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October 23, 2017

BY E-PORTAL

Ms. Carlotta Stauffer
Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Re: DOCKET NO. 20170179-GU - Petition for rate increase and approval of depreciation study by Florida City Gas.

Dear Ms. Stauffer:

Attached, for electronic filing, please find the testimony and exhibits of Florida City Gas's witness Daniel J. Nikolich. (Document 5 of 14)

Sincerely,

Beth Keating
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ATTACHMENTS

cc:// PSC (20 Hard copies)

Office of Public Counsel (Kelly)

Before the Florida Public Service Commission

Docket No. 20170179-GU: Petition for rate increase by Florida City Gas.

Prepared Direct Testimony of Daniel J. Nikolich

Date of Filing: October 23, 2017

Q. Please state your name and business address.

A. My name is Daniel J. Nikolich. My business address is Southern Company Gas, Ten Peachtree Place, Atlanta, Georgia 30309.

Q. By whom are you employed and in what capacity?

A. I am currently employed as Manager, Rates, Southern Operations for Southern Company Gas, which includes the Florida operating division, Florida City Gas ("FCG" or "Company").

Q. What is the scope of your duties at Southern Company Gas?

A. I am responsible for overseeing the development of short-term and long-term demand and revenue forecasts, as well as short-term and long-term new load growth forecasts. Further, I am responsible for providing economic and statistical analysis for rate design, cost of service, and cost allocation studies. I am also responsible for economic cost-effectiveness studies, market research and planning studies, along with maintaining the supporting informational databases in the various states in which Southern Company Gas has local distribution companies.

Q. Have you provided a summary of educational background and work

experience?

A. Yes. This information is included as Exhibit No.____DJN-1.

Q. Have you previously provided testimony before the Florida Public Service Commission ("FPSC")?

A. Yes, in 2002, I provided testimony pertaining to rate design for Docket Number 20021065-GU. Subsequently, I testified with regard to the revenue forecast in the Company's last base rate proceeding in 2003, Docket Number 20030569-GU.

Q. What is the purpose of your testimony in this proceeding?

A. I will support and describe the specific methods employed in developing the forecasts of sales, services, and revenues for the Base Year + 1 ending December 31, 2017, and for the Projected Test Year ending December 31, 2018. The normalized level of sales, services, and revenues during the Projected Test Year period is the base from which the requested revenue increase has been determined. Finally, I will support and describe the Class Cost of Service study and rate design for this case.

Q. With regard to the forecasts, do you have any additional exhibits to your testimony?

A. Yes. Below is a list of my other exhibits:

- Exhibit No. ___ (DJN-2) is FCG's forecast of rates, services, and revenues for the Base Year + 1.
- Exhibit No. ____ (DJN-3) is the same information for the Projected

Test Year under the Company's existing rate classes.

- Exhibit No. ____ (DJN-4) is the same information for the Projected Test Year under the Company's proposed new rate classes.
- Exhibit No. ____ (DJN-5) are the heating degree-day patterns.
- Exhibit No. ____ (DJN-6) is a comparison of historical annual usage per customer to projected test year forecasts.
- Exhibit No. ___ (DJN-7) presents the proposed Demand Charge Quantities.
- Exhibit No. ___(DJN-8) presents an example of the non-linear nature of FCG's demand and how, for forecasting purposes, the cubic spline method addresses it.
- Exhibit No. ___ (DJN-9) presents the allocation of interim rate relief.
- Exhibit No. ___ (DJN-10) presents the average meter and service costs by class.
- Exhibit No. ___ (DJN-11) presents the derivation of revenue deficiency by class.
- Exhibit No. ___ (DJN-12) presents the bypass analysis.
- Exhibit No. ___ (DJN-13) presents the customer charge comparison.
- Exhibit No. ___ (DJN-14) presents the calculation of proposed rates.

Q. Please identify the Minimum Filing Requirement Schedules ("MFRs") that you will be sponsoring.

A. I am sponsoring Schedules E-1,2,3,4,5, F-10, pages 6 through 15F of Schedule G-2 of the MFRs, and Schedules H-1,2, and 3.

I. THE CUSTOMER COUNT, DEMAND, AND REVENUE FORECAST

Q. What is FCG's Base Year + 1 and Projected Test Year Period forecast of demand and revenues?

A. FCG's forecast of normalized sales, services, and revenues for the Base Year + 1 and the Projected Test Year periods are displayed on Exhibit No. DJN-2 and Exhibit No. DJN-3, respectively. Exhibit No. DJN-2 consists of seven months of actual data and five months of forecasted data.

Each exhibit details the number of customers billed per class for the respective periods, and displays the weather normalized consumption forecast by class and by month for each of the periods. The monthly revenues by rate class for the Base Year + 1 and the Projected Test Year periods are calculated using existing rates and are shown in Exhibit No. DJN-1 and Exhibit No. DJN-2.

The total Projected Test Year period revenues of $87,689,900, as shown in Exhibit No. DJN-3, was the base from which the additional revenue requirement being sought in this proceeding was developed.

Q. Please discuss FCG's approach to forecasting demand and revenues for the Base Year + 1 and Projected Test Year periods.

A. Sales, services, and revenues were forecast using a multi-step process for each of the customer classes we serve. Each customer class is first categorized into one of two groups—homogeneous and non-

homogeneous—based primarily on consumption behavior. The homogeneous group includes customer classes that are large in terms of number of customers, but whose consumption, on an individual basis, is small, and who tend to react similarly to causal variables, such as weather. The residential and commercial classes are in this category. The non-homogeneous group is comprised of those customer classes that are small, in terms of number of customers, but whose consumption is relatively large, and who tend to react differently to causal variables. The large customer/industrial classes are in this category.

The next stage of the process includes four steps. First, consumption equations are developed that model consumption per customer for each of the homogeneous customer classes. The consumption for the large industrial classes or other unique classes that are not homogeneous in nature is forecast in a different manner, based upon analyzing teach customer in these classes individual load. Second, the number of customers billed for each class is developed. Third, a consumption forecast for each class is calculated by applying the results of the consumption equations to the number of customers billed in the class. In some classes, as I describe later in my testimony, this step is somewhat modified. Fourth, a revenue forecast is generated by applying the class consumptions, along with other billing determinants, including customer service charges, to the existing rate structure.

Q. Is this the manner in which FCG has traditionally developed its forecasts?

A. Yes. The basic forecasting methods described in my testimony were employed by the Company for the first time in its 1996 base rate proceeding. These methods were employed again for the 2000 base rate proceeding, and the 2003 base rate proceeding. However, on an ongoing basis, our methods are reviewed through activities such as variance analyses, and adjusted when required. This is an evolutionary process with the goal of continually improving forecast performance. New techniques and causal factors are continually evaluated and are incorporated into the forecast models when they demonstrate improvement in forecast accuracy.

Q. How were the consumption equations developed for the Company‘s various customer classes?

A. Consumption equations were developed for the residential General Service customers (GS-1 through GS-6K) and commercial General Service customers (GS-1 through GS-60K) on a rate class group basis. Consumption for General Service 120K (GS-120K), Natural Gas Vehicles Sales Service (NGVSS), General Service 250K (GS-250K), General Service 1,250K (GS-1250K), Load Enhancement Service (“LES”), and Contract Demand Service (“KDS”) were forecast on an individual customer basis.

The various FCG service territories, located in Miami-Dade/Broward, Brevard, St. Lucie/Martin, and Indian River counties, are geographically and climatologically distinct. For this reason, it was necessary to develop consumption equations on both a rate class and geographic area basis. Where applicable and statistically valid, causal, least-squares regression

models employing non-parametric, cubic spline techniques were developed. As shown in Exhibit No. DJN-8, due to the warm climate, unlike more northern gas utilities, much of FCG's customer demand occurs on days when the average daily temperature is greater the 55ºF. As is shown in the exhibit, demand at these temperatures does not follow a simple linear pattern as it does for temperatures below 55ºF. The Company has found that use of a cubic spline methodology provides a better, more accurate forecast that covers the wider, warmer range of daily temperatures found in South Florida. The consumption equation for Brevard-area commercial customers was developed using multiple regression with heating degree-days, which I explain later in my testimony, and the number of weekends per month as regressor terms. Similarly, the consumption equations for the Miami-Dade/Broward-area residential and commercial classes and the Brevard-area residential class were developed using the multiple regression approach with heating degree-days and a cubic spline term as the principal drivers. One of the changes since the last base rate proceeding has been that sufficient empirical data has become available for the St. Lucie/Martin and Indian River areas, so distinct consumption equations were separately developed for these areas. For the commercial classes, the models employed up to eight years of historical consumption and temperature data over the period October 2008 through March 2017. For the residential classes, the models employed up to 19 years of historical consumption and temperature data over the period April 1998 through March 2017.

