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GULF POWER COMPANY

Before the Florida Public Service Commission
Direct Testimony of
J. Thomas Kilgore, Jr.
In Support of Rate Relief
Docket No. 891345-EI
Date of Filing December 15, 1989

Q. Will you please state your name, business address and occupation?

A. My name is Joel Thomas Kilgore, Jr., and my business address is 500 Bayfront Parkway, Pensacola, Florida 32501. I am Manager of Marketing Planning and Research for Gulf Power Company.

Q. Please describe your education and professional background.

A. I graduated from Auburn University in 1980 with a Bachelor of Science degree in Industrial Engineering. I am a member and past chairman of the Marketing Planning and Research section of the Southeastern Electric Exchange, Marketing Division, and I am also a member and past chairman of the Research and Forecasting Committee of the Florida Electric Power Coordinating Group. In addition, I am an active member of the Electric Utility Market Research Council, and the Electric Utility Forecasters' Forum, and have served as chairman

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1 or member of a number of committees and task forces
2 within the Southern electric system.

3 I began my career in the electric utility industry at
4 Alabama Power Company in 1976 as a cooperative education
5 student. Upon graduation from Auburn University in
6 1980, I began work with Gulf Power Company as a Techni-
7 cal Services Engineer. In 1982, I was promoted to
8 Supervisor of Forecasting and Marketing Planning and
9 served in that capacity until January, 1988, when I was
10 promoted to my current position as Manager of Marketing
11 Planning and Research.

12

13 Q. What are your areas of responsibility with Gulf Power
14 Company?

15 A. I am responsible for the following areas:

16 (1) Forecasts of Customers, Energy Sales, Peak Demands,
17 and Base Revenues, (2) Load Research, (3) Marketing
18 Research and, (4) Marketing Planning.

19

20 Q. What is the purpose of your testimony in this proceed-
21 ing?

22 A. The purpose of my testimony is to present the approach,
23 methods and results associated with Gulf's forecast of
24 customers, energy sales, peak demands and base revenues.

25

1 I will also address the Company's cost of service load
2 research activities and results.

3
4 Q. Have you prepared an exhibit that contains information
5 to which you will refer in your testimony?

6 A. Yes.

7 Counsel: We ask that Mr. Kilgore's
8 Exhibit, comprised of 6
9 Schedules, be marked for identification
10 as Exhibit _____ (JTK-1)

11
12 Q Are you the sponsor of certain Minimum Filing
13 Requirements (MFRs)?

14 A. Yes, these are listed on Schedule 6 at the end of
15 my exhibit. To the best of my knowledge, the
16 information contained in these MFRs is true and
17 correct.

18
19 Q. Mr. Kilgore, you indicated you are responsible for
20 the forecasts of Gulf's customers, energy sales,
21 peak demands and base revenues. What tabulations
22 have you provided detailing your retail projections
23 for 1990?

24 A. I have provided three tabulations of test year
25 forecast data: Schedule 1 details retail customers

1 by rate; Schedule 2 details retail energy sales by
2 rate; and finally Schedule 3 details retail base
3 revenues by rate. These schedules also provide
4 totals by customer classification.

5

6 Q. Please summarize your Schedule 1.

7 A. Our projections call for a total of 292,610 retail
8 customers by year-end 1990, an increase of 6,756
9 customers over revised year-end projections for
10 1989. This represents an anticipated annual growth
11 rate of 2.4 percent for 1990. By comparison,
12 historical growth rates of 3.5 percent, 2.6 percent
13 and 2.3 percent were experienced in 1986, 1987, and
14 1988, respectively. Current projections for
15 year-end 1989 indicate an annual growth rate of 2.2
16 percent.

17

18 Q. Please summarize your Schedule 2.

19 A. Retail energy sales are expected to total
20 7,699,490,093 kilowatthours in 1990, representing
21 an increase of 4.2 percent over revised year-end
22 projections for 1989. The retail kilowatthour sales
23 forecast by class consists of the following:
24 Residential: 3,344,901,953, comprising 43.4 percent
25 of retail; Commercial: 2,214,169,017, comprising

1 28.8 percent; Industrial: 2,124,157,282, comprising
2 27.6 percent; and Street Lighting: 16,261,841, com-
3 prising 0.2 percent.

