Susan D. Ritenour Secretary and Treasurer and Regulatory Manager One Energy Place Pensacola, Florida 32520-0781

Tel 850.444.6231 Fax 850.444.6026 SDRITENO@southernco.com





June 27, 2005

Ms. Blanca S. Bayo, Director Division of the Commission Clerk and Administrative Services Florida Public Service Commission 2540 Shumard Oak Boulevard Tallahassee FL 32399-0870

Dear Ms. Bayo:

Enclosed is Gulf Power Company's 2006 Cost of Service Load Research Plan which is filed pursuant to Order No. 13026.

Sincerely,

Susan D. Raisour

Enclosure

DOCUMENT NUMBER - DATE 06153 JUN 29 8

FPSC-COMMISSION CLEP!

2006 Cost of Service Load Research Plan GULF POWER COMPANY Docket No. 820491-EU Page 1 of 19

# GULF POWER COMPANY

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# Cost of Service Load Research Plan

2006

June 2005

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2006 Cost of Service Load Research Plan GULF POWER COMPANY Docket No. 820491-EU Page 2 of 19

## INTRODUCTION

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The purpose of this load research plan is to ensure compliance with the Cost of Service Load Research Rule (referred to as the Rule), Docket No. 820491-EU, Order No. 13026, issued 02-23-84 by the Florida Public Service Commission.

This rule requires that all subject utilities shall provide for load research sampling of all rate classes that account for more than one percent of their annual retail sales and that the sampling plan shall be designed to provide estimates of the summer and winter peak demand by class and the averages of the twelve monthly coincident peaks for each class within plus or minus 10 percent relative accuracy at the 90 percent confidence level. However, the Rule was amended January 6, 2004, to change the requirement for Rate GS: "The sampling plan shall be designed to provide estimates of the summer and winter peak demands for the General Service Non-Demand rate class within plus or minus 15 percent at the 90 percent confidence interval." Another revision to the Rule states that each subject utility shall submit a revised sampling plan to the Commission no less than every three years. Previously, the Rule stated that the plan submission must occur every two years.

Provided in Table 1 are Gulf Power's rate classes subject to this rule and their 2003 energy relationship to the total retail energy sales. As shown on this table, rate classes RS, GS, GSD, LP, LPT, RTP, CISR/CSA and SBS meet the Rule's threshold which causes them to be included in the Cost of Service Load Research Plan.

2006 Cost of Service Load Research Plan GULF POWER COMPANY Docket No. 820491-EU Page 3 of 19

# TABLE 1

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# GULF POWER COMPANY Energy By Rate

| Rate             | 2003<br><u>MWh</u> | % of<br><u>Total Energy</u> |
|------------------|--------------------|-----------------------------|
| nale             | <u>IVIV II</u>     | Total Litergy               |
| RS               | 5,058,291          | 46.66%                      |
| GS               | 277,337            | 2.56%                       |
| GSD              | 2,413,180          | 22.26%                      |
| LP               | 578,099            | 5.33%                       |
| LPT              | 1,434,589          | 13.23%                      |
| RTP              | 435,038            | 4.01%                       |
| OSI/II           | 98,502             | 0.91%                       |
| OS-III           | 25,345             | 0.23%                       |
| OS-IV            | 4,063              | 0.04%                       |
| PX               | 87,905             | 0.81%                       |
| SBS              | 143,435            | 1.32%                       |
| CISR/CSA         | 284,650            | 2.63%                       |
| TOTAL RETAIL (1) | 10,840,434         | 100.00%                     |

(1) Excludes unbilled, Interdepartmental, company use and losses.

2006 Cost of Service Load Research Plan GULF POWER COMPANY Docket No. 820491-EU Page 4 of 19

## PREVIOUS SAMPLE DESIGN PLAN

The 2003 Load Research Study used the combined ratio estimator methodology for sample size estimates in all rate classes. Sample points were allocated to the various strata using the Neyman allocation procedure. Provided in Table 2 is a summary of the 2003 sample size for each of the applicable rate classes and the strata allocation variable with the strata limits.

The RS rate class, which represents approximately 47 percent of the total Company's annual kWh retail sales, was prestratified into six strata based on housing type and winter peak month usage. The break points were 1000 kWh for multifamily and 1450 and 2500 kWh for single family detached.

The GS rate class sample design was prestratified by kWh into four strata based on winter peak month usage with break points at 650, 1350, and 2250 kWh. The GS class accounts for only 2.5 percent of the Company's annual kWh retail sales.