From these models, I derived the consumption equations that are used to

develop monthly average usage per customer for each class, residential service and commercial service. The consumption equations, in their most basic form, can be broken down into a base use component (non-temperature sensitive) and a heat use component (temperature sensitive). Review of the output statistics, use of holdout periods (i.e., segmenting the dataset into two periods, and using one subset to develop a model and the other to evaluate equation performance), and validation through "backcasting" (i.e., comparing actual historical results to the fitted values generated by the statistical model) demonstrated the accuracy of the regression models selected.

Q. Were changes made to the forecast models?

A. First, the Port St. Lucie division is now being forecast with its own consumption forecast models and equations. This has happened because the division has grown to and been at a large enough size long enough now that sufficient reliable data upon which to base a forecast is available. Also, as stated earlier, new techniques and causal factors are continually evaluated as changes in customer behavior and market conditions occur over time in an attempt to maintain and improve forecast accuracy. A series of regression models employing price, weather, and other various causal variables were developed and tested. Analysis of the output statistics and evaluations of the backcasts and scatter plots showed that multiple regression models using price as well as heating degree-days, with a base temperature of 80ºF, outperformed the residential models previously used. In the last base rate proceeding forecast, the Company changed the base

temperature for forecasting demand from 65ºF to either 72º or 80ºF where found statistically appropriate. Changing the base temperature at which heating degree days are calculated has the effect of shifting load from the base use (y-intercept, non-temperature sensitive) component to the heat use (slope, temperature sensitive) component. Using the more typical 65ºF base temperature to calculate heating degree days results in only three to four months with heating degree day values; the remaining months generate zero heating degree day values. This limits the multiple regression equations' ability to explain and forecast monthly variations in usage. Adopting either a 72ºF or 80ºF base temperature to calculate heating degree-days, results in heating degree-day values for each month of the year. This change helps explain and predict the monthly variation in customer usage observed in the dataset. Using the 80ºF base temperature improved forecast equation performance over the more typical 65ºF base temperature.

As in the forecast for the 2000 and 2003 base rate proceedings, where appropriate, cubic spline terms were introduced into the multiple regression models FCG is using here. The data analysis not only identified heating degree-days as a reasonable causal variable to use in a multiple regression model, but also indicated that residential customer heat sensitivity is not linear, and that it changed at 55ºF for Miami residential customers and Brevard County residential customers. At these temperature points, residential consumption increased as customers become more sensitive to colder weather. Introducing the cubic spline term into the residential models

has improved forecast performance.

Q. For the Base Year + 1 and the Projected Test Year period, how was the number of customers billed in each class developed?

A. The number of customers billed by class for the Base Year + 1 was developed as follows:

- The actual number of customers by class that were billed as of July 31, 2017, was determined and used as the base starting point upon which new customer growth was added.
- A monthly forecast of new customers (or reduction in customers) by class was developed in coordination with the Marketing and Engineering Departments.
- A seasonal pattern of changes in the number of inactive customers and customers locked for non-payment was developed from historical customer count data.
- The aggregate number of customers by class by month was developed by adding the monthly growth projections and seasonal changes in customer patterns to the July 2017 starting point.

The number of customers by class for the Projected Test Year period was developed in the same manner as described above, except that the base starting point for this period is the number of customers ending December 31, 2017, as forecast in the Base Year + 1 period. Exhibit DJN-1 and Exhibit DJN-2 present the monthly number of customers by class used to develop the normalized consumption and revenues.

Q. How was consumption developed for the homogeneous customer classes?

A. Consumption for those classes for which we employed consumption equations was developed by multiplying the projected number of customers billed in the class for each month by the usage per customer for the month. The usage per customer was developed by applying the consumption equation for the month with an input of normal heating degree-days for that month, and multiplying by the number of average meter read days in the month.

Q. How was consumption developed for the remaining classes?

A. For classes that were forecast by individual customer (GS-120K, GS-250K, GS-1250K, LES, KDS, NGVSS), monthly consumption represents the aggregate of the individual customer forecasts. The forecast by individual customer was prepared by reviewing historical monthly consumption data and customer surveys with the Marketing Department, and correcting for future changes in demand resulting from customer expansions and contractions and one-time, extraordinary events such as re-tooling, strikes and storms. For the Gas Lighting ("GL") class, consumption was developed by reviewing historical monthly demand.

Q. What heating degree-day patterns were applied to the consumption equations?

A. To develop a normalized consumption forecast for those classes where consumption equations were employed, it was necessary to develop normal heating degree-day patterns for each month of the year. Heating degree-

days are the difference between a base temperature and the average temperature for a day when that daily average is below the base temperature. Heating degree-days are simply a measure of weather changes that influence gas consumption. As stated earlier, the base temperature that was found to have highest correlation with actual demand, and was therefore incorporated into the multiple regression models, was either 72ºF or 80ºF.

The heating degree-day patterns that were employed are presented in Exhibit No. DJN-5. This information is based on ten years of daily weather data (July 1, 2007, through June 30, 2017) as measured by the National Ocean Airport, and Vero Beach and Melbourne Airports. The length of time used is also consistent with what was used in the Company's last base rate proceeding. This weather distribution is then adjusted for the Company's meter reading schedule. Additionally, a sufficient amount of data is now available for a weather station to be used for the Brevard division service territory. Therefore, the Company is moving from using the Daytona Beach weather station and data, which is north of the relevant territory, to using information from the Melbourne weather station, which is actually in the service territory. The Company is also now employing weather data from the Vero Beach weather station that is in the Company's Port St. Lucie territory, and thus, more representative of weather occurring in said territory.

Q. How were revenues for the Base Year + 1 and the Projected Test Year periods developed?

A. The revenues shown in Exhibit No. DJN-2 and Exhibit No. DJN-3 were developed by applying the forecast, normalized consumption and number of customers billed by class for the Base Year + 1 and the Projected Test Year periods to a model of the existing rate structure of the Company's tariff.

Q. Could you please discuss the process the Company employed to reclassify customers for the forecast into the new service classifications being proposed by the Company?

A. Since the volumetric break points were maintained, reclassification was accomplished by combining the appropriate rate classes. For residential customers, GS-1 became the new RS-1. GS-100 and GS-220 were combined into a RS-100. Rate classes GS-600 and above were combined into the new RS-600. For commercial customers, GS-1, GS-100, GS-220, GS-600, and GS-1.2K were combined into the new GS-1200. Customers in GS-6K remained GS-6K, while customers in GS-25K and GS-60K were combined to form the new GS-25K class. Large customers in the GS-120K and GS-250K classes were combined to form the new GS-120K, while customers in the GS-1250K remained GS-1250K.

Q. For the Projected Test Year period, how was the number of customers billed in each of the proposed rate classes developed?

A. The number of customers billed by proposed rate class for the projected year was developed as follows:

- As described above, customers that were billed as of July 31, 2017, were assigned to the appropriate volumetric rate class. From this data, the

number of customers in each of the proposed classes was determined and used as the base starting point upon which new customer growth was added.

- A monthly forecast of new customers (or reduction in customers) by class was developed in coordination with the Marketing and Engineering Departments.
- A seasonal pattern of changes in the number of inactive customers and customers locked for non-payment was developed from historical customer count data.
- The aggregate number of customers by class by month was developed by adding the monthly growth projections and seasonal changes in customer patterns to the July 2017 starting point.

The number of customers by class for the Projected Test Year period was developed in the same manner as described above, except that the base starting point for this period is the number of customers ending December 31, 2017, as forecast in the Base Year + 1 period.

Exhibit DJN-3 presents the monthly number of customers by class used to develop the normalized consumption and revenues.

Q. How was the consumption developed for the proposed customer classes?

A. Since the rate classes being proposed are to be formed by combining the existing rate classes, consumption was also aggregated in the same manner as the customer counts.

Q. Is there any impact on the billing determinant forecast resulting from the reclassification?

A. No. There is no change in the number of customers, volumes, or revenues under current rates. Exhibit DJN-4 presents the new forecast of customers, volumes, and revenues under current rates resulting from the reclassification. Exhibit DJN-3 presents the new forecast of customers and volumes and revenues under current rates. As a comparison of the two exhibits shows, there is no change in either the aggregate number of customers or volumes as a result of the reclassification.

