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June 18, 2004

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:

Re: Docket No. 040032-EG

Enclosed are an original and fifteen copies of Gulf Power's response to staff's informal data request to be filed in the above referenced docket.

Sincerely,

A handwritten signature in cursive script that reads "Susan D. Ritenour".

lw

cc: Beggs and Lane  
Jeffrey A. Stone, Esquire

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Further Explanation of Measures Reviewed

In accordance with the rules of the Florida Public Service Commission (FPSC), Chapter 25-17.0021, the Commission shall establish numeric goals for each electric utility. Gulf Power Company began its evaluation process for the current goals proceeding in Docket No. 040032-EG by reviewing the cost-effectiveness analysis performed pursuant to Docket No. 971006-EG which resulted in the demand-side management goals currently in place for Gulf. This process is summarized as follows:

The previous evaluation process started with the 120 demand-side measures as listed by the commission staff in a workshop held on January 7, 1998. The screening of the measures took several steps. The initial input data such as the incremental change in the customer's summer and winter demand and annual energy savings and other major inputs such as customer incremental operation and maintenance cost and utility recurring and non-recurring costs per customer relied upon data provided in the Synergic Resources Corporation's Electricity Conservation and Energy Efficiency in Florida, Appendix E-M, DSM Technology Data Base. Where new or more current information on these inputs was available they were used. The input data along with information from Gulf's most recent planning process was used to update the cost-effectiveness model at that time.

The demand-side measures were then subjected to the cost-effectiveness test. If a measure did not pass the Rate Impact Measure (RIM), it was eliminated from further consideration. The next step was to look at those measures that passed RIM but failed the participants' test. RIM dollars were then used to offset the participants' cost or increase the participants' benefit. The RIM dollars were allocated to the participant until such time as the RIM measure went below 1.0. If at this juncture the participants' test was still less than 1.0, the measure was dropped from consideration.

The process followed then resulted in a group of measures passing both the RIM and participants' tests. For screening purposes only, all the residential measures assumed 250 initial participants plus an additional 250 per year

throughout the analysis period. In the commercial and industrial sector, the participant level started at 100 and was increased by 100 per year for the initial screening process.

Another explicit assumption in the initial screening was to assume there were no utility program costs or rebates and incentives, either one time or recurring. This was intentionally done to maximize the potential of a demand-side measure passing the RIM and participants' test. As noted above, if a measure did pass RIM but failed the participants' test, only then were utility costs allocated in the form of rebates or incentives to increase the value of the participants' test.

From this initial screening, eight measures for new and existing residential customers passed both RIM and the participants' test. The measures which passed were: RSC-2, Ground Source Heat Pump; RSC-10B, Ceiling Insulation (R0 – R19); RSC-24A, High Efficiency Room AC; RSC-26A, Direct Load Control AC; RSC-26B, Direct Load Control AC; RF-1, Best Current Refrigerator (Frost-Free); RF-2, Best Current Refrigerator (Manual Defrost); and FR-1, Best Current Freezer (Frost-Free).

At this point, the measures were again reviewed for more current or relevant market data by residential marketing at Gulf Power Company. The measures then were evaluated against current building codes as well as existing marketing programs and efforts. In addition, the effect of overlapping measures and rebound was considered. During this evaluation period, the initial assumption on program participation was modified to reflect an estimate or projection of achievable participation less free riders.

The final screening resulted in two measures being dropped and a substitute measure being added and evaluated for two other measures. The two measures dropped were the ceiling insulation and best freezer measures. The ceiling measure was dropped due to the very low market available for ceiling insulation upgrade. According to Gulf Power Company's 1994 on-site

marketing survey, less than four (4) percent of the residential existing market has less than an R-10 ceiling insulation value. Gulf Power, in the normal course of performing residential energy audits, already recommends this demand-side measure.