4

5 Q. Please summarize your Schedule 3.

6 A. Retail base revenues are expected to total
7 \$249,281,859 in 1990. The base revenue forecast by
8 class consists of the following: Residential:
9 \$133,163,227, comprising 53.4 percent of retail;
10 Commercial: \$73,877,125, comprising 29.6 percent;
11 Industrial: 40,978,153, comprising 16.4 percent;
12 and Street Lighting: 1,263,354, comprising 0.5
13 percent.

14

15 Q. What are the objectives of your forecasting ef-
16 forts?

17 A. As with any forecast which serves as a basis for
18 planning, we strive for the greatest possible
19 accuracy, particularly in the short-term (0-2
20 years). We recognize the fallacy, especially in
21 the long-term, of believing that we can accurately
22 predict all of the major factors comprising the
23 changing economic, legislative and market environ-
24 ments. With this recognition of change, we have
25 adopted two primary objectives in preparing our

1 long-term forecasts: (1) comprehensive coverage of
2 major issues and trends that may impact Gulf and
3 its customers, which are addressed and quantified
4 through the use of scenarios, and (2) effective
5 communication to management and planning functions
6 of the underlying causes and potential implications
7 associated with various scenarios. We have imple-
8 mented this scenario approach to enhance our
9 flexibility and allow for more informed decision-
10 making in a changing environment.

11 Since the primary focus in these proceedings
12 is on the short-term forecast, particularly the
13 test year, the base case or most likely forecast
14 scenario will serve as the basis for discussion of
15 forecast results.

16

17 Q. What level of accuracy has been achieved in your
18 recent short-term forecasts of retail customers,
19 energy sales and base rate revenues?

20 A. Employing the same basic methods and approach
21 currently in use, our forecast accuracy has consis-
22 tently exceeded the standards which we consider
23 appropriate for planning purposes. Schedule 4
24 provides a summary of our short-term accuracy for

25

1 the last four budget forecasts issued prior to the
2 test year forecast.

3
4 Q. What rate schedules are included in your residen-
5 tial class forecast of customers and energy sales?

6
7 A. Our residential class is comprised of three rate
8 schedules: RS (residential service) which repre-
9 sents the majority of class energy sales, rate
10 schedule RST (residential service, time-of-use),
11 and finally rate schedule OS (outdoor service -
12 lighting).

13
14 Q. Please describe the methods used to prepare your
15 forecast of residential customers.

16 A. The immediate short-term forecast (0-2 years) of
17 residential customers is based primarily on projec-
18 tions prepared by division personnel. This ap-
19 proach takes advantage of their knowledge of local
20 market and economic conditions, which is gained
21 through direct interaction with economic develop-
22 ment agencies, state and federal agencies, develop-
23 ers, builders, lending institutions, and other key
24 contacts.

25

1 For the remaining forecast horizon (3-25
2 years), the Regional Economic Growth Impact Study
3 (REGIS), a mathematically intensive forecasting
4 model, is utilized in the development of residen-
5 tial customer projections. At the center of this
6 system is a cohort survival routine approach in
7 which population by age group is aged from one time
8 period to the next. The model's migra-
9 tion/demographic component, given an initial
10 population age distribution, together with fore-
11 casts of migration, births and deaths, projects
12 population by age group into the future.

13 The forecast of residential customers is an
14 outcome of the final section of the migra-
15 tion/demographic element of the model. The number
16 of residential customers Gulf expects to serve is
17 calculated by multiplying the total number of
18 households located in the eight counties in which
19 Gulf provides service by the percentage of custom-
20 ers in these eight counties for which Gulf current-
21 ly provides service.

22 The number of households referred to above is
23 computed by applying a household formation trend to
24 the previously mentioned population by age group,
25 and then by summing the number of households in

1 each of five adult age categories. As indicated,
2 there is a relationship between households, or
3 residential customers, and the age structure of the
4 population of the area, as well as household
5 formation trends. The household formation trend is
6 the product of initial year household formation
7 rates in the Gulf service area and projected U.S.
8 trends in household formation.