Q. How was the number of demand charge quantity billing units determined for each class?

A. Exhibit DJN-7 presents the proposed demand charge quantities. The demand charge quantity ("DCQ") for each customer was determined by reviewing individual customer billing data for the past three years, and calculated in the manner described in the Company's proposed tariff. For customers for whom the Company has only cycle billing data, the DCQ was calculated by taking each customer's peak monthly consumption and dividing it by the number of billing days in the peak month. For customers who are metered by an automatic meter-reading device that provides daily consumption data, each customer's DCQ is set to equal its peak daily consumption during the past three years.

Q. Does this conclude the portion of your testimony addressing the Company's forecast?

A. Yes, it does.

II. THE CLASS COST OF SERVICE STUDY

Q. Was a particular methodology or model used to conduct the cost of service study?

A. The standard methodology traditionally used by the FPSC staff formed the base of the cost of service study. The Company's study also follows the presentation format contained in the H Schedules of the prescribed MFR forms.

Q. Were other factors used to establish the proposed rates?

A. Yes. As described in more detail later in my testimony, several adjustments were made to the initial cost allocations produced by the standard model. The adjustments were made to appropriately recognize that the model allocates a disproportionate share of capacity costs to the large-volume customer classes. Application of the cost study results without adjustment would result in uneconomical rates to certain large-use customers. These adjustments are based on market considerations, such as certain customers' ability to effectively bypass FCG's distribution system for a cost significantly lower than it otherwise would be based upon allocations within the cost study. Each of the market-based rate adjustments was accomplished through a reallocation of cost in the Direct and Special Cost section of the FPSC staff's cost model, MFR Schedule H-2. These specific adjustments are described in detail below. This modified study is the basis for the rate design proposed in this proceeding.

Q. Please describe the objectives in performing a cost of service study.

A. There are two primary objectives in cost of service analysis. The first objective is the development of “unbundled” cost information by function (production, storage, transmission, and distribution) and classification (customer, commodity, demand, and revenue) in order that cost-based rates may be designed for each customer service classification. The second objective is the determination of the rate of return for each of the FCG customer service classifications based on present rates. Such information will provide guidance in equitably allocating the Company’s proposed revenue increase.

Q. How is a cost of service study performed?

A. Traditional cost studies can be segmented into three individual activities: functionalization, classification and allocation.

Functionalization refers to the process of relating plant investments and associated operating expenses to four basic functional categories: production, storage, transmission, and distribution. Plant investments and expenses are assigned to the functional categories. The functional assignment of costs is a relatively straightforward process. The Company translates its accounting records to the Federal Energy Regulatory Commission (“FERC”) Uniform System of Accounts. Then, based on FERC accounting codes, plant facilities and investments are assigned to cost of service functional categories. Related expenses follow the same functionalization process. MFR Schedule H-3, pages 2 and 3 present the

functionalized overall cost of service, and pages 4 and 5 present the functionalized rate base. For FCG, all costs fall into the distribution function category.

Classification refers to the process of dividing the functional costs into categories based on cost causation. A local distribution system is designed and operated based on the individual and collective service needs of its customers. The cost to provide such service can be categorized in such a manner as to assign costs to follow the manner in which they are incurred. There are four common categories used to group costs: capacity or demand costs, commodity costs, customer costs, and revenue costs.

1. Capacity or demand costs are those incurred by the utility as part of its obligation to serve, and are incurred in order to meet the on-demand service requirements of the total customer base. Capacity costs are directly related to being able to meet the peak design or maximum demand requirements placed on the local distribution system by its customers. Capacity costs are incurred to ensure that the system is ready to serve customers at peak design requirements levels. Due to the nature of gas distribution assets being, in many cases, pipe buried in the ground, such as mains or services, or installed only once at customer facilities, such as meters, these costs are generally considered to be buried or “fixed,” and are incurred whether or not a customer uses any gas.
2. Commodity costs correspond directly to the quantity of product

consumed. Therefore, costs which can be associated directly to the volume of gas sold or transported fit into this category.

3. Customer costs are incurred to connect a customer to the distribution system, to meter their usage, and to maintain their account. In addition, other costs, such as meter reading, which are a function of the number of customers served, are included in this category. Thus, customer costs continue to be incurred without regard to a customer's level of consumption.

4. Revenue costs relate to cost items which are incurred based on the percentage of total revenue received from each class of customers. These costs vary with the amount of distribution revenues collected by the Company. Gross receipts taxes and regulatory assessment fees fall into this category.

I have used the cost classification methodology contained in the MFR model used in both the 2000 and 2003 rate cases. The "classifiers" identified in the model were not altered. The classification of each functionalized cost component is contained in MFR schedule H-3, pages 2 - 5.

Allocation is the final step and involves the distribution or assignment of the classified costs to the Company's customer classes. Those costs, which can be directly attributable to a specific customer or customer class, are directly assigned to that customer or class. The remaining costs are assigned by applying a series of allocation factors. The allocation factors

attempt to distribute costs based on the causal relationships between the respective customer classes and the classified costs. The development and application of the allocation factors and direct assignment of costs is the final step in a cost of service study. MFR Schedule H-2, page 5, details the development of allocation factors by customer class.

III. RATE DESIGN

Q. What is the revenue increase the Company is requesting from interim rates?

A. As described in the testimony presented by Mr. Morley, the Company requests that annual revenues be increased by $4,893,061 on an interim basis.

Q. Please describe the method used to allocate the Company's proposed interim rate relief.

A. The Company followed the methodology provided in MFR Schedule F-10 for calculating and allocating appropriate interim rates.

Q. How was the interim rate increase allocated among the customer classes?

A. The revenue deficiency calculated on MFR Schedule F-7 was allocated on an equal percentage basis to each of the Company's existing customer classifications, with the exception of the KDS negotiated rate class. The energy or transportation charge for each respective class has been adjusted to achieve the proposed interim increase. Exhibit No. DJN-9 presents the allocation of the Company's requested interim rate relief.

Q. You indicated that costs were allocated by customer class. Please describe how customer classes are established.

A. Customer classes are established based upon various characteristics, including, but not limited to, type of end user, type of end use consumption, load, and delivery circumstances, and cost causation. Types of end users can be groupings such as residential, commercial, or industrial. Consumption characteristics can be used to group customers by type of end use application, e.g., cooking, water heating, space heating, or process loads. Load characteristics can cover the rate of gas consumption by customers, such as annual, seasonal or peak volumes; load factor; or whether gas is used and needed by the customer on an interruptible or firm basis of service. Cost causation refers to customers grouped based upon the Company incurring similar costs to serve, such as using meters of a similar size and cost, service lines of a similar size, etc. The objective of grouping customers into rate classes is to establish relatively homogenous categories that incur cost to serve in similar manners and can therefore be priced fairly without one group of customers subsidizing another.

Q. Is the Company proposing changes to its existing customer classifications?

A. Yes. The Company is proposing to consolidate its existing rate classes as follows:

New Rate Classes

Old Rate Classes	Residential	Commercial/Industrial
GS-1	RS-1	GS-1
GS-100 GS-220	RS-100	
GS-600 GS-1.2K	RS- 600	
GS-6K		GS-6K
GS-25K GS-60K		GS-25K
GS-120K GS-250K		GS-120K
GS-1250K		GS-1250K

- Customers in the current General Service 1 (GS-1) class, if residential, would move to the new Residential Service (RS-1) class, and if commercial, would remain in the GS-1 class.
- Customers in the current General Service 100 (GS-100) class, if residential, would move to the new Residential Service (RS-100) class, and if commercial, would move to the GS-1 class.
- Customers in the current General Service 220 (GS-200) class, if residential, would move to the new Residential Service (RS-100) class, and if commercial, would move to the GS-1 class.
- Customers in the current General Service 600 (GS-600) class, if residential, would move to the new Residential Service (RS-600)

class, and if commercial, would move to the GS-1 class.

- Customers in the current General Service 1200 (GS-1.2K) class, if residential, would move to the new Residential Service (RS-600) class, and if commercial, would move to the GS-1 class.
- Customers in the current General Service 6000 (GS-6K) class that only contains commercial/industrial customers would stay in the GS-6K class.
- Customers in the current General Service 25000 (GS-25K) class that only contains commercial/industrial customers would stay in the GS-25K class.
- Customers in the current General Service 60000 (GS-60K) class that only contains commercial/industrial customers would be consolidated with the GS-25K class.
- Customers in the current General Service 120000 (GS-120K) class that only contains commercial/industrial customers would be stay in the GS-120K class.
- Customers in the current General Service 250000 (GS-250K) class that only contains commercial/industrial customers would be consolidated with the GS-120K class.
- Customers in the current General Service 1250000 (GS-1250K) class that only contains commercial/industrial customers would be stay in the GS-1250K class.