The GSD rate class, accounting for 22 percent of the Company's annual kWh retail sales, was prestratified on the winter peak month kW demand with strata break points of 20.0 kW, 50.0 kW and 130.0 kW.

The LP rate class was prestratified into two groups. The first stratum contained a random sampling of 30 customers out of the total group of customers whose billing demand during January was lower than 800 kW. The second stratum was a census of all customers whose billing demand was 800 kW or higher. The LP rate

2006 Cost of Service Load Research Plan GULF POWER COMPANY Docket No. 820491-EU Page 5 of 19

class accounts for 5.3 percent of the Company's annual kWh retail sales.

The LPT rate class was prestratified into two groups. The first stratum contained a random sampling of 20 customers out of the total group of customers whose billing demand during January was lower than 1,000 kW. The second stratum was a census of all customers whose billing demand was 1,000 kW or higher. The LPT rate class accounts for approximately 13 percent of the Company's annual kWh retail sales.

The SBS rate class customers, the RTP rate class customers, and the CISR/CSA customers were 100 percent metered, thus requiring no sample design.

## PREVIOUS STUDY ACCURACY

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The relative accuracy of the 2003 load research data based on the sample design described above is provided in Table 3 and the results obtained in this study were used in the design of the 2006 Load Research Study. All rate classes achieved better than ten percent accuracy at the ninety percent confidence interval for the summer and winter peak period as well as for the averages of the twelve monthly coincident peaks.

2006 Cost of Service Load Research Plan GULF POWER COMPANY Docket No. 820491-EU Page 6 of 19

# TABLE 2

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# GULF POWER COMPANY 2003 Cost of Service Load Research Rule Sample Size

| Rate     |                | Strata Allocation  | Sample Size                                    |          |
|----------|----------------|--|--|----------|
| RS       | 2)<br>3)<br>4) | MF GT 1000 kWh<br>MF 0-1000 kWh<br>MH<br>SFD 1451-2500 kWh<br>SFD GE 2501 kWh<br>SFD 0-1450 kWh<br>TOTAL | 21<br>20<br>30<br>52<br>52<br><u>50</u><br>225 |          |
| GS       | 2)<br>3)       | 0-650 kWh<br>651-1350 kWh<br>1351-2250 kWh<br>over 2250 kWh<br>TOTAL                                     | 107<br>95<br>89<br><u>89</u><br>380            |          |
| GSD      | 2)             | 0-20.0 kW<br>20.1-50.0 kW<br>50.1-130.0 kW<br>over 130.0 kW<br>TOTAL                                     | 31<br>35<br>52<br><u>42</u><br>160             |          |
| LP       | 1)<br>2)       | Less than 800 kW<br>800 kW and greater<br>TOTAL  | 30<br><u>24</u><br>54                          | (census) |
| LPT      | 1)<br>2)       | Less than 1000 kW<br>1000 kW and greater<br>TOTAL  | 20<br><u>29</u><br>49                          | (census) |
| RTP      | 1)             | All customers  | 7  | (census) |
| SBS      |                | All customers  | 2  | (census) |
| CISR/CSA |                | All customers  | 2  | (census) |
|          |                | TOTAL  | 879  |          |

2006 Cost of Service Load Research Plan GULF POWER COMPANY Docket No. 820491-EU Page 7 of 19

# Table 3

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# GULF POWER COMPANY Load Research Data January, 2003 to December, 2003

| 1            | E CLASS RS<br>Estimated<br>CPKW |       |               | E CLASS GS<br>Estimated<br>CPKW | Relative<br><u>Accuracy</u> |
|--------------|---------------------------------|-------|---------------|---------------------------------|-----------------------------|
| Winter Peak  | 1,465,727                       | 7.31% | Winter Peak   | 54,901                          | 8.89%                       |
| Summer Peak  | 1,037,645                       | 5.29% | Summer Peak   | 65,023                          | 7.30%                       |
| 12 Month Avg | . 935,610                       | 2.56% | 12 Month Avg. | 49,541                          | 4.07%                       |