9

10 Q. Please describe the methods used to prepare your
11 residential class energy sales forecast.

12 A. The residential energy sales forecast is prepared
13 using the Residential End-Use Energy Planning
14 System (REEPS), a model developed for the Electric
15 Power Research Institute (EPRI) by Cambridge
16 Systematics, Incorporated, under Project RP1211-2.
17 The REEPS model integrates elements of both
18 econometric and engineering end-use approaches
19 to energy forecasting. Market penetrations and
20 energy consumption rates for major appliance
21 end-uses are treated explicitly. REEPS produces
22 forecasts of appliance installations, operating
23 efficiencies and utilization patterns for space
24 heating, water heating, air conditioning and
25 cooking, as well as other major end-uses. Each of

1 these decisions is responsive to energy prices and
2 conservation/demand-side initiatives, as well as
3 household/dwelling characteristics and geographical
4 variables.

5 The major behavioral responses in the simula-
6 tion model have been estimated statistically from
7 an analysis of household survey data. Residential
8 market surveys provide the data source required to
9 identify the responsiveness of household energy
10 decisions to prices and other variables.

11 The REEPS model forecasts energy decisions for
12 a specified number of different population seg-
13 ments. These segments represent households with
14 different demographic and dwelling characteristics.
15 Together, the population segments reflect the full
16 distribution of characteristics in the customer
17 population. The total service area forecast of
18 residential energy decisions is represented as the
19 sum of the choices of various segments. This
20 approach enhances evaluation of the distributional
21 impacts of marketing or demand-side initiatives.

22 For each of the major end-uses, REEPS fore-
23 casts equipment purchases, efficiency and utiliza-
24 tion choices. The model distinguishes among
25 appliance installations in new housing, retrofit

1 installations and purchases of portable units.
2 Within the simulation, the probability of install-
3 ing a given appliance in a new dwelling depends on
4 the operating and performance characteristics of
5 the competing alternatives, as well as household
6 and dwelling features. The installation probabili-
7 ties for certain end-use categories are highly
8 interdependent.

9 Appliance operating efficiency and utilization
10 rates are simulated in the REEPS model as interde-
11 pendent decisions. Efficiency choice is dependent
12 on operating cost at the planned utilization rate,
13 while actual utilization depends on operating cost
14 given the appliance efficiency. Appliance and
15 building standards affect efficiency directly by
16 mandating higher levels than those otherwise
17 expected.

18 The sensitivity of efficiency and utilization
19 decisions to costs, climate, household and dwelling
20 size, and income has been estimated from historical
21 survey data.

22 Major appliance base-year unit energy consump-
23 tion (UEC) estimates are based on either metered
24 appliance data or conditional energy demand regres-
25 sion analysis. The latter is a technique employed

1 in the absence of metered observations of individu-
2 al appliance usage and involves the disaggregation
3 of total household demand for electricity into
4 appliance specific demand functions.

5 Conditional energy demand models are regres-
6 sions which explain residential customers' demands
7 for electricity as functions of the energy-using
8 equipment that they own, weather conditions,
9 demographic and dwelling characteristics, and other
10 factors playing a major role in total household
11 energy consumption. The mathematics underlying
12 this method rely upon the premise that consumption
13 through a particular end-use must be zero if the
14 end-use is not present, and if the end-use is
15 present, energy consumption levels are represented
16 as dependent on weather, demographics, income and
17 other variables.

18 The structural design of the REEPS model is
19 oriented primarily toward long-term forecasting and
20 strategic analysis, with energy forecast outputs
21 stated in annual terms. In order to develop
22 monthly allocations and to enhance short-term (0-2
23 years) sales forecast accuracy, a disaggregate
24 single equation econometric model is used in
25 calibrating the short-term REEPS model output. The

1 basic structure of this econometric model repre-
2 sents monthly kilowatthours per customer per
3 billing day as a function of weather (heating and
4 cooling degree hours), price of electricity and
5 seasonal variations.