Q. Why is the Company proposing changes to its existing customer classifications?

A. The Company is proposing these changes to simplify its rate structure by, first, re-establishing the distinction between residential and commercial/ industrial customers. And second, to reduce the number of rate classes into larger volumetric buckets based upon the size and types of meters needed to serve each grouping. These changes should serve to reduce cross-subsidization between customers, allow rates to more closely follow cost causation, and present customers with a simpler and more easily understood rate categories.

Q. Why is the Company re-establishing the distinction between residential and commercial/ industrial customers?

A. In the 2003 base rate case, the Company changed it is rate classes from traditional residential, commercial and industrial groupings to one based only upon annual volumes. As part of the settlement, the Company agreed to continue to track sub-categories of customers by residential and commercial/industrial designations within each volumetric rate class. Over the almost 14 years these rate classifications have been in effect, FCG has found that the average size of meters and services and the associated cost varies significantly between residential and commercials customers. These differences seem to arise from the variations in end use applications between residential and commercial users. The proposed separate residential and commercial rate classes will thus provide fairer rates that more closely track cost causation. Further, the Company has not been able to achieve cost savings by combining residential and commercial customers of similar volume due to the fact that they must be

tracked separately to meet the taxation requirements of state and local governments.

Q. What is the benefit of reducing the number of rate classes into larger volumetric buckets based upon the size and types of meters needed to serve each grouping?

A. Because of changes in gas consumption, a significant number of FCG customers have moved from one volumetric rate class to another. This past year alone approximate 20 percent of the customer base moved between volumetric rate classes. By moving to the proposed new rate classes with wider volumetric bands, customer movement between rate classes should decrease, thereby giving more rate stability to the customers.

Q. Are there any other benefits to the new rate structures?

A. Yes. The new rates continue to maintain volumetric based rates while simplifying the rate structure by eliminating a number of rate classes that can be overly complex and confusing for our customers.

Q. How did the Company determine that there was a difference in the meter and service costs between residential and commercial/industrial customers?

A. FCG conducted a study looking at all of the customers' meters and what would be their current costs if installed today. The results of that study are presented in Exhibit No. DJN-10. As can be seen, there is a clear

difference between the costs of similar volume residential and commercial accounts. Based upon the similar costs the residential GS-1 and GS-220 were grouped together. Likewise, the residential GS-600 and GS-1200K exhibit similar costs. The commercial GS-1 through GS-1200K all have the same costs, and thus, make a natural grouping.

Q. Why is the Company proposing to combine GS-25K with GS-60K, and the GS-60K and GS-120K with GS-250K, in spite of cost differences?

A. Despite the differences in costs, these classes are closer to each other than to other classes in terms of costs to serve. Also, combining these classes would reduce annual customer movement between each class by 22 percent for the GS-25K and GS-60K, and reduce customer movement 31 percent between the GS-120K and GS-250K classes.

Q. Please describe the process used to design the proposed permanent rates.

A. I performed a fully embedded cost-of-service study to determine the appropriate assignment of expense and investment costs to each of the Company's classes of service. The cost study utilized information from all areas of the Company's operations, including customer billing and consumption records, engineering studies, forecasts of growth, and cost data from the accounting records. The total cost of service was assigned or allocated to determine the revenue requirements of each class of customers. The results of my analysis provided the principal basis for the Company's proposed rate design, which is detailed on MFR schedule H-1,

and is summarized in Exhibit No. DJN-11.

Q. How is the Company proposing to address customers with alternate fuel and other discounts in its tariff?

A. For the purpose of designing rates, all customers in the Load Enhancement Service ("LES"), and other tariffs with discounts recoverable through the Competitive Rate Adjustment ("CRA") rider, were aggregated with the rate class they were discounted from.

Q. Is the Company proposing new customer classifications?

A. Yes. The Company is proposing to establish two new high-volume rate classes: GS-11M for customers with annual consumption between 11,000,000 and 25,000,000 therms, and GS-25M for customers with consumption greater than 25,000,000 therms.

Q. Why is the Company proposing these two new rate classifications?

A. FCG has been approached several times over the past several years by potential customers interested in obtaining service from FCG that would be considered of sufficient size to fall under these proposed tariffs. Currently, the pricing and design of the GS-1250K rate has not proven adequate or competitive enough for these prospective customers. Thus, the only way the Company could put together proposals that might attract these customers is through special contracts that would fall under the KDS tariff. Therefore, the Company proposes to establish these two new tariffs through which it can provide competitive pricing under a standard tariff

without the need for a special contract. Further, because these rates would not be bound by a special contract, the rates would be subject to normal review and adjustment as any other rate class in a base rate proceeding by the FPSC.

Q. Without customers currently in these classes, how were rates designed?

A. These rates were designed based upon the cost estimates from various proposals that the Company has reviewed over the last several years.

Q. Does the Company's customer, sales, and revenue forecast account for the proposed revisions to its existing customer classifications?

A. Yes. The forecasts of customers, sales and revenues I sponsored and presented in the MFRs filed in this rate proceeding are consistent with the Company's proposed customer classifications and their respective rate schedules.

Q. Has the Company provided information that will allow the FPSC to compare existing classifications to the proposed classifications?

A. Yes. MFR Schedules E-1 and E-5 have been prepared to enable the FPSC to compare bills, therms and revenues under the existing classes to the proposed classes. The proposed classifications do not distinguish between customer types (residential, commercial, interruptible, firm, etc.). However, MFR Schedules E-1 and E-5 display the billing determinants both by proposed classification, and by existing customer type.

Q. Has the Company directly allocated investment and operations and maintenance ("O&M") expense related to specific customer classes or individual customers in its cost of service study?

A. Yes. The Company has removed net plant and O&M costs attributable to customers served under the Third Party Supplier ("TPS") rate schedule and the industrial customers currently served under the existing KDS rate schedule from the costs allocated to other customer classes. The Company conducted a separate cost analysis for both TPS and KDS customers. Costs identified in the respective analyses were directly assigned to the TPS class and KDS customers.

Q. Please describe the direct assignment of costs to the KDS customer class.

A. Costs to the KDS class were assigned based upon those presented in the settlement and contract approved by the FPSC this past summer.

Q. Please describe how you allocated capacity costs in the cost of service study.

A. Capacity costs were allocated based upon the standard Peak and average method employed and approved in previous base rate cases.

Q. What methodology did you use to modify the peak and average capacity cost allocator used in the FPSC Staff's model for Large Volume customers?

A. I utilized the identical allocation method used in the Company's most recent rate case. The Company's Utility Operations Department updated

their calculated cost of physical bypass for the customers in classes GS-250K and GS-1250K. This bypass analysis is included as Exhibit No. DJN-12 to my testimony. I adjusted the mains cost allocated to both classes to an amount equal to the customers' incremental cost to bypass. Without this adjustment the rates resulting from the larger cost allocation provide a potential incentive for customers to leave the system.

Q. How were commodity costs allocated?

A. Commodity related costs were allocated on the basis of annual sales volumes.

Q. Please describe how you allocated customer costs.

A. Customer costs were allocated based on the relative number of customers served in each customer class. The "weighted number of customers" allocator was used to distribute costs based on the recognition that larger customers exhibit higher customer costs. Meters, regulators, and service lines are generally more expensive for larger customers. The weightings used were derived from the relative investment in meters, regulators and service lines required to serve representative customers in each class. The weightings can be found on MFR Schedule E-7.

Q. How were revenue costs allocated?

A. Revenue costs were allocated on the basis of gross revenues by customer class.

Q. It would appear that a cost of service study is primarily a mechanical accounting of costs. Are there opportunities to apply judgment and consider market conditions or other mitigating factors in the study?

A. Yes. Cost studies are not simply formula-based accountings of costs by rate classification. They require judgment by an experienced analyst to appropriately allocate and assign costs. An understanding of the utility's business strategy, market area, and competitive position is necessary to complete an appropriate rate design. Within the cost of service study, the selection and application of allocation factors requires not only a mechanical understanding of the Company's costs, but also a common sense understanding of a variety of economic, social, regulatory, and competitive considerations.

Q. Should a cost of service study be exclusively relied upon to establish utility rates?

A. No. The study provides a guide for a starting point for the discussion on what rates should be. Other factors, including, but not limited to, fairness, incrementalism, and gradualism need to be considered.

Q. Please discuss the Company's proposal to set demand charge quantities only once per year instead of twice per year, as it does currently.