|               | CLASS GS<br>Stimated |          | RATE CLASS LP<br>Estimated Relative |         |                 |  |  |  |
|---------------|----------------------|----------|-------------------------------------|---------|-----------------|--|--|--|
| 2003          | CPKW                 | Accuracy | 2003                                | CPKW    | <u>Accuracy</u> |  |  |  |
| Winter Peak   | 328,170              | 7.31%    | Winter Peak                         | 66,376  | 6.11%           |  |  |  |
| Summer Peak   | 470,592              | 3.99%    | Summer Peak                         | 108,386 | 4.21%           |  |  |  |
| 12 Month Avg. | 378,462              | 2.87%    | 12 Month Avg.                       | 83,705  | 2.96%           |  |  |  |

|               | CLASS LP1<br>stimated | Relative        | RATE CLASS CISR/CSA<br>Estimated Relativ |        |          |  |  |  |
|---------------|-----------------------|-----------------|--|--------|----------|--|--|--|
| 2003 =        | <u>CPKW</u>           | <u>Accuracy</u> | 2003                                     | CPKW   | Accuracy |  |  |  |
| Winter Peak   | 152,142               | 1.53%           | Winter Peak                              | 28,954 | 0.00%    |  |  |  |
| Summer Peak   | 219,442               | 0.60%           | Summer Peak                              | 39,495 | 0.00%    |  |  |  |
| 12 Month Avg. | 189,640               | 0.44%           | 12 Month Avg.                            | 35,956 | 0.00%    |  |  |  |

|               | CLASS RTP<br>stimated<br><u>CPKW</u> | Relative<br><u>Accuracy</u> |               | E CLASS SBS<br>Stimated<br>CPKW | Relative<br><u>Accuracy</u> |
|---------------|--------------------------------------|-----------------------------|---------------|---------------------------------|-----------------------------|
| Winter Peak   | 38,856                               | 0.00%                       | Winter Peak   | 0                               | 0.00%                       |
| Summer Peak   | 34,966                               | 0.00%                       | Summer Peak   | 25,257                          | 0.00%                       |
| 12 Month Avg. | 46,653                               | 0.00%                       | 12 Month Avg. | 13,528                          | 0.00%                       |

2006 Cost of Service Load Research Plan GULF POWER COMPANY Docket No. 820491-EU Page 8 of 19

## 2006 SAMPLE DESIGN PLAN

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This 2006 sample design plan uses the data collected from the 2003 Load Research Study as required by the Cost of Service Load Research Rule, which states that ". . . any new or revised plan shall be developed using data from the utility's most current load research to determine the required sampling plan to achieve the precision required . . ".

The combined ratio estimator methodology was used for the sample size estimates for this 2006 sample plan. The formulas for this plan using this method are provided in Table 4. The definitions for the variables for these formulas are provided in Table 5. Stratified random sampling was used within each rate class, except those rate classes which were census-metered, to achieve better accuracy with fewer sample points. The actual calculations for each rate class, which provide sample size determinations based on the Neyman allocation methods, are provided in the description of each rate class within this study plan.

In all rate classes where census metering is not applicable, a new sample will be drawn from the existing population and the recorders deployed to those premises.

A summary of strata allocation and sample size for all rate classes is shown in Table 9.

2006 Cost of Service Load Research Plan GULF POWER COMPANY Docket No. 820491-EU Page 9 of 19

# TABLE 4GULF POWER COMPANYFormulas for Sample Plan

I. Sample Size Estimates Using Combined Ratio Estimator:

$$n = \frac{\left[\sum_{h=1}^{L} W_{h} \sqrt{F_{h}}\right]^{2}}{\left[\frac{D\left(\frac{\hat{T}_{y}}{N}\right)}{1.65}\right]^{2} + \frac{1}{N} \sum_{h=1}^{L} W_{h} F_{h}}$$

$$F_{h} = S_{yh}^{2} + \left(\hat{R}^{2} * S_{xh}^{2}\right) - 2\hat{R}r_{h} * S_{yh} * S_{xh}$$

$$\hat{T}_y = \hat{R}^* T_y$$

$$\hat{R} = \frac{\sum_{h=1}^{L} W_h \overline{y}_h}{\sum_{h=1}^{L} W_h \overline{x}_h}$$