6

7 Q. What rate schedules are included in your commercial
8 class forecast of customers and energy sales?

9 A. The commercial class represents the most heteroge-
10 neous market served by Gulf. Included in this
11 class are customers from the following seven rate
12 schedules: GS (general service), GST (general
13 service, time-of-use), GSD (general service de-
14 mand), GSdT (general service demand, time-of-use),
15 LP (large power service), LPT (large power service,
16 time-of-use) and OS (outdoor service).

17

18 Q. Please describe the method used to prepare the
19 commercial class customer forecast.

20 A. The immediate short-term forecast (0-2 years) of
21 commercial customers, as in the residential sector,
22 is prepared by division personnel. A review of the
23 techniques and results for each division is under-
24 taken by the corporate forecasting section, under
25 my direction. Special attention is given to the

1 incorporation of new major commercial establish-
2 ments and consistency with general assumptions.

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

11

12 Q. Please describe the methods used to prepare your
13 commercial class energy sales forecast.

14 A. The Commercial Sector End-Use Energy Demand Fore-
15 casting Model (COMMEND), which was developed by the
16 Georgia Institute of Technology through EPRI
17 Project RP1216-06, serves as the basis for the
18 major portion of Gulf's commercial energy sales
19 forecast. Specifically, the GSD, GSDT, LP and LPT
20 rate schedule customers within the commercial class
21 are represented in the COMMEND forecast.

22 The COMMEND model is an extension of the
23 capital-stock approach used in most econometric
24 studies. This approach views the demand for energy
25 as a product of three factors. The first of these

1 factors is the physical stock of energy-using
2 capital, the second factor is base-year energy use,
3 and the third is a utilization factor representing
4 utilization of equipment relative to the base-year.

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

15 Three characteristics of COMMEND distinguish
16 it from traditional modeling approaches. First,
17 the reliance on engineering relationships to
18 determine future heating and cooling efficiency
19 provides a more sound basis for forecasting long-
20 run changes in space heating and cooling energy
21 requirements than a pure econometric approach can
22 supply. Second, the simulation model uses a
23 variety of engineering data on the energy-using
24 characteristics of commercial buildings. Third,
25

1 COMMEND provides estimates of energy use detailed
2 by end-use, fuel type and building type.

3 Gulf's most recent Commercial Market Survey,
4 conducted in 1984, provided much of the input data
5 required for the COMMEND model. This data is
6 augmented with current floorspace estimates and
7 projections. The model produces forecasts of
8 energy use for the end-uses mentioned above, within
9 each of the following business categories:

- 10 1. Food Stores
- 11 2. Offices
- 12 3. Retail and Personal Services
- 13 4. Public Utilities
- 14 5. Automotive Services
- 15 6. Restaurants
- 16 7. Elementary/Secondary Schools
- 17 8. Colleges/Trade Schools
- 18 9. Hospitals/Health Services
- 19 10. Hotels/Motels
- 20 11. Religious Organizations
- 21 12. Miscellaneous

22 The COMMEND model, similar to the REEPS model
23 used in the residential sector, is structurally
24 oriented toward long-term forecasting and strategic
25 analysis. A disaggregate single equation

1 econometric model which represents monthly
2 kilowatthours per customer per billing day as a
3 function of weather (heating and cooling degree
4 hours), price of electricity and seasonal varia-
5 tions is used to develop monthly allocations and to
6 calibrate the short-term COMMEND model output.

7

8 Q. What rate schedules are included in your industrial
9 class forecast of customers and energy sales?

10 A. Gulf's industrial customer class consists of
11 customers billed under the GSD (general service-
12 demand), GSDT (general service-demand, time-of-
13 use), LP (large power service), LPT (large power
14 service, time-of-use) and PXT (large high load
15 factor service, time-of-use) rate schedules.