The best freezer measure was dropped due to the lack of higher efficiency alternatives. The choice in the freezer market was not in efficiency but in style (upright versus chest), size and/or color. Based on residential marketing's professional judgment, marketing efforts would have little or no impact on efficiency upgrades in this market.

Advanced energy management was a substitute, as well as competing measure, for direct load control. Advanced energy management was evaluated for new and existing residential customers. Advanced energy management was a direct application of Gulf Power's efforts in flexible pricing as a means of communicating to the customer a price signal based on the marginal cost of providing electric service. Advanced energy management has essentially the same load shape impact as the direct load control measure. Since the advanced energy management measure was more compatible with the Company's pricing philosophy and appears, based on customer research, to have wider customer appeal, it was substituted for direct load control of air conditioning.

The final portfolio of residential market measures utilized by Gulf in the 2000 goals docket consisted of the following: ground source heat pumps, high efficiency room air conditioners, best current refrigerators – frost free and manual defrost –, and advanced energy management.

Also from the initial screening detailed previously, a number of commercial and industrial market demand-side measures passed both the RIM and participants' test. These results included: thirteen (13) air conditioning, water heating, refrigeration and cooking measures as well as thirteen (13) lighting measures.

The measures were again reviewed for more current or relevant market data by commercial/industrial marketing at Gulf Power Company. The measures then were evaluated against current building codes as well as existing marketing programs and efforts. In addition, the effect of overlapping measures and rebound was considered. During this evaluation period, the initial assumption on program participation was modified to reflect an estimate or projection of achievable participation less free riders.

With respect to the lighting measures, many of these were overlapping in nature. For example, the lighting measures for existing buildings are competing technologies. The consumer, when deciding on replacing fixtures or bulbs, will generally choose only one option. In having to select among the competing technologies, the selection of one option automatically rules out the other options. In new construction, the Florida Energy Efficiency Code for building construction has reduced the lighting unit power density (watts per square foot) in commercial buildings to a low enough allowable level that the new construction in Northwest Florida has almost completely adopted the new T-8 electronic ballast fluorescent technology. Locally and nationally, the net result has been a steady decline in the T-8 technology cost as competition to supply the market has driven cost down. The T-8s are currently the most efficient fluorescent lighting available and the market is essentially in a free rider situation. The premium for a four lamp T-8 lighting fixture is only \$5.00 over the next most efficient lighting option. The existing market for replacement energy efficient lighting is nearly the same as the new building market. The technology of choice is the T-8 option in retrofitting and conversion. Given the high level of free ridership in the lighting market, Gulf Power did not include any measures from the lighting options.

While no single lighting technology was included in the demand-side portfolio, the interaction of lighting with heating and cooling requirements and other building features could not be ignored. Gulf Power Company

evaluated the GoodCents building measure. The GoodCents building measure incorporates energy efficient lighting with heating, cooling, and ventilation and with thermal shell features (for example: windows, shading, and building insulation). Based on experience and program offerings, Gulf Power Company has collected data on the complementary nature of these building characteristics. While individually cost effective, for evaluation purposes it was more practical to assess these measures as a unit. This approach of packaging the best set of complementary energy efficient technologies maximizes the benefit to the consumer and to the utility as well. The GoodCents building measure passed both the RIM and participants' tests.

Three other demand-side measures from the SRC study passed both the RIM and participants' test: high efficiency room air conditioners (PTAC units), heat pump water heating, and energy efficient electric fryers. These measures, along with GoodCents buildings, were included in the final portfolio of commercial and industrial demand side measures.

Interruptible service and real time pricing were also analyzed and included in the commercial and industrial measures. Real time pricing, as with advanced energy management, is part of Gulf Power Company's strategy of employing flexible pricing mechanisms to achieve gains in economic efficiency. Customers are sent daily the forecasted prices for the next 24 hours. These price signals reflect the company's marginal cost of providing electric service. Customers receiving the price signals then make choices as to when and how much of the product they will consume. Real time pricing has resulted in customers responding to price by reducing peak demand consumption and making purchases in off-peak hours.