A. In the 2003 rate case order, rates were set with seasonal recalculation to reflect how FCG is billed for interstate pipeline capacity. This is an approach that is based on a fundamentally flawed assumption. The assumption is that demand charges are used to recover interstate pipeline

costs. The fact is that interstate pipeline costs are a part of the Company's purchased gas cost and recovered through its Purchased Gas Adjustment rider. The demand charges are used to recover a portion of the fixed costs of mains on the Company's system. These costs are simply not seasonal in nature, and as the mains in the ground do not vary depending on the season, these costs do not vary. Thus, this cost should be appropriately structured to match the cost causation, which is the annual design day demand as reflected by the customer's DCQ.

Q. Are you proposing any change to the Company's customer charges?

A. Yes. The Company is proposing these changes based upon the results of the class cost of service study, and a review of the customer charges of comparable Florida gas utilities shown in Exhibit No. DJN-13.

Q. Why is the level of the customer charge important?

A. The customer charges provide a means to recovering costs that are independent of gas use. Billing, metering, return on fixed capital costs, such as for meters and services, are all examples of these kinds of costs. These are all costs the Company must incur in order to be ready to serve a customer. In the interest of fairness and the principle of following cost causation, these charges should be set in line with the customer costs from the class cost of service study. Also, in the interest of fairness, the customer charges must be considered with respect to what the FPSC has approved for similar customers of other gas utilities under the FPSC's jurisdiction. As can be seen from Exhibit No. DJN-13, the customer

charges proposed for this case are be similar to those approved for the other gas utilities.

Q. Did you consider the Company's rate of return for your new customers at present rates in your analysis?

A. Yes. The rates were designed with fairness in mind to prevent as much cross class subsidization as possible. This was done to by setting rates to result in relatively equal rates of return for all classes except GS-120K and KDS.

Q. Why was GS-120K not brought to parity?

A. Demand and consumption in this class has grown over the years for this class, and a revenue increase of 100 percent would be required to bring this class' rate of return into parity with the other classes. This increase would be almost four times the system average. Therefore, in the interest of providing a more gradual increase to reduce rate shock, the Company is proposing to move this closer to parity by going from -0.8 percent to 4.0 percent. This increase still results in an increase for the GS-120K class that is approximately three times the average increase for the system being requested.

Q. Is the Company proposing changes to its other operating revenue charges?

A. Yes. The Company is proposing to adjust some of its customer charges and to add certain new charges to ensure that costs generated by individual customer requests are recovered from that customer, instead of

being spread over the general body of customers. The calculation of these charges is set forth in MFR Schedule E-3, which is sponsored by witness Igwilo. The resulting revenue increases are included in the class cost of service study. The proposed charge changes are as follows:

Proposed Charges	Current Charge	Proposed Charge Reg Hour	Proposed Charge After Hour	Change
Initial Connection - Residential Customer	$50.00	$80	$100	$30
Initial Connection - Commercial Customer	$110.00	$150	$200	$40
Residential Reconnect after Disconnect for Cause (Basic)	$37.00	$40	$50	$3
Commercial Reconnect after Disconnect for Cause (Basic)	$80.00	$80	$100	$0
Bill Collect in Lieu of Disconnection - Disconnection	$20.00	$25	$32	$5
Bill Collect in Lieu of Disconnection - Bill Collection	$20.00	$25	$29	$5
Meter Read Only	$0.00	$15	$22	$15
Temporary Disconnection of Service - Customer Request	$0.00	$35	$45	$35
Failed Trip Charge	$0.00	$20	$20	$20

Q. Please compare the proposed rates to the present rates.

A. A comparison of present and proposed base rates and customer charges by customer class is presented in MFR Schedule H-1, and is summarized on Composite Exhibit No. DJN-14.

Q. How much revenue will the proposed rates produce?

A. The rates and charges are designed to produce additional revenues of $14,994,503, as indicated on MFR Schedule H-1. Target revenues under the proposed rates total $69,405,425.

Q. Please summarize the conclusions you have reached based on your cost analysis and rate design.

A. The proposed rates will provide revenues to meet the Company's revenue requirement in this case. The rates are designed with an eye towards fairness by moving the rate classes substantially towards parity to eliminate cross subsidization. Further, the proposal also takes into account that this needs to be accomplished at times in a gradual and incremental manner.

Q. Does this conclude your direct testimony?

A. Yes, it does.

experience?

A. Yes. This information is included as Exhibit No.____DJN-1.

Q. Have you previously provided testimony before the Florida Public Service Commission ("FPSC")?

A. Yes, in 2002, I provided testimony pertaining to rate design for Docket Number 20021065-GU. Subsequently, I testified with regard to the revenue forecast in the Company's last base rate proceeding in 2003, Docket Number 20030569-GU.

Q. What is the purpose of your testimony in this proceeding?

A. I will support and describe the specific methods employed in developing the forecasts of sales, services, and revenues for the Base Year + 1 ending December 31, 2017, and for the Projected Test Year ending December 31, 2018. The normalized level of sales, services, and revenues during the Projected Test Year period is the base from which the requested revenue increase has been determined. Finally, I will support and describe the Class Cost of Service study and rate design for this case.

Q. With regard to the forecasts, do you have any additional exhibits to your testimony?

A. Yes. Below is a list of my other exhibits:

- Exhibit No. ___ (DJN-2) is FCG's forecast of rates, services, and revenues for the Base Year + 1.
- Exhibit No. ____ (DJN-3) is the same information for the Projected

Test Year under the Company's existing rate classes.

- Exhibit No. ____ (DJN-4) is the same information for the Projected Test Year under the Company's proposed new rate classes.
- Exhibit No. ____ (DJN-5) are the heating degree-day patterns.
- Exhibit No. ____ (DJN-6) is a comparison of historical annual usage per customer to projected test year forecasts.
- Exhibit No. ___ (DJN-7) presents the proposed Demand Charge Quantities.
- Exhibit No. ___(DJN-8) presents an example of the non-linear nature of FCG's demand and how, for forecasting purposes, the cubic spline method addresses it.
- Exhibit No. ___ (DJN-9) presents the allocation of interim rate relief.
- Exhibit No. ___ (DJN-10) presents the average meter and service costs by class.
- Exhibit No. ___ (DJN-11) presents the derivation of revenue deficiency by class.
- Exhibit No. ___ (DJN-12) presents the bypass analysis.
- Exhibit No. ___ (DJN-13) presents the customer charge comparison.
- Exhibit No. ___ (DJN-14) presents the calculation of proposed rates.

Q. Please identify the Minimum Filing Requirement Schedules ("MFRs") that you will be sponsoring.

A. I am sponsoring Schedules E-1,2,3,4,5, F-10, pages 6 through 15F of Schedule G-2 of the MFRs, and Schedules H-1,2, and 3.

I. THE CUSTOMER COUNT, DEMAND, AND REVENUE FORECAST

Q. What is FCG's Base Year + 1 and Projected Test Year Period forecast of demand and revenues?

A. FCG's forecast of normalized sales, services, and revenues for the Base Year + 1 and the Projected Test Year periods are displayed on Exhibit No. DJN-2 and Exhibit No. DJN-3, respectively. Exhibit No. DJN-2 consists of seven months of actual data and five months of forecasted data.

Each exhibit details the number of customers billed per class for the respective periods, and displays the weather normalized consumption forecast by class and by month for each of the periods. The monthly revenues by rate class for the Base Year + 1 and the Projected Test Year periods are calculated using existing rates and are shown in Exhibit No. DJN-1 and Exhibit No. DJN-2.

The total Projected Test Year period revenues of $87,689,900, as shown in Exhibit No. DJN-3, was the base from which the additional revenue requirement being sought in this proceeding was developed.

Q. Please discuss FCG's approach to forecasting demand and revenues for the Base Year + 1 and Projected Test Year periods.

A. Sales, services, and revenues were forecast using a multi-step process for each of the customer classes we serve. Each customer class is first categorized into one of two groups—homogeneous and non-

homogeneous—based primarily on consumption behavior. The homogeneous group includes customer classes that are large in terms of number of customers, but whose consumption, on an individual basis, is small, and who tend to react similarly to causal variables, such as weather. The residential and commercial classes are in this category. The non-homogeneous group is comprised of those customer classes that are small, in terms of number of customers, but whose consumption is relatively large, and who tend to react differently to causal variables. The large customer/industrial classes are in this category.

The next stage of the process includes four steps. First, consumption equations are developed that model consumption per customer for each of the homogeneous customer classes. The consumption for the large industrial classes or other unique classes that are not homogeneous in nature is forecast in a different manner, based upon analyzing teach customer in these classes individual load. Second, the number of customers billed for each class is developed. Third, a consumption forecast for each class is calculated by applying the results of the consumption equations to the number of customers billed in the class. In some classes, as I describe later in my testimony, this step is somewhat modified. Fourth, a revenue forecast is generated by applying the class consumptions, along with other billing determinants, including customer service charges, to the existing rate structure.