16

17 Q. Describe the methods used to prepare your industri-
18 al class energy sales forecast.

19 A. The short-term industrial energy sales forecast is
20 developed using a combination of on-site surveys of
21 major industrial customers, trending techniques,
22 and multiple regression analysis. Forty-two of
23 Gulf's largest customers, representing over 90
24 percent of industrial class sales, are interviewed
25 to identify load changes due to equipment addition,

1 replacement or changes in operating characteris-
2 tics.

3 The short-term forecast of monthly sales to
4 these major industrial customers is a synthesis of
5 the detailed survey information and historical
6 monthly load factor trends. The forecast of
7 short-term sales to the remaining smaller industri-
8 al customers is developed using multiple regression
9 analysis.

10 The long-term forecast of industrial energy
11 sales is based on econometric models of the chemi-
12 cal, pulp and paper, other manufacturing, and
13 nonmanufacturing sectors. The industrial forecast
14 is further refined by accounting for expected
15 cogeneration installations and the effects of the
16 supplemental energy schedule.

17

18 Q. How was your forecast of territorial wholesale
19 energy prepared?

20 A. The short-term forecast of energy sales to territo-
21 rial wholesale customers is based on interviews
22 with these customers, as well as recent historical
23 data. A forecast of total monthly energy require-
24 ments at each wholesale delivery point is produced.
25 Energy requirements purchased from the Southeastern

1 Power Administration (based on current contracts)
2 by our wholesale customers are then removed from
3 the total requirements to arrive at sales for
4 resale. The long-term forecast is based on esti-
5 mates of annual growth rates for each delivery
6 point, according to future growth potential.

7

8 Q. Please describe the methods used to prepare your
9 peak demand forecast.

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

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

23 HELM represents an approach designed to better
24 capture changes in the underlying structure of
25 electricity consumption. Rapid increases in energy

1 prices during the 1970's and early 1980's brought
2 about changes in the efficiency of energy-using
3 equipment. Additionally, sociodemographic and
4 microeconomic developments have changed the compo-
5 sition of electricity consumption, including
6 changes in fuel shares, housing mix, household age
7 and size, construction features, mix of commercial
8 services, and mix of industrial products.

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

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

24 Model inputs include energy forecasts and load
25 shape data for the user-specified end-uses. Inputs

1 are also required to reflect new technologies, rate
2 structures and other demand-side programs. Model
3 outputs include hourly system and class load
4 curves, load duration curves, monthly system and
5 class peaks, load factors and energy requirements
6 by season and rating period.

7 The methodology embedded in HELM may be
8 referred to as a "bottom-up" approach. Class and
9 system load shapes are calculated by aggregating
10 the load shapes of component end-uses.

11

12 Q. Please describe the procedure used to develop the
13 1990 retail base rate revenue forecast.

14 A. We applied the appropriate rate schedules to the
15 monthly projections of customers, energy sales and
16 billing demands for each customer classification.
17 The revenue forecast is based upon rates currently
18 reflected in Gulf's tariff.

19

20 Q. You indicated earlier that you are responsible for
21 Gulf's load research activities. What tabulations
22 have you provided detailing the load research data
23 being used in these proceedings?

24 A. Schedule 5 provides a summary of rate class data
25 collected during 1987, including presentation of

1 significant variables which allow for relative
2 comparisons. Also included in this summary is
3 information concerning sample sizes, system coinci-
4 dent peak demand and relative accuracy.

5

6 Q. Does your 1987 Cost of Service Load Research sample
7 design meet the requirements of the Cost of Service
8 Load Research Rule, Docket No. 820491-EU, Order No.
9 13026?

10 A. Yes, the sample design does meet the requirements
11 of the referenced rule.

12

13 Q. Are you aware of any changes to the load data used
14 for cost of service purposes?

15 A. Yes, a correction was made to MFR E-14 subsequent
16 to its use in the jurisdictional separation study.
17 This correction involved modification of coincident
18 peak demands for the test year. The change had no
19 significant impact on test year retail rate base
20 calculations. In fact, the 12 month average
21 coincident retail peak demand was increased by only
22 262 kilowatts, or approximately .02 percent. Our
23 decision to make the correction was based on our
24 desire to achieve the best possible allocation of
25 costs among individual rate classes, which was then

1 incorporated within the rate design discussed in
2 Mr. Haskins' testimony.