II. Neyman Allocation of Sample Points to Strata:

$$n_{h} = \frac{W_{h} S_{yh}}{\sum_{h=1}^{L} W_{h} S_{yh}} * n$$

2006 Cost of Service Load Research Plan GULF POWER COMPANY Docket No. 820491-EU Page 10 of 19

# TABLE 5

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# GULF POWER COMPANY Definitions for Formulas

| n                           | = | Sample Size Estimate                                       |
|-----------------------------|---|--|
| n <sub>h</sub>              | = | Stratum Sample Size  |
| Wh                          | = | Stratum Weight   |
| D                           | = | Percent Relative Accuracy (0.1 or 0.15 for Rate GS)        |
| т <sub>у</sub>              | = | Estimated Population CPKW                                  |
| N                           | = | Population Number of Customers                             |
| •                           |   |  |
| R                           | = | Ratio Estimator  |
| T_x                         | = | Population kWh   |
| Y <sub>h</sub>              | = | Stratum Average CPKW                                       |
| $S_{yh}$                    | = | Stratum Standard Deviation of CPKW                         |
| $\overline{\mathbf{x}}_{h}$ | = | Stratum Average Monthly kWh                                |
| $S_{xh}$                    | = | Stratum Standard Deviation of Monthly kWh                  |
| r <sub>h</sub>              | = | Stratum Correlation Coefficient between CPKW & Monthly kWh |
|                             |   | Subscripts   |
| h                           | = | Stratum number   |
| У                           | = | CPKW variable  |
| x                           | = | Monthly kWh variable                                       |

2006 Cost of Service Load Research Plan GULF POWER COMPANY Docket No. 820491-EU Page 11 of 19

# Residential Rate Class

The 2006 RS rate class study will use a similar design to that used in 2003. A two-way sample design was used that incorporated a primary stratification variable of housing type and a secondary stratification variable of kWh for the single-family detached and multifamily housing types only. The only changes to the 2006 study are the breakpoints. The kWh breakpoint for multifamily will be 900 kWh and the two breakpoints for single family detached will be 925 kWh and 1,675 kWh.

The Neyman allocation of sample to strata for the 2006 study is as follows:

|     | PRIMARY                | SECONDARY       | WINT | rer |           |
|-----|------------------------|-----------------|------|-----|-----------|
|     | STRATA                 | STRATA          | WSTD | MIN | 2006      |
| STR | DESCRIPTION            | DESCRIPTION     | CPKW | n   | INSTALLED |
| 1   | Multifamily            | gt 900 kWh      | 0.31 | 10  | 20        |
| 2   | Multifamily            | 0-900 Kwh       | 0.34 | 11  | 21        |
| 3   | Mobile Home            |                 | 0.53 | 17  | 33        |
| 4   | Single Family Detached | 926 to 1675 kWh | 0.84 | 27  | 53        |
| 5   | Single Family Detached | ge 1675 kWh     | 0.78 | 24  | 49        |
| 6   | Single Family Detached | 0-925 kWh       | 0.78 | 24  | 49        |
|     |                        |                 |      |     |           |
|     |                        |                 | 3.57 | 113 | 225       |

Additional data and study design calculations for this rate class are provided in Table 6.

2006 Cost of Service Load Research Plan GULF POWER COMPANY Docket No. 820491-EU Page 12 of 19

## TABLE 6

#### RATE CLASS RS STRATIFIED ON 2005 PREMISE TYPE AND JANUARY KWH SIX STRATA

#### 01/2003 PEAK

|               |          |      | ]======= | ===CPKW [ | DATA==== | ======] | ]======= | =====KWH   | DATA===== |         |       |          |
|---------------|----------|------|----------|-----------|----------|---------|----------|------------|-----------|---------|-------|----------|
| STRATUM       | WEIGHT   | S.S. | AVERAGE  | WGT AVG   | STD DEV  | WGT STD | AVERAGE  | WGT AVG    | STD DEV   | WGT STD | (F)   | CORR.    |
| MF-GT900      | 0.103310 | 18   | 4.65     | 0.48      | 2.97     | 0.31    | 1310.67  | 135.40     | 456,66    | 47.18   | 0.20  | 0.791092 |
| MF-LE900      | 0.163534 | 23   | 2.05     | 0.33      | 2.07     | 0.34    | 516.78   | 84.51      | 253.35    | 41.43   | 0.30  | 0.464857 |
| MOBILE        | 0.092847 | 28   | 4.29     | 0.40      | 5.69     | 0.53    | 983.29   | 91.30      | 837.18    | 77.73   | 0.32  | 0.846963 |
| SF- 925*1675  | 0.220025 | 53   | 5.47     | 1.20      | 3.84     | 0.84    | 1333.00  | 293.29     | 240.27    | 52.86   | 0.80  | 0.330793 |
| SF-GE1676     | 0.221794 | 67   | 8.65     | 1.92      | 3.50     | 0.78    | 2516.63  | 558.17     | 675.70    | 149.87  | 0.81  | 0.301074 |
| SF-LE925      | 0.198490 | 29   | 2.25     | 0.45      | 3.94     | 0.78    | 470.31   | 93.35      | 280.70    | 55.72   | 0.74  | 0.321807 |
| =====         |          |      |          |           |          |         |          |            |           |         | ===== |          |
| TOTAL         |          |      |          | 4.78      |          | 3.57    |          | 1256.02959 | 936       |         | 3.17  |          |
| RATIO R HAT = | 0.00381  |      |          |           |          |         |          |            |           |         |       |          |