The final portfolio of commercial and industrial demand side measures utilized by Gulf in the 2000 goals docket consisted of the following: high efficiency room air conditioners (PTAC), heat pump water heaters, energy

efficient electric fryers, commercial GoodCents buildings, real time pricing, and interruptible service.

In order to determine the proposed goal levels in the current proceeding, Docket No. 040032-EG, Gulf reviewed the 120 measures evaluated in the 2000 goals filing under Docket No. 971006-EG and determined there were no changes in technology or market conditions that warranted further analyses for inclusion in this goal setting process. As a result, Gulf further determined that the final portfolio of measures from the 2000 goals filing was an appropriate beginning point for evaluation of demand-side measures for the current goal setting process. Therefore, Gulf prepared an initial screening of the following residential measures as included in the 2000 goals filing: ground source heat pumps, high efficiency room air conditioners, best current refrigerators – frost free and manual defrost –, and GoodCents Select (formerly referred to as advanced energy management or AEM). This screening determined that all of these measures continue to be viable demand-side measures.

In addition to these measures, Gulf gave consideration to a number of natural gas measures which could substitute for electric measures. Because Gulf Power is a summer peaking utility, consideration is not given for natural gas substitutes that address heating systems only and therefore would only save on winter peak demand. The current marketplace for residential cooling and heating equipment does not provide any viable natural gas substitutes for electric cooling systems. Although some of these gas air conditioners or gas-driven heat pumps may be available, none are known to have been installed on the Gulf Power system in recent years. Water heating is the only other measure with a reasonable natural gas alternative. Gulf Power has promoted and continues to promote a gas water heating conversion program to its residential customers. This program is cost-effective and has been found to appropriately be included in the rate base. Additionally, it provides the benefit of “...increasing the overall efficiency and cost-effectiveness of electricity and natural gas production and use.” as intended by Chapter 366.81 of the Florida Statutes. Furthermore, Gulf has evaluated the natural gas substitute water heater and found that it is not a cost-effective measure. For all of these reasons, Gulf Power has eliminated residential gas substitute measures from consideration for inclusion in Gulf’s conservation goals. It has been and will continue to

be Gulf Power's policy and practice to review opportunities on a case by case basis and recommend gas applications to our customers when it is in their best interest.

Gulf followed this effort with an initial screening of the following commercial and industrial measures derived from the 2000 goals filing: high efficiency room air conditioners (PTAC), heat pump water heaters, energy efficient electric fryers, commercial GoodCents buildings, real time pricing, and interruptible service. From this initial screening, it was determined that all of these measures with the exception of interruptible service continue to be viable demand-side measures. Interruptible service is not currently considered as either a supply or demand side resource and is not included in further analysis.

In addition to these measures, Gulf gave consideration to a number of natural gas measures which could substitute for electric measures. Because Gulf Power is a summer peaking utility, consideration is not given for natural gas substitutes that address heating systems only and therefore would only save on winter peak demand. The current marketplace for commercial direct exchange cooling and heating equipment does not provide any viable natural gas substitutes for electric cooling systems. Although some of these gas air conditioners or gas-driven heat pumps may be available, none are known to have been installed on the Gulf Power system in recent years. In larger commercial and industrial applications that could utilize a gas chiller as a substitute for electric driven cooling equipment, Gulf has analyzed the gas chiller substitute and found that it is not a cost-effective alternative. Gulf recognizes that natural gas water heaters are a reasonable alternative to electric in the commercial market. However, Gulf has evaluated the natural gas substitute water heater and found that it is not a cost-effective measure. For all of these reasons, Gulf Power has eliminated commercial/industrial gas substitute measures from consideration for inclusion in Gulf's conservation goals. It has been and will continue to be Gulf Power's policy and practice to review opportunities on a case by case basis and recommend gas applications to our customers when it is in their best interest.

