed to achieve additional conservation benefits by conversion of existing less efficient mercury vapor lighting to higher efficient high pressure sodium lighting.
D. CONSERVATION RESULTS SUMMARY

The following table provides direct estimates of the energy savings (reductions in peak demand and net energy for load) realized by Gulf's conservation programs. These numbers relfect estimates of conservation undertaken by customers as a result of Gulf Power Company's involvement. The conservation without Gulf's involvement has contributed to further unquantifiable reductions to demand and net energy for load. These unquantifiable additional reductions are captured in the time series regressions in our demand and energy forecasts.

## HISTORICAL

TOTAL CONSERVATION PROGRAMS CUMULATIVE ANNUAI REDUCTIONS AT GENERATOR

| SUMMER | WINTER | NET ENERGY |  |
| ---: | ---: | ---: | ---: |
| PEAK |  |  |  |
| (KW) | PEAK | FOR IOAD |  |
|  |  | $(K W)$ | (KWH) |

1990 BUDGET FORECAST TOTAL CONSERVATION PROGRAMS INCREMENTAL ANNUAL REDUCTIONS AT GENERATOR

|  | SUMMER <br> PEAK <br> $(\mathrm{KW})$ | WINTER <br> PEAK <br> (KW) | NET ENERGY <br> FOR LOAD |
| ---: | ---: | ---: | ---: |
|  |  |  | (KWH) |
| 1990 | 11,510 | 14,165 | $28,453,803$ |
| 1991 | 12,341 | 16,946 | $30,284,396$ |
| 1992 | 13,283 | 17,614 | $32,469,259$ |
| 1993 | 13,140 | 17,466 | $32,263,974$ |
| 1994 | 13,188 | 17,896 | $32,455,011$ |
| 1995 | 13,267 | 18,120 | $32,756,312$ |
| 1996 | 13,461 | 18,655 | $33,305,931$ |
| 1997 | 13,964 | 19,816 | $34,534,145$ |
| 1998 | 14,322 | 20,320 | $35,449,998$ |
| 1999 | 14,216 | 20,086 | $35,348,013$ |

1990 BUDGET FORECAST
TOTAL CONSERVATION PROGRAMS CUMULATIVE ANNUAL REDUCTIONS AT GENERATOR

| SUMMER | WINTER <br> PEAK <br> (KW) | NET ENERGY <br> FOR LOAD |
| ---: | ---: | ---: |
|  | $(\mathrm{KW})$ | $(\mathrm{KWH})$ |

## v. SMALL POWER PRODUCTION

The current forecasts also consider Gulf's active position in the promotion of renewable energy resources, the most recent examples being our involvement in two waste-to-energy facilities located within our service area. In addition to aiding in the initial stages of planning, installation and operation of these facilities, the Company has initiated preliminary studies to assess the feasibility of construction of other waste disposal units at various sites in Northwest Florida. Following is a list of the cumulative small power producer capability anticipated in the base case forecast. This includes both waste-to-energy projects and other renewable fuel projects.

|  | Small Power <br> Producers |  | Small Power <br> Producers |
| :--- | :---: | :---: | :---: |
| $\frac{\text { Year }}{1989}$ | $\frac{\text { Net Capability (MW) }}{11}$ | $\frac{\text { Year }}{2002}$ | $\frac{\text { Net Capability (MW) }}{}$ |
| 1990 | 11 | 2003 | 45 |
| 1991 | 11 | 2004 | 45 |
| 1992 | 11 | 2005 | 45 |
| 1993 | 11 | 2006 | 45 |
| 1994 | 11 | 2007 | 45 |
| 1995 | 40 | 2008 | 45 |
| 1996 | 40 | 2009 | 45 |
| 1997 | 45 | 2010 | 45 |
| 1998 | 45 | 2011 | 45 |
| 1999 | 45 | 2012 | 45 |
| 2000 | 45 | 2013 | 45 |
| 2001 | 45 |  | 45 |