| 10.27.7.0 |                |                         |  |
|-----------|----------------|-------------------------|--|
| POP.      | # CUST.:337182 | POP. ENERGY : 435351716 |  |
| POP.      | CPKW : 1656922 | POP. KW/C 4.91          |  |

ESTIMATES FOR 90% C.I., 10% RELATIVE ACCURACY MEAN PER UNIT SAMPLE SIZE ESTIMATE = 151.30 RATIO METHOD SAMPLE SIZE ESTIMATE = 112.67

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#### 07/2003 PEAK

|              |          |      | ]======== | ===CPKW I | )ATA==== |         | ]========= | KWH        | DATA===== |         |      |          |
|--------------|----------|------|-----------|-----------|----------|---------|------------|------------|-----------|---------|------|----------|
| STRATUM      | WEIGHT   | S.S. | AVERAGE   | WGT AVG   | STD DEV  | WGT STD | AVERAGE    | WGT AVG    | STD DEV   | WGT STD | (F)  | CORR.    |
| MF-GT900     | 0.103310 | 17   | 3.04      | 0.31      | 2.36     | 0.24    | 1677.53    | 173.31     | 960.63    | 99.24   | 0.21 | 0.574179 |
| MF-LE900     | 0.163534 | 22   | 1.69      | 0.28      | 1.08     | 0,18    | 1192.36    | 194.99     | 635.06    | 103.85  | 0.09 | 0.894855 |
| MOBILE       | 0.092847 | 26   | 2.07      | 0.19      | 2.02     | 0.19    | 934.69     | 86.78      | 751.74    | 69.80   | 0.12 | 0.768012 |
| SF- 925*1675 | 0.220025 | 54   | 3.65      | 0.80      | 1.86     | 0.41    | 1813.81    | 399.08     | 696.70    | 153.29  | 0.33 | 0.602667 |
| SF-GE1676    | 0.221794 | 67   | 4.30      | 0.95      | 2.20     | 0.49    | 2217.30    | 491.78     | 873.17    | 193.66  | 0.32 | 0.753115 |
| SF-LE925     | 0.198490 | 30   | 2.91      | 0.58      | 1.94     | 0.38    | 1330.70    | 264.13     | 779.66    | 154.75  | 0.24 | 0.780082 |
|              |          |      |           |           |          |         |            |            |           | -       | **** |          |
| TOTAL        |          |      |           | 3.12      |          | 1.89    |            | 1610.07968 | 379       |         | 1.31 |          |
| TOTAL        |          |      |           | 3.12      |          | 1.89    |            | 1610.07968 | 379       |         | 1.31 |          |

| RATIO R_HAT = 0.00194 |                         |
|-----------------------|-------------------------|
| POP. # CUST.:341637   | POP. ENERGY : 564399308 |
| POP. CPKW : 1093198   | POP. KW/C 3.20          |

ESTIMATES FOR 90% C.I., 10% RELATIVE ACCURACY MEAN PER UNIT SAMPLE SIZE ESTIMATE = 99.48 RATIO METHOD SAMPLE SIZE ESTIMATE = 45.32

2006 Cost of Service Load Research Plan GULF POWER COMPANY Docket No. 820491-EU Page 13 of 19

# GENERAL SERVICE (NON-DEMAND) RATE CLASS

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The 2003 study contained a total of 380 sample points stratified on winter peak month energy with strata break points at 650, 1,350, and 2,250 kWh. The resulting accuracy did meet the target accuracy of 10 percent at the 90 percent confidence level during both winter and summer peaks. Since the target accuracy was met, the basic sample design will be kept for 2006 with minor changes in the breakpoints. The number of sample points will be reduced to 300 because of the change in the Cost of Service Load Research Rule, amended January 6, 2004, which states: "The sampling plan shall be designed to provide estimates of the summer and winter peak demands for the General Service Non-Demand rate class within plus or minus 15 percent at the 90 percent confidence interval." The 2006 GS rate class is prestratified into four strata with breakpoints at 300, 1,075, and 1,875 kWh of the average of January and February energy.