Gulf Power also gave consideration to high thermal efficient self service cogeneration. Gulf has several existing facilities utilizing this option. Although Gulf has no formal program, we do on a continual basis offer assistance to customers in their evaluation of



this alternative. The very nature of these facilities limits their utilization to a very small group of customers. Gulf Power intends on continuing the practice of evaluating opportunities related to high thermal efficient self service cogeneration on a case by case basis and therefore excludes this activity from the goals setting process.

After this initial screening, the measures were then subjected to cost-effectiveness evaluation utilizing Gulf's most current planning assumptions and projections of achievable participation less free riders. A combination of summer and winter demand savings (at the meter), energy savings (at the meter), utility costs, and customer costs as indicated in the following tables are also utilized in the completion of this evaluation. The RIM and participants' test results are indicated in these tables as well.

Table 1

Residential Measures	kW Summer	kW Winter	kWh Energy	Utility Cost	Customer Cost	RIM	Participant
Ground source heat pump	-1.45	-1.9	-2,012	\$1,192	\$1,970	1.08	1.70
High-efficiency room a/c	-.35	N/A	-182	\$40	\$60	3.28	2.89
Best current ref. – frost-free	-.10	-.10	-179	\$45	\$77	1.26	2.16
Best current ref. – manual	-.21	-.21	-197	\$30	\$40	2.19	4.11
GoodCents Select	-1.73	-2.20	-762	\$540	\$60	1.02	2.97

Table 2

Com./Ind. Measures	kW Summer	kW Winter	kWh Energy	Utility Cost	Customer Cost	RIM	Participant
High efficiency room A/C (PTAC)	-.55	N/A	-648	\$135	\$251	2.46	1.68
Heat pump water heater	-.23	-.23	-1,246	\$156	\$292	1.01	2.97
High efficiency electric fryer	-.48	-.48	-821	\$70	\$120	1.33	6.48
GoodCents Bldg.	-4.46	-1.27	-12,755	\$2,064	\$964	1.13	8.96
Real time pricing	-2,000	-1,000	N/A	\$133,415	\$0	1.39	2.45

\*Demand and energy assumptions are at the meter.

Upon completion of this cost-effectiveness evaluation, it was determined that all of the evaluated measures are cost-effective and should be utilized in the process of determining appropriate goal levels. The projected achievable participation levels were then multiplied by the demand and energy savings as indicated in Tables 1 and 2 to determine the proposed goals indicated in the testimony of Angela T. Carter, Exhibit No. \_\_\_\_\_ (ATC-1), Schedules 1, 2 and 3.

The Basis of Gulf's Avoided Unit Costs in the Cost Effectiveness Model

In an optimally planned system (that is, a system designed to meet an exogenously determined load at minimum cost) prices should be set equal to the marginal running cost at any given hour plus the capital cost of meeting one extra kilowatt of peak demand charged at the peak hour only. Demand side management programs are generally constructed to reduce customer demand and/or energy. The cost avoided (or saved) is therefore also equal to the marginal generation cost at the period of peak demand and marginal energy reduction.

As part of the Southern electric system, Gulf Power Company's avoided generation is identified at the time of the system peak. The most cost efficient means of supplying peak demand has been determined to be the purchase or construction of a combustion turbine. When evaluating a demand side management program for cost/benefit purposes, the savings/benefits accrue by avoiding construction of capacity or purchasing capacity and/or energy at the peak. If a demand side management program is successful at reducing demand, the Southern system avoids building peak capacity or purchasing capacity and energy in the market.

For evaluation purposes, the base year of the cost-effectiveness test was 2005. The first year of avoidable purchased or added capacity was assumed to be 2009 which is based on the next planned capacity addition for Gulf as presented in its 2004 Ten Year Site Plan, filed with the FPSC in April 2004. The capacity resource expansion plan presented in Gulf's Ten Year Site Plan reflects the installation of two 157 MW combustion turbines (CT) in 2009. If more economical purchased power options are subsequently identified, Gulf will modify its plan to reflect proposed procurement of these resources. Gulf will continue to review all available capacity resources in order to ensure that its customers' electricity needs are met in the most economical manner as possible.