3

4 Q. Does this conclude your testimony?

5 A. Yes, it does.

6

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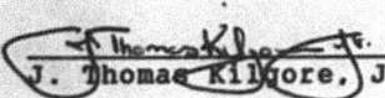
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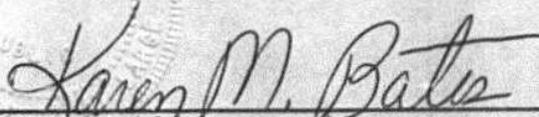
Before me the undersigned authority personally appeared J. Thomas Kilgore, Jr., who first being duly sworn, says that he is the witness named in the testimony to which the Affidavit is attached; that he prepared said testimony and any exhibits included therein on behalf of Gulf Power Company in support of its petition for an increase in rates and charges in Florida Public Service Commission Docket No. 891345-EI; and that the matters and things set forth herein are true to the best of his knowledge and belief.

Dated at Pensacola, Florida this 7th of December, 1989.



J. Thomas Kilgore, Jr.

Sworn to and subscribed before me
this 7th day of December, 1989.



Notary Public

My Commission Expires
July 25, 1990

Florida Public Service Commission
Docket No. 891345-EI
GULF POWER COMPANY
Witness: J. Thomas Kilgore, Jr.
Exhibit No. _____ (JTK-1)
Schedule 1

GULF POWER COMPANY
1990 RETAIL CUSTOMER FORECAST

| <u>Class</u> | <u>Revenue Code</u> | <u>Year-End Customers</u> | <u>12 Month Average Number of Customers</u> |
|------------------------|---------------------|---------------------------|-------------------------------------------------|
| <u>Residential</u> | | | |
| RS | 02-09 | 255,585 | 253,508 |
| RST | 10 | 18 | 18 |
| OS-II | 50 | <u>2,007</u> | <u>1,947</u> |
| TOTAL Residential | | 257,610 | 255,473 |
| <u>Commercial</u> | | | |
| GS | 201-203 | 22,084 | 21,967 |
| GSD | 204 | 10,348 | 10,248 |
| GST | 206 | 8 | 8 |
| GSDT | 208 | 170 | 167 |
| LP | 216 | 83 | 82 |
| LPT | 217 | 5 | 5 |
| SS | 218 | 0 | 0 |
| OS-II | 220/222 | 1,637 | 1,608 |
| OS-III | 221 | <u>375</u> | <u>367</u> |
| TOTAL Commercial | | 34,710 | 34,451 |
| <u>Industrial</u> | | | |
| GSD | 250 | 168 | 167 |
| GSDT | 251 | 6 | 6 |
| LP | 254 | 26 | 26 |
| LPT | 255 | 28 | 28 |
| PXT | 261 | 5 | 5 |
| SS | 265 | <u>1</u> | <u>1</u> |
| TOTAL Industrial | | 234 | 233 |
| <u>Street Lighting</u> | | | |
| OS-I | 408 | 52 | 52 |
| OS-I | 411 | <u>4</u> | <u>4</u> |
| TOTAL Street Lighting | | 56 | 56 |
| TOTAL RETAIL | | <u>292,610</u> | <u>290,213</u> |

NOTE: Detail may not sum to totals due to rounding.