Shown below is the Neyman allocation of sample to strata for the 2006 study.

|     | WIN  | TER |           |
|-----|------|-----|-----------|
|     | WSTD | MIN | INSTALLED |
| STR | CPKW | n   | n         |
|     |      |     |           |
| 1   | 0.63 | 34  | 80        |
| 2   | 0.60 | 32  | 76        |
| 3   | 0.57 | 31  | 73        |
| 4   | 0.56 | _30 | 71        |
|     | 2.36 | 127 | 300       |

Additional data and study design calculations for this rate class are provided in Table 7.

2006 Cost of Service Load Research Plan GULF POWER COMPANY Docket No. 820491-EU Page 14 of 19

## TABLE 7

#### RATE CLASS GS ONE-WAY STRATIFICATION ON AVERAGE of JAN AND FEB KWH in 2005 with 15% RELACC

01/2003 PEAK

|           |          |      | ] ======= | ====CPKW | DATA===== | =======] | ]======== | =====KWH   | DATA===== | .======] |      |          |
|-----------|----------|------|-----------|----------|-----------|----------|-----------|------------|-----------|----------|------|----------|
| STRATUM   | WEIGHT   | s.s. | AVERAGE   | WGT AVG  | STD DEV   | WGT STD  | AVERAGE   | WGT AVG    | STD DEV   | WGT STD  | (F)  | CORR.    |
| 0- 300    | 0.428015 | 69   | 0.49      | 0.21     | 1.47      | 0.63     | 101.87    | 43.60      | 98.42     | 42.13    | 0.63 | 0.121638 |
| 301-1075  | 0.288723 | 95   | 1.56      | 0.45     | 2.07      | 0.60     | 682.81    | 197.14     | 219.95    | 63.50    | 0.59 | 0.177986 |
| 1076-1875 | 0.169677 | 78   | 3.81      | 0.65     | 3.34      | 0.57     | 1416.50   | 240.35     | 227.76    | 38.65    | 0.56 | 0.158079 |
| 1876- UP  | 0.113585 | 100  | 7.67      | 0.87     | 4.94      | 0.56     | 2679.18   | 304.31     | 847.75    | 96.29    | 0.52 | 0.377002 |
| *****     |          |      |           |          |           |          |           |            |           |          |      |          |
| TOTAL     |          |      |           | 2.18     |           | 2.36     |           | 785.406936 | 535       |          | 2.30 |          |

RATIO R\_HAT = 0.00277 POP. # CUST.: 29296 POP. ENERGY : 23656661 POP. CPKW : 65609 POP. KW/CUST.: 2.24

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ESTIMATES FOR 90% C.I., 15% RELATIVE ACCURACY MEAN PER UNIT SAMPLE SIZE ESTIMATE = 140.67 RATIO METHOD SAMPLE SIZE ESTIMATE = 127.04

#### 07/2003 PEAK

|           |          |      | ]======= | ====CPKW | DATA===== | =======] | ] ======== | =====KWH   | DATA===== | ]       |      |          |
|-----------|----------|------|----------|----------|-----------|----------|------------|------------|-----------|---------|------|----------|
| STRATUM   | WEIGHT   | S.S. | AVERAGE  | WGT AVG  | STD DEV   | WGT STD  | AVERAGE    | WGT AVG    | STD DEV   | WGT STD | (F)  | CORR .   |
| 0- 300    | 0.428015 | 65   | 0.37     | 0.16     | 0.79      | 0.34     | 188.05     | 80.49      | 219.91    | 94.13   | 0.29 | 0.505685 |
| 301-1075  | 0.288723 | 97   | 2.43     | 0.70     | 2.44      | 0.70     | 1049.65    | 303.06     | 626.97    | 181.02  | 0.54 | 0.645107 |
| 1076-1875 | 0.169677 | 76   | 4.06     | 0.69     | 2.98      | 0.51     | 1854.26    | 314.63     | 906.04    | 153.73  | 0.45 | 0.501913 |
| 1876- UP  | 0.113585 | 98   | 6.28     | 0.71     | 4.14      | 0.47     | 2679.27    | 304.32     | 1299.70   | 147.63  | 0.33 | 0.704827 |
|           |          |      |          |          |           |          |            |            |           |         |      |          |
| TOTAL     |          |      |          | 2.26     |           | 2.02     |            | 1002.49468 | 323       |         | 1.61 |          |