Q. Is this the manner in which FCG has traditionally developed its forecasts?

A. Yes. The basic forecasting methods described in my testimony were employed by the Company for the first time in its 1996 base rate proceeding. These methods were employed again for the 2000 base rate proceeding, and the 2003 base rate proceeding. However, on an ongoing basis, our methods are reviewed through activities such as variance analyses, and adjusted when required. This is an evolutionary process with the goal of continually improving forecast performance. New techniques and causal factors are continually evaluated and are incorporated into the forecast models when they demonstrate improvement in forecast accuracy.

Q. How were the consumption equations developed for the Company‘s various customer classes?

A. Consumption equations were developed for the residential General Service customers (GS-1 through GS-6K) and commercial General Service customers (GS-1 through GS-60K) on a rate class group basis. Consumption for General Service 120K (GS-120K), Natural Gas Vehicles Sales Service (NGVSS), General Service 250K (GS-250K), General Service 1,250K (GS-1250K), Load Enhancement Service (“LES”), and Contract Demand Service (“KDS”) were forecast on an individual customer basis.

The various FCG service territories, located in Miami-Dade/Broward, Brevard, St. Lucie/Martin, and Indian River counties, are geographically and climatologically distinct. For this reason, it was necessary to develop consumption equations on both a rate class and geographic area basis. Where applicable and statistically valid, causal, least-squares regression

models employing non-parametric, cubic spline techniques were developed. As shown in Exhibit No. DJN-8, due to the warm climate, unlike more northern gas utilities, much of FCG's customer demand occurs on days when the average daily temperature is greater the 55ºF. As is shown in the exhibit, demand at these temperatures does not follow a simple linear pattern as it does for temperatures below 55ºF. The Company has found that use of a cubic spline methodology provides a better, more accurate forecast that covers the wider, warmer range of daily temperatures found in South Florida. The consumption equation for Brevard-area commercial customers was developed using multiple regression with heating degree-days, which I explain later in my testimony, and the number of weekends per month as regressor terms. Similarly, the consumption equations for the Miami-Dade/Broward-area residential and commercial classes and the Brevard-area residential class were developed using the multiple regression approach with heating degree-days and a cubic spline term as the principal drivers. One of the changes since the last base rate proceeding has been that sufficient empirical data has become available for the St. Lucie/Martin and Indian River areas, so distinct consumption equations were separately developed for these areas. For the commercial classes, the models employed up to eight years of historical consumption and temperature data over the period October 2008 through March 2017. For the residential classes, the models employed up to 19 years of historical consumption and temperature data over the period April 1998 through March 2017.

From these models, I derived the consumption equations that are used to

develop monthly average usage per customer for each class, residential service and commercial service. The consumption equations, in their most basic form, can be broken down into a base use component (non-temperature sensitive) and a heat use component (temperature sensitive). Review of the output statistics, use of holdout periods (i.e., segmenting the dataset into two periods, and using one subset to develop a model and the other to evaluate equation performance), and validation through "backcasting" (i.e., comparing actual historical results to the fitted values generated by the statistical model) demonstrated the accuracy of the regression models selected.

Q. Were changes made to the forecast models?

A. First, the Port St. Lucie division is now being forecast with its own consumption forecast models and equations. This has happened because the division has grown to and been at a large enough size long enough now that sufficient reliable data upon which to base a forecast is available. Also, as stated earlier, new techniques and causal factors are continually evaluated as changes in customer behavior and market conditions occur over time in an attempt to maintain and improve forecast accuracy. A series of regression models employing price, weather, and other various causal variables were developed and tested. Analysis of the output statistics and evaluations of the backcasts and scatter plots showed that multiple regression models using price as well as heating degree-days, with a base temperature of 80ºF, outperformed the residential models previously used. In the last base rate proceeding forecast, the Company changed the base

temperature for forecasting demand from 65ºF to either 72º or 80ºF where found statistically appropriate. Changing the base temperature at which heating degree days are calculated has the effect of shifting load from the base use (y-intercept, non-temperature sensitive) component to the heat use (slope, temperature sensitive) component. Using the more typical 65ºF base temperature to calculate heating degree days results in only three to four months with heating degree day values; the remaining months generate zero heating degree day values. This limits the multiple regression equations' ability to explain and forecast monthly variations in usage. Adopting either a 72ºF or 80ºF base temperature to calculate heating degree-days, results in heating degree-day values for each month of the year. This change helps explain and predict the monthly variation in customer usage observed in the dataset. Using the 80ºF base temperature improved forecast equation performance over the more typical 65ºF base temperature.

As in the forecast for the 2000 and 2003 base rate proceedings, where appropriate, cubic spline terms were introduced into the multiple regression models FCG is using here. The data analysis not only identified heating degree-days as a reasonable causal variable to use in a multiple regression model, but also indicated that residential customer heat sensitivity is not linear, and that it changed at 55ºF for Miami residential customers and Brevard County residential customers. At these temperature points, residential consumption increased as customers become more sensitive to colder weather. Introducing the cubic spline term into the residential models

has improved forecast performance.

Q. For the Base Year + 1 and the Projected Test Year period, how was the number of customers billed in each class developed?

A. The number of customers billed by class for the Base Year + 1 was developed as follows:

- The actual number of customers by class that were billed as of July 31, 2017, was determined and used as the base starting point upon which new customer growth was added.
- A monthly forecast of new customers (or reduction in customers) by class was developed in coordination with the Marketing and Engineering Departments.
- A seasonal pattern of changes in the number of inactive customers and customers locked for non-payment was developed from historical customer count data.
- The aggregate number of customers by class by month was developed by adding the monthly growth projections and seasonal changes in customer patterns to the July 2017 starting point.

The number of customers by class for the Projected Test Year period was developed in the same manner as described above, except that the base starting point for this period is the number of customers ending December 31, 2017, as forecast in the Base Year + 1 period. Exhibit DJN-1 and Exhibit DJN-2 present the monthly number of customers by class used to develop the normalized consumption and revenues.

Q. How was consumption developed for the homogeneous customer classes?

A. Consumption for those classes for which we employed consumption equations was developed by multiplying the projected number of customers billed in the class for each month by the usage per customer for the month. The usage per customer was developed by applying the consumption equation for the month with an input of normal heating degree-days for that month, and multiplying by the number of average meter read days in the month.

Q. How was consumption developed for the remaining classes?

A. For classes that were forecast by individual customer (GS-120K, GS-250K, GS-1250K, LES, KDS, NGVSS), monthly consumption represents the aggregate of the individual customer forecasts. The forecast by individual customer was prepared by reviewing historical monthly consumption data and customer surveys with the Marketing Department, and correcting for future changes in demand resulting from customer expansions and contractions and one-time, extraordinary events such as re-tooling, strikes and storms. For the Gas Lighting ("GL") class, consumption was developed by reviewing historical monthly demand.

Q. What heating degree-day patterns were applied to the consumption equations?

A. To develop a normalized consumption forecast for those classes where consumption equations were employed, it was necessary to develop normal heating degree-day patterns for each month of the year. Heating degree-

days are the difference between a base temperature and the average temperature for a day when that daily average is below the base temperature. Heating degree-days are simply a measure of weather changes that influence gas consumption. As stated earlier, the base temperature that was found to have highest correlation with actual demand, and was therefore incorporated into the multiple regression models, was either 72ºF or 80ºF.

The heating degree-day patterns that were employed are presented in Exhibit No. DJN-5. This information is based on ten years of daily weather data (July 1, 2007, through June 30, 2017) as measured by the National Ocean Airport, and Vero Beach and Melbourne Airports. The length of time used is also consistent with what was used in the Company's last base rate proceeding. This weather distribution is then adjusted for the Company's meter reading schedule. Additionally, a sufficient amount of data is now available for a weather station to be used for the Brevard division service territory. Therefore, the Company is moving from using the Daytona Beach weather station and data, which is north of the relevant territory, to using information from the Melbourne weather station, which is actually in the service territory. The Company is also now employing weather data from the Vero Beach weather station that is in the Company's Port St. Lucie territory, and thus, more representative of weather occurring in said territory.

Q. How were revenues for the Base Year + 1 and the Projected Test Year periods developed?

A. The revenues shown in Exhibit No. DJN-2 and Exhibit No. DJN-3 were developed by applying the forecast, normalized consumption and number of customers billed by class for the Base Year + 1 and the Projected Test Year periods to a model of the existing rate structure of the Company's tariff.