GULF POWER COMPANY
1990 RETAIL ENERGY SALES FORECAST

| <u>Class</u> | <u>Revenue Code</u> | <u>KWH Sales</u> |
|------------------------|---------------------|----------------------|
| <u>Residential</u> | | |
| RS | 02-09 | 3,322,084,505 |
| RST | 10 | 289,195 |
| OS-II | 50 | 14,207,934 |
| Unbilled | | <u>8,320,319</u> |
| TOTAL Residential | | 3,344,901,953 |
| <u>Commercial</u> | | |
| GS | 201-203 | 210,286,546 |
| GSD | 204 | 1,620,803,290 |
| GST | 206 | 94,441 |
| GSDT | 208 | 12,765,367 |
| LP | 216 | 254,190,876 |
| LPT | 217 | 86,640,467 |
| SS | 218 | 300,000 |
| OS-II | 220/222 | 16,842,559 |
| OS-III | 221 | 7,329,177 |
| Unbilled | | <u>4,916,294</u> |
| TOTAL Commercial | | 2,214,169,017 |
| <u>Industrial</u> | | |
| GSD | 250 | 84,441,422 |
| GSDT | 251 | 9,873,407 |
| LP | 254 | 117,350,952 |
| LPT | 255 | 1,027,155,136 |
| PXT | 261 | 879,877,333 |
| SS | 265 | 2,613,508 |
| Unbilled | | <u>2,845,524</u> |
| TOTAL Industrial | | 2,124,157,282 |
| <u>Street Lighting</u> | | |
| OS-I | 408 | 15,437,851 |
| OS-I | 411 | <u>823,990</u> |
| TOTAL Street Lighting | | 16,261,841 |
| | | |
| TOTAL RETAIL | | <u>7,699,490,093</u> |

GULF POWER COMPANY
1990 RETAIL BASE REVENUE FORECAST

| <u>Class</u> | <u>Revenue Code</u> | <u>Base Revenue</u> |
|------------------------|---------------------|-----------------------------|
| <u>Residential</u> | | |
| RS | 02-09 | \$131,548,665 |
| RST | 10 | 10,625 |
| OS-II | 50 | 1,297,714 |
| Unbilled | | <u>306,223</u> |
| TOTAL Residential | | \$133,163,227 |
| <u>Commercial</u> | | |
| GS | 201-203 | \$ 14,979,797 |
| GSD | 204 | 48,355,924 |
| GST | 206 | 5,692 |
| GSDT | 208 | 781,291 |
| LP | 216 | 6,358,343 |
| LPT | 217 | 1,637,973 |
| SS | 218 | 48,938 |
| OS-II | 220/222 | 1,195,633 |
| OS-III | 221 | 335,751 |
| Unbilled | | <u>177,783</u> |
| TOTAL Commercial | | \$ 73,877,125 |
| <u>Industrial</u> | | |
| GSD | 250 | \$ 2,566,006 |
| GSDT | 251 | 182,513 |
| LP | 254 | 2,997,403 |
| LPT | 255 | 20,060,843 |
| PXT | 261 | 14,558,948 |
| SS | 265 | 531,730 |
| Unbilled | | <u>80,710</u> |
| TOTAL Industrial | | \$ 40,978,153 |
| <u>Street Lighting</u> | | |
| OS-I | 408 | \$ 1,247,759 |
| OS-I | 411 | <u>15,595</u> |
| TOTAL Street Lighting | | \$ 1,263,354 |
| TOTAL RETAIL | | <u>\$249,281,859</u> |

GULF POWER COMPANY
SHORT-TERM
RETAIL FORECAST ACCURACY

| | <u>1986</u> | <u>1987</u> | <u>1988</u> | <u>Jan-Aug 1989</u> |
|--------------------------------------------------|-------------|-------------|-------------|-------------------------|
| <u>Customers - Average Number</u> | | | | |
| Actual | 263,637 | 271,439 | 277,876 | 282,997 |
| Forecast | 264,562 | 274,950 | 279,191 | 283,528 |
| Deviation | (925) | (3,511) | (1,315) | (531) |
| % Deviation | (0.3) | (1.3) | (0.5) | (0.2) |
| <u>Annual MWH Sales</u> | | | | |
| Actual | 6,635,869 | 6,895,620 | 7,226,256 | 5,072,825 |
| Forecast | 6,543,120 | 6,658,231 | 7,276,471 | 5,208,689 |
| Deviation | 92,749 | 237,389 | (50,215) | (135,864) |
| % Deviation | 1.4 | 3.6 | (0.7) | (2.6) |
| Weather Adjusted | 6,620,841 | 6,762,324 | 7,287,515 | 5,205,775 |
| Deviation | 77,721 | 104,093 | 11,044 | (2,914) |
| % Deviation | 1.2 | 1.6 | 0.1 | (0.1) |
| <u>Base Rate Revenues (Thousands of Dollars)</u> | | | | |
| Actual | 215,510 | 224,476 | 233,417 | 164,017 |
| Forecast | 212,733 | 217,507 | 237,200 | 169,846 |
| Deviation | 2,777 | 6,969 | (3,783) | (5,829) |
| % Deviation | 1.3 | 3.2 | (1.6) | (3.4) |