RATIO R\_HAT = 0.00226 POP. # CUST.: 29715 POP. ENERGY : 30233527 POP. CPKW : 68253 POP. KW/CUST.: 2.30

ESTIMATES FOR 90% C.I., 15% RELATIVE ACCURACY MEAN PER UNIT SAMPLE SIZE ESTIMATE = 95.55 RATIO METHOD SAMPLE SIZE ESTIMATE = 59.42

2006 Cost of Service Load Research Plan GULF POWER COMPANY Docket No. 820491-EU Page 15 of 19

## GENERAL SERVICE - DEMAND RATE CLASS

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Since the 2003 sample design provided very accurate load research results, no change is being proposed for the 2006 sample design. The stratification variable will be January kW billing demand with break points at 20 kW, 50 kW and 130 kW. The total number of sample points is to be 160, which is the same sample size as the 2003 study.

The Neyman allocation of sample to strata for the new study is as follows:

|     | WINI  | ER  |           |  |
|-----|-------|-----|-----------|--|
|     | WSTD  | MIN | INSTALLED |  |
| STR | CPKW  | n   | n         |  |
|     |       |     |           |  |
| 1   | 1.53  | 7   | 31        |  |
| 2   | 3.80  | 16  | 32        |  |
| 3   | 6.21  | 27  | 52        |  |
| 4   | 5.40  | 23  | 45        |  |
|     |       |     |           |  |
|     | 16.94 | 73  | 160       |  |

Additional data and study design calculations for this rate class are provided in Table 8.

2006 Cost of Service Load Research Plan GULF POWER COMPANY Docket No. 820491-EU Page 16 of 19

## Table 8

## RATE CLASS GSD STRATIFIED ON JANUARY 2005 KW (NCP)

#### 01/2003 PEAK

|                   |      | ]====== | ====CPKW | DATA==== | ]       | ] ≠≠≠===== | =====KWH  | DATA==== | ========] |       |          |
|-------------------|------|---------|----------|----------|---------|------------|-----------|----------|-----------|-------|----------|
| STRATUM WEIGHT    | S.S. | AVERAGE | WGT AVG  | STD DEV  | WGT STD | AVERAGE    | WGT AVG   | STD DEV  | WGT STD   | (F)   | CORR.    |
| 0 - 20 0.359435   | 22   | 6.41    | 2.30     | 4.26     | 1.53    | 2838.59    | 1020.29   | 1600.84  | 575.40    | 1.46  | 0.444139 |
| 20.1- 50 0.410325 | 35   | 17,18   | 7.05     | 9.27     | 3.80    | 8926.86    | 3662.91   | 4531.78  | 1859.50   | 3.42  | 0.598645 |
| 50,1-130 0.173800 | 37   | 52.24   | 9.08     | 35,71    | 6.21    | 23940.54   | 4160.87   | 16011.43 | 2782.79   | 4.17  | 0.759743 |
| 130.1-UP 0.056440 | 30   | 158.62  | 8.95     | 95.73    | 5.40    | 78168.80   | 4411.85   | 40830.37 | 2304.47   | 4.27  | 0.653618 |
| =======           |      |         |          |          |         |            |           |          |           |       |          |
| TOTAL             |      |         | 27.38    |          | 16.94   |            | 13255.914 | 598      |           | 13.32 |          |
|                   |      |         |          |          |         |            |           |          |           |       |          |

RATIO R\_HAT = 0.00207 POP. # CUST.: 14879 POP. ENERGY : 185138542 POP. CPKW :382453 POP. KW/CUST.: 25.70

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ESTIMATES FOR 90% C.I., 10% RELATIVE ACCURACY MEAN PER UNIT SAMPLE SIZE ESTIMATE = 103.60 RATIO METHOD SAMPLE SIZE ESTIMATE = 72.70