Q. Could you please discuss the process the Company employed to reclassify customers for the forecast into the new service classifications being proposed by the Company?

A. Since the volumetric break points were maintained, reclassification was accomplished by combining the appropriate rate classes. For residential customers, GS-1 became the new RS-1. GS-100 and GS-220 were combined into a RS-100. Rate classes GS-600 and above were combined into the new RS-600. For commercial customers, GS-1, GS-100, GS-220, GS-600, and GS-1.2K were combined into the new GS-1200. Customers in GS-6K remained GS-6K, while customers in GS-25K and GS-60K were combined to form the new GS-25K class. Large customers in the GS-120K and GS-250K classes were combined to form the new GS-120K, while customers in the GS-1250K remained GS-1250K.

Q. For the Projected Test Year period, how was the number of customers billed in each of the proposed rate classes developed?

A. The number of customers billed by proposed rate class for the projected year was developed as follows:

- As described above, customers that were billed as of July 31, 2017, were assigned to the appropriate volumetric rate class. From this data, the

number of customers in each of the proposed classes was determined and used as the base starting point upon which new customer growth was added.

- A monthly forecast of new customers (or reduction in customers) by class was developed in coordination with the Marketing and Engineering Departments.
- A seasonal pattern of changes in the number of inactive customers and customers locked for non-payment was developed from historical customer count data.
- The aggregate number of customers by class by month was developed by adding the monthly growth projections and seasonal changes in customer patterns to the July 2017 starting point.

The number of customers by class for the Projected Test Year period was developed in the same manner as described above, except that the base starting point for this period is the number of customers ending December 31, 2017, as forecast in the Base Year + 1 period.

Exhibit DJN-3 presents the monthly number of customers by class used to develop the normalized consumption and revenues.

Q. How was the consumption developed for the proposed customer classes?

A. Since the rate classes being proposed are to be formed by combining the existing rate classes, consumption was also aggregated in the same manner as the customer counts.

Q. Is there any impact on the billing determinant forecast resulting from the reclassification?

A. No. There is no change in the number of customers, volumes, or revenues under current rates. Exhibit DJN-4 presents the new forecast of customers, volumes, and revenues under current rates resulting from the reclassification. Exhibit DJN-3 presents the new forecast of customers and volumes and revenues under current rates. As a comparison of the two exhibits shows, there is no change in either the aggregate number of customers or volumes as a result of the reclassification.

Q. How was the number of demand charge quantity billing units determined for each class?

A. Exhibit DJN-7 presents the proposed demand charge quantities. The demand charge quantity ("DCQ") for each customer was determined by reviewing individual customer billing data for the past three years, and calculated in the manner described in the Company's proposed tariff. For customers for whom the Company has only cycle billing data, the DCQ was calculated by taking each customer's peak monthly consumption and dividing it by the number of billing days in the peak month. For customers who are metered by an automatic meter-reading device that provides daily consumption data, each customer's DCQ is set to equal its peak daily consumption during the past three years.

Q. Does this conclude the portion of your testimony addressing the Company's forecast?

A. Yes, it does.

II. THE CLASS COST OF SERVICE STUDY

Q. Was a particular methodology or model used to conduct the cost of service study?

A. The standard methodology traditionally used by the FPSC staff formed the base of the cost of service study. The Company's study also follows the presentation format contained in the H Schedules of the prescribed MFR forms.

Q. Were other factors used to establish the proposed rates?

A. Yes. As described in more detail later in my testimony, several adjustments were made to the initial cost allocations produced by the standard model. The adjustments were made to appropriately recognize that the model allocates a disproportionate share of capacity costs to the large-volume customer classes. Application of the cost study results without adjustment would result in uneconomical rates to certain large-use customers. These adjustments are based on market considerations, such as certain customers' ability to effectively bypass FCG's distribution system for a cost significantly lower than it otherwise would be based upon allocations within the cost study. Each of the market-based rate adjustments was accomplished through a reallocation of cost in the Direct and Special Cost section of the FPSC staff's cost model, MFR Schedule H-2. These specific adjustments are described in detail below. This modified study is the basis for the rate design proposed in this proceeding.

Q. Please describe the objectives in performing a cost of service study.

A. There are two primary objectives in cost of service analysis. The first objective is the development of “unbundled” cost information by function (production, storage, transmission, and distribution) and classification (customer, commodity, demand, and revenue) in order that cost-based rates may be designed for each customer service classification. The second objective is the determination of the rate of return for each of the FCG customer service classifications based on present rates. Such information will provide guidance in equitably allocating the Company’s proposed revenue increase.

Q. How is a cost of service study performed?

A. Traditional cost studies can be segmented into three individual activities: functionalization, classification and allocation.

Functionalization refers to the process of relating plant investments and associated operating expenses to four basic functional categories: production, storage, transmission, and distribution. Plant investments and expenses are assigned to the functional categories. The functional assignment of costs is a relatively straightforward process. The Company translates its accounting records to the Federal Energy Regulatory Commission (“FERC”) Uniform System of Accounts. Then, based on FERC accounting codes, plant facilities and investments are assigned to cost of service functional categories. Related expenses follow the same functionalization process. MFR Schedule H-3, pages 2 and 3 present the

functionalized overall cost of service, and pages 4 and 5 present the functionalized rate base. For FCG, all costs fall into the distribution function category.

Classification refers to the process of dividing the functional costs into categories based on cost causation. A local distribution system is designed and operated based on the individual and collective service needs of its customers. The cost to provide such service can be categorized in such a manner as to assign costs to follow the manner in which they are incurred. There are four common categories used to group costs: capacity or demand costs, commodity costs, customer costs, and revenue costs.

1. Capacity or demand costs are those incurred by the utility as part of its obligation to serve, and are incurred in order to meet the on-demand service requirements of the total customer base. Capacity costs are directly related to being able to meet the peak design or maximum demand requirements placed on the local distribution system by its customers. Capacity costs are incurred to ensure that the system is ready to serve customers at peak design requirements levels. Due to the nature of gas distribution assets being, in many cases, pipe buried in the ground, such as mains or services, or installed only once at customer facilities, such as meters, these costs are generally considered to be buried or “fixed,” and are incurred whether or not a customer uses any gas.
2. Commodity costs correspond directly to the quantity of product

consumed. Therefore, costs which can be associated directly to the volume of gas sold or transported fit into this category.

3. Customer costs are incurred to connect a customer to the distribution system, to meter their usage, and to maintain their account. In addition, other costs, such as meter reading, which are a function of the number of customers served, are included in this category. Thus, customer costs continue to be incurred without regard to a customer's level of consumption.

4. Revenue costs relate to cost items which are incurred based on the percentage of total revenue received from each class of customers. These costs vary with the amount of distribution revenues collected by the Company. Gross receipts taxes and regulatory assessment fees fall into this category.

I have used the cost classification methodology contained in the MFR model used in both the 2000 and 2003 rate cases. The "classifiers" identified in the model were not altered. The classification of each functionalized cost component is contained in MFR schedule H-3, pages 2 - 5.

Allocation is the final step and involves the distribution or assignment of the classified costs to the Company's customer classes. Those costs, which can be directly attributable to a specific customer or customer class, are directly assigned to that customer or class. The remaining costs are assigned by applying a series of allocation factors. The allocation factors

attempt to distribute costs based on the causal relationships between the respective customer classes and the classified costs. The development and application of the allocation factors and direct assignment of costs is the final step in a cost of service study. MFR Schedule H-2, page 5, details the development of allocation factors by customer class.

III. RATE DESIGN

Q. What is the revenue increase the Company is requesting from interim rates?

A. As described in the testimony presented by Mr. Morley, the Company requests that annual revenues be increased by $4,893,061 on an interim basis.

Q. Please describe the method used to allocate the Company's proposed interim rate relief.

A. The Company followed the methodology provided in MFR Schedule F-10 for calculating and allocating appropriate interim rates.

Q. How was the interim rate increase allocated among the customer classes?

A. The revenue deficiency calculated on MFR Schedule F-7 was allocated on an equal percentage basis to each of the Company's existing customer classifications, with the exception of the KDS negotiated rate class. The energy or transportation charge for each respective class has been adjusted to achieve the proposed interim increase. Exhibit No. DJN-9 presents the allocation of the Company's requested interim rate relief.