RATE AND OTHER CLASSIFICATIONS SUMMARY

1987 LOAD RESEARCH STUDY YEAR

| <u>Classification</u> | <u>Year End Customers</u> | <u>Annual MWH</u> | <u>System CP KW</u> | <u>Sample Points</u> | <u>Relative Accuracy %</u> |
|----------------------------|---------------------------|-------------------|---------------------|----------------------|----------------------------|
| RS/RST | 239,419 | 3,031,846 | 702,317 | 210 | 5.96 |
| GS/GST | 20,685 | 179,533 | 44,426 | 350 | 6.31 |
| GSD/GSDT | 9,775 | 1,540,069 | 302,624 | 160 | 4.90 |
| LP | 108 | 348,910 | 59,263 | 55 | 3.25 |
| LPT | 34 | 990,426 | 178,826 | 30 | 2.63 |
| PXT | 4 | 742,957 | 83,014 | 4 | 0.00 |
| RE | 9 | 316,466 | 72,571 | 9 | 0.00 |
| OSI, II, III | 3,510 | 43,469 | 576 | N/A | N/A |
| Illegal Usage and Unbilled | N/A | 18,410 | N/A | N/A | N/A |
| Interdepartmental | N/A | 925 | N/A | N/A | N/A |
| Company Use | N/A | 17,394 | N/A | N/A | N/A |
| Losses | N/A | 480,614 | 180,376 | N/A | N/A |
| SEPA Allocation | N/A | 11,926 | 7 | N/A | N/A |
| Territorial | 273,544 | 7,692,700* | 1,624,000 | 818 | N/A |

*Excludes SEPA, Company Use, and Interdepartmental.

Florida Public Service Commission
Docket No. 891345-EI
GULF POWER COMPANY
Witness: J. Thomas Kilgore, Jr.
Exhibit No. _____ (JTK-1)
Schedule 5

Responsibility for Minimum Filing Requirements

| <u>Schedule</u> | <u>Title</u> |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| A-6 | Revenue from Sale of Electricity by Rate Schedule |
| C-11 | Unbilled Revenues |
| C-16 | Conservation Goals and Progress |
| E-7 | Source and Amount of Revenues at Present and Proposed Rates |
| E-12 | Cost of Service Load Data |
| E-14 | Development of Coincident and Non-Coincident Demands for Cost Study |
| E-15 | Adjustment to Test Year Unbilled Revenue |
| E-18a | Billing Determinants Number of Bills |
| E-18b | Billing Determinants - KW Demand |
| E-18c | Billing Determinants - MWH Sales |
| E-18d | Projected Billing Determinants - Derivation |
| E-19 | Customers by Voltage Level |
| E-20 | Load Research |
| E-21a | Correlations Between Contributions to the 12 Monthly System Peaks and Billing KW, KWH, Maximum On-Peak Demand, and On-Peak KWH for All Demand Classes |
| E-22 | Load Duration Curves |
| E-23 | System Load Shapes |
| E-25a | Days Within 10% of Monthly Peaks |
| E-25b | Hours within 10% of Monthly Peaks |
| E-26 | Monthly Peaks |

| <u>Schedule</u> | <u>Title</u> |
|-----------------|---------------------------------------------------------------------|
| F-9 | Forecasting Models |
| F-10 | Forecasting Models - Sensitivity of Output to Changes in Input Data |
| F-11 | Forecasting Models - Historical Data |
| F-12 | Heating Degree Days |
| F-13 | Cooling Degree Days |
| F-14 | Temperature at Time of Monthly Peaks |