#### 07/2003 PEAK

|                   |      | ]====== | ====CPK₩ | DATA===== | =======] | ] = = = = = = = = = | === <b>=</b> ==KWH | DATA===== |         |           |          |
|-------------------|------|---------|----------|-----------|----------|---------------------|--------------------|-----------|---------|-----------|----------|
| STRATUM WEIGHT    | S.S. | AVERAGE | WGT AVG  | STD DEV   | WGT STD  | AVERAGE             | WGT AVG            | STD DEV   | WGT STD | (F)       | CORR.    |
| 0 - 20 0.359435   | 22   | 7,50    | 2.70     | 4.85      | 1.74     | 3787.23             | 1361.26            | 2806.25   | 1008.66 | 0.89      | 0.891581 |
| 20.1- 50 0.410325 | 35   | 23.33   | 9.57     | 14.44     | 5.92     | 11229.31            | 4607.67            | 6649.70   | 2728.54 | 3.96      | 0.756910 |
| 50.1-130 0.173800 | 38   | 65.88   | 11.45    | 36.48     | 6.34     | 33909.26            | 5893.43            | 21612.98  | 3756.34 | 3.16      | 0.902989 |
| 130.1-UP 0.056440 | 30   | 177.89  | 10.04    | 88.90     | 5.02     | 96760.53            | 5461.16            | 50956.46  | 2875.98 | 2.50      | 0.895428 |
|                   |      |         |          |           |          |                     |                    |           |         | ========= |          |
| TOTAL             |      |         | 33.76    |           | 19.03    |                     | 17323.524          | 857       |         | 10.50     |          |

RATIO R\_HAT = 0.00195 POP. # CUST.: 15026 POP. ENERGY : 244935609 POP. CPKW :477323 POP. KW/CUST.: 31.77

ESTIMATES FOR 90% C.I., 10% RELATIVE ACCURACY MEAN PER UNIT SAMPLE SIZE ESTIMATE = 85.94 RATIO METHOD SAMPLE SIZE ESTIMATE = 29.58

2006 Cost of Service Load Research Plan GULF POWER COMPANY Docket No. 820491-EU Page 17 of 19

# LARGE POWER RATE CLASS

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The 2003 study design provided a very accurate estimate of demand for this class. The 2006 sample design will retain the 2003 sample design which is two strata with census metering of all LP rate customers whose billing demand during January was 800 kW or higher and a random sampling of 30 customers of the remaining customers.

# LARGE POWER TOU RATE CLASS

The 2003 study design provided a very accurate estimate of demand for this class. The 2006 sample design will retain the 2003 sample design which is two strata with census metering of all LPT rate customers whose billing demand during January was 1,000 kW or higher and a random sampling of 20 customers of the remaining customers.

2006 Cost of Service Load Research Plan GULF POWER COMPANY Docket No. 820491-EU Page 18 of 19 

# RTP, CISR/CSA, SBS RATES

All customers being billed on these three rate classes have a recorder installed, thus no sample design is necessary. The number of customers on these rate classes as of May 2005 are as follows:

RTP Rate - 19 customers CISR/CSA Rate - 1 customer SBS Rate - 3 customers

2006 Cost of Service Load Research Plan GULF POWER COMPANY Docket No. 820491-EU Page 19 of 19

# Table 9 GULF POWER COMPANY 2006 Cost of Service Load Research Rule Sample Size

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| Rate     |                                  | Strata Alloc   | ation | <u>Sample</u><br><u>Size</u>          |          |
|----------|----------------------------------|--|-------|---------------------------------------|----------|
| RS       | 1)<br>2)<br>3)<br>4)<br>5)<br>6) | MF-GT900<br>MF-LE900<br>MOBILE<br>SF-925*1675<br>SF-GE1676<br>SF-LE925 | TOTAL | 20<br>21<br>33<br>53<br>49<br><br>225 |          |
| GS       | 1)<br>2)<br>3)<br>4)             | 0- 300<br>301-1075<br>1076-1875<br>1876- UP                            | TOTAL | 80<br>76<br>73<br><u>71</u><br>300    |          |
| GSD      | 1)<br>2)<br>3)<br>4)             | 0 - 20<br>20.1-50<br>50.1-130<br>130.1-UP                              | TOTAL | 31<br>32<br>52<br>45<br>160           |          |
| LP       | 1)<br>2)                         | 0 LT 800<br>800- UP  | TOTAL | 30<br>5<br>55                         | (census) |
| LPT      | 1)<br>2)                         | Less than 1000<br>1000 kW and g  |       | 20<br><u>33</u><br>53                 | (census) |
| RTP      | 1)                               | All customers  |       | 19                                    | (census) |
| CISR/CSA | 1)                               | All customers  |       | 1                                     | (census) |
| SBS      | 1)                               | All customers  |       | 3                                     | (census) |
|          |                                  |  | TOTAL | 816                                   |          |