Further Explanation of Lower Goals

The major reasons the proposed goals are lower than the current goals established by Order No. PSC-99-1942-FOF-EG are attributable to the GoodCents Select program, formerly referred to as Residential Advanced Energy Management or AEM and the Ground Source Heat Pump (Geothermal) program.

The GoodCents Select program is designed to provide the customer with a means of conveniently and automatically controlling and monitoring energy purchases in response to prices that vary during the day and by season in relation to the Company's cost of producing or purchasing energy.

The startup of the program was delayed because of several issues. A detailed explanation of the factors contributing to the delay in full implementation is in M. D. Neyman's testimony, Docket No. 980002-EG, January 13, 1998. As stated in Ms. Neyman's testimony in Docket No. 990002-EG, September 27, 1999, Gulf expected 6,000 customers to participate in the GoodCents Select program by December 2000. As a result of the delays, the schedule for market implementation was modified and Gulf increased the number of units to be deployed during the years 2000 to 2003 to still accomplish the basic program objective of achieving a total of 80,000 kilowatts of peak demand reduction by year end 2004. The numeric conservation goals petitioned by Gulf for approval in Docket No. 971006-EG February 1, 1999 and approved by the FPSC in Order No. PSC-99-1942-FOF-EG October 1, 1999 were based on these expectations.

As a result of the delays and participation levels, the schedule for market implementation was modified in Michael J. McCarthy's testimony on September 27, 2000 in Docket No. 000002-EG. Gulf decreased the expected number of units to be deployed during the years 2000 to 2004 and projected 2,000 units for 2000; 2,500 units in 2001; and 3,000 installations annually for the remainder of the DSM plan.

As stated in Angela T. Carter's testimony on September 26, 2003 in Docket No. 030002-EG, participation in 2003 was less than expected because installations were suspended from October 2002 through March 2003. The suspension was a result of the installation contractor's inability to meet installation demands. Gulf selected a new installation contractor and projected 3,000 installations annually beginning in 2004.

As stated in Ms. Carter's testimony on June 1, 2004 in Docket No. 040032-EG, this experience has enabled Gulf to project GoodCents Select participation levels with a greater degree of certainty in this filing. We expect to install 3,000 systems annually for the years included in this DSM plan, compared to approximately 6,000 annually projected in the current DSM plan. Additionally, demand and energy response estimates were updated to lower values as a result of market research and evaluation efforts over the last five years. More specifically, in 2003 Gulf completed an energy and revenue analysis and critical call analysis that provide the updated assumptions utilized in the current goal proceeding. These updated assumptions for the GoodCents Select program are compared to the original assumptions in the following table:

	Original Assumption	Current Assumption	% Change
Summer kW	-2.48	-1.73	-30%
Winter kW	-2.89	-2.2	-24%
Energy kWh	-2,100	-742	-65%

\*Demand and Energy assumptions are at the meter.

Participation levels in Gulf's Geothermal program have not met previous projections due primarily to the high initial cost of these systems. Gulf has therefore revised its projection of future program participation to better reflect expectations based upon the actual participation experienced over the last five to ten years. Gulf Power's expectation of future participation for the goal period 2005 – 2014 reflects a reduction of more than 80% in the cumulative Geothermal program participation that was projected for the goal period ending 2009.

The aforementioned changes result in a significant reduction in the energy and demand savings expected by these two programs and are the primary reasons for the reduction in Gulf's proposed goals.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

IN RE: Petition for approval of )  
numeric conservation goals )  
by Gulf Power Company )

Docket No. 040032-EG

Certificate of Service

I HEREBY CERTIFY that a true copy of the foregoing was furnished by hand delivery or the U. S. Mail this 18th day of June 2004 on the following:

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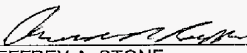
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