CHAPTER III
FORECAST
OF

## FACILITIES REQUIREMENTS

TYP FORM 6






ल
슨
CT - Combustion Turbine
NG - Natural Gas
LO - Light Oil
PL - Pipeline
TK - Truck
P - Planned, but not aut
(b)

Abbreviations:
P. Plamned, but not authorized by utility

TYP FORM 7A

## MARGIN AFTER MAINTENANCE




|  |  |  | margin before MAINTENANCE |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| total | FIRM | total | FIRM |  |  |  |
| installed | CAPACITY | available | PEAK |  |  | SCHEDULED |
| CAPACITY | IMPORT | capacity | demand |  | per cent | maintenance |
| M ${ }^{\text {H}}$ | M (B) | M ${ }^{\text {H }}$ | MW | M | Of PEAK | M |
| ........ | ...... | --........ | ---... | -...- | ... | -........... |
| 2321 | (124) | 2197 | 1750 | 447 | 25.5\% | NONE |
| 2321 | (138) | 2183 | 1775 | 408 | 23.0\% |  |
| 2321 | (189) | 2132 | 1819 | 313 | 17.2\% |  |
| 2321 | (184) | 2137 | 1853 | 284 | 15.3\% |  |
| 2321 | (165) | 2156 | 1897 | 259 | 13.7\% |  |
| 2447 | (200) | 2247 | 1931 | 316 | 16.4\% |  |
| 2447 | (200) | 2247 | 1978 | 269 | 13.6\% |  |
| 2447 | (198) | 2249 | 2015 | 234 | 11.6\% |  |
| 2573 | (197) | 2376 | 2051 | 325 | 15.8\% |  |
| 2573 | (195) | 2378 | 2092 | 286 | 13.7\% |  |
| (A) capacity allocations and changes must be made by june 30 to be considered in effect at the time of the summer peak. all values are summer net mh. |  |  |  |  |  |  |
| (B) includes capacity sold in all existing unit power sales contracts, contracted capacity allocated to certain resale customers by the southeastern power administration (sepa), and estimated contracted demand side options. |  |  |  |  |  |  |

forecast of capacity, demand, and scheduled maintenance
苗: ©
TYP FORM 7B

天


$$
\begin{aligned}
& \text { forecast of capacity, demand, and scheduled maintenance } \\
& \text { at time of winter peak (a) }
\end{aligned}
$$




Gulf Power Company coordinates its planning and operation with the other operating companies of the Southern electric system: Alabama Power Company, Georgia Power Company, Mississippi Power Company, and Savannah Electric and 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 planned generating capacity to its load and reserve responsibility. Each company buys or sells its temporary deficit or surplus capacity from or to the pool. This is done through the mechanism of an Intercompany Interchange Contract among the companies, which is reviewed and updated annually.

## OFF SYSTEM SALES

## Unit Power Sales

Gulf Power Company, along with the other Southern operating companies, have negotiated the sales of capacity and energy to several utilities outside the Southern system. The term of the contracts started prior to 1990 and extends into 2010. Gulf's share of the capacity and energy sales varies from year to year and is reflected in the reserves on Forms $7 A$ and $7 B$ and the energy
and fuel use on Forms 3A and 3B.
Long Term Sales
Contracts have also been finalized for the sale of non-firm capacity and energy through May of the year 2000.

Reserves shown in this filing have not been reduced for this capacity; however, the energy sales have been reflected on Forms $3 A$ and $3 B$.

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# CHAPTER IV SITE DESCRIPTION AND IMPACT ANALYSIS 

TYP FORM 8A
Page 1 of 2
Utility: Gulf Power Company Specifications of Proposed Generating Facilities
Status Report
Specifications of Proposed Gen


TYP FORM 8A
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Utility: Gulf Power Company



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[^0]:    TYP FORM 1C
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[^1]:    * historical and projected figures include portions of escambia, santa rosa, okaloosa, halton, bay,
    hashington, holmes, and jackson counties served by gulf power company.

[^2]:    (a) Includes contracted energy allocated to certain resale customers by Southeastern Power
    