Q. You indicated that costs were allocated by customer class. Please describe how customer classes are established.

A. Customer classes are established based upon various characteristics, including, but not limited to, type of end user, type of end use consumption, load, and delivery circumstances, and cost causation. Types of end users can be groupings such as residential, commercial, or industrial. Consumption characteristics can be used to group customers by type of end use application, e.g., cooking, water heating, space heating, or process loads. Load characteristics can cover the rate of gas consumption by customers, such as annual, seasonal or peak volumes; load factor; or whether gas is used and needed by the customer on an interruptible or firm basis of service. Cost causation refers to customers grouped based upon the Company incurring similar costs to serve, such as using meters of a similar size and cost, service lines of a similar size, etc. The objective of grouping customers into rate classes is to establish relatively homogenous categories that incur cost to serve in similar manners and can therefore be priced fairly without one group of customers subsidizing another.

Q. Is the Company proposing changes to its existing customer classifications?

A. Yes. The Company is proposing to consolidate its existing rate classes as follows:

New Rate Classes

Old Rate Classes	Residential	Commercial/Industrial
GS-1	RS-1	GS-1
GS-100 GS-220	RS-100	
GS-600 GS-1.2K	RS- 600	
GS-6K		GS-6K
GS-25K GS-60K		GS-25K
GS-120K GS-250K		GS-120K
GS-1250K		GS-1250K

- Customers in the current General Service 1 (GS-1) class, if residential, would move to the new Residential Service (RS-1) class, and if commercial, would remain in the GS-1 class.
- Customers in the current General Service 100 (GS-100) class, if residential, would move to the new Residential Service (RS-100) class, and if commercial, would move to the GS-1 class.
- Customers in the current General Service 220 (GS-200) class, if residential, would move to the new Residential Service (RS-100) class, and if commercial, would move to the GS-1 class.
- Customers in the current General Service 600 (GS-600) class, if residential, would move to the new Residential Service (RS-600)

class, and if commercial, would move to the GS-1 class.

- Customers in the current General Service 1200 (GS-1.2K) class, if residential, would move to the new Residential Service (RS-600) class, and if commercial, would move to the GS-1 class.
- Customers in the current General Service 6000 (GS-6K) class that only contains commercial/industrial customers would stay in the GS-6K class.
- Customers in the current General Service 25000 (GS-25K) class that only contains commercial/industrial customers would stay in the GS-25K class.
- Customers in the current General Service 60000 (GS-60K) class that only contains commercial/industrial customers would be consolidated with the GS-25K class.
- Customers in the current General Service 120000 (GS-120K) class that only contains commercial/industrial customers would be stay in the GS-120K class.
- Customers in the current General Service 250000 (GS-250K) class that only contains commercial/industrial customers would be consolidated with the GS-120K class.
- Customers in the current General Service 1250000 (GS-1250K) class that only contains commercial/industrial customers would be stay in the GS-1250K class.

Q. Why is the Company proposing changes to its existing customer classifications?

A. The Company is proposing these changes to simplify its rate structure by, first, re-establishing the distinction between residential and commercial/ industrial customers. And second, to reduce the number of rate classes into larger volumetric buckets based upon the size and types of meters needed to serve each grouping. These changes should serve to reduce cross-subsidization between customers, allow rates to more closely follow cost causation, and present customers with a simpler and more easily understood rate categories.

Q. Why is the Company re-establishing the distinction between residential and commercial/ industrial customers?

A. In the 2003 base rate case, the Company changed it is rate classes from traditional residential, commercial and industrial groupings to one based only upon annual volumes. As part of the settlement, the Company agreed to continue to track sub-categories of customers by residential and commercial/industrial designations within each volumetric rate class. Over the almost 14 years these rate classifications have been in effect, FCG has found that the average size of meters and services and the associated cost varies significantly between residential and commercials customers. These differences seem to arise from the variations in end use applications between residential and commercial users. The proposed separate residential and commercial rate classes will thus provide fairer rates that more closely track cost causation. Further, the Company has not been able to achieve cost savings by combining residential and commercial customers of similar volume due to the fact that they must be

tracked separately to meet the taxation requirements of state and local governments.

Q. What is the benefit of reducing the number of rate classes into larger volumetric buckets based upon the size and types of meters needed to serve each grouping?

A. Because of changes in gas consumption, a significant number of FCG customers have moved from one volumetric rate class to another. This past year alone approximate 20 percent of the customer base moved between volumetric rate classes. By moving to the proposed new rate classes with wider volumetric bands, customer movement between rate classes should decrease, thereby giving more rate stability to the customers.

Q. Are there any other benefits to the new rate structures?

A. Yes. The new rates continue to maintain volumetric based rates while simplifying the rate structure by eliminating a number of rate classes that can be overly complex and confusing for our customers.

Q. How did the Company determine that there was a difference in the meter and service costs between residential and commercial/industrial customers?

A. FCG conducted a study looking at all of the customers' meters and what would be their current costs if installed today. The results of that study are presented in Exhibit No. DJN-10. As can be seen, there is a clear

difference between the costs of similar volume residential and commercial accounts. Based upon the similar costs the residential GS-1 and GS-220 were grouped together. Likewise, the residential GS-600 and GS-1200K exhibit similar costs. The commercial GS-1 through GS-1200K all have the same costs, and thus, make a natural grouping.

Q. Why is the Company proposing to combine GS-25K with GS-60K, and the GS-60K and GS-120K with GS-250K, in spite of cost differences?

A. Despite the differences in costs, these classes are closer to each other than to other classes in terms of costs to serve. Also, combining these classes would reduce annual customer movement between each class by 22 percent for the GS-25K and GS-60K, and reduce customer movement 31 percent between the GS-120K and GS-250K classes.

Q. Please describe the process used to design the proposed permanent rates.

A. I performed a fully embedded cost-of-service study to determine the appropriate assignment of expense and investment costs to each of the Company's classes of service. The cost study utilized information from all areas of the Company's operations, including customer billing and consumption records, engineering studies, forecasts of growth, and cost data from the accounting records. The total cost of service was assigned or allocated to determine the revenue requirements of each class of customers. The results of my analysis provided the principal basis for the Company's proposed rate design, which is detailed on MFR schedule H-1,

and is summarized in Exhibit No. DJN-11.

Q. How is the Company proposing to address customers with alternate fuel and other discounts in its tariff?

A. For the purpose of designing rates, all customers in the Load Enhancement Service ("LES"), and other tariffs with discounts recoverable through the Competitive Rate Adjustment ("CRA") rider, were aggregated with the rate class they were discounted from.

Q. Is the Company proposing new customer classifications?

A. Yes. The Company is proposing to establish two new high-volume rate classes: GS-11M for customers with annual consumption between 11,000,000 and 25,000,000 therms, and GS-25M for customers with consumption greater than 25,000,000 therms.

Q. Why is the Company proposing these two new rate classifications?

A. FCG has been approached several times over the past several years by potential customers interested in obtaining service from FCG that would be considered of sufficient size to fall under these proposed tariffs. Currently, the pricing and design of the GS-1250K rate has not proven adequate or competitive enough for these prospective customers. Thus, the only way the Company could put together proposals that might attract these customers is through special contracts that would fall under the KDS tariff. Therefore, the Company proposes to establish these two new tariffs through which it can provide competitive pricing under a standard tariff

without the need for a special contract. Further, because these rates would not be bound by a special contract, the rates would be subject to normal review and adjustment as any other rate class in a base rate proceeding by the FPSC.

Q. Without customers currently in these classes, how were rates designed?

A. These rates were designed based upon the cost estimates from various proposals that the Company has reviewed over the last several years.

Q. Does the Company's customer, sales, and revenue forecast account for the proposed revisions to its existing customer classifications?

A. Yes. The forecasts of customers, sales and revenues I sponsored and presented in the MFRs filed in this rate proceeding are consistent with the Company's proposed customer classifications and their respective rate schedules.

Q. Has the Company provided information that will allow the FPSC to compare existing classifications to the proposed classifications?

A. Yes. MFR Schedules E-1 and E-5 have been prepared to enable the FPSC to compare bills, therms and revenues under the existing classes to the proposed classes. The proposed classifications do not distinguish between customer types (residential, commercial, interruptible, firm, etc.). However, MFR Schedules E-1 and E-5 display the billing determinants both by proposed classification, and by existing customer type.

Q. Has the Company directly allocated investment and operations and maintenance ("O&M") expense related to specific customer classes or individual customers in its cost of service study?

A. Yes. The Company has removed net plant and O&M costs attributable to customers served under the Third Party Supplier ("TPS") rate schedule and the industrial customers currently served under the existing KDS rate schedule from the costs allocated to other customer classes. The Company conducted a separate cost analysis for both TPS and KDS customers. Costs identified in the respective analyses were directly assigned to the TPS class and KDS customers.

Q. Please describe the direct assignment of costs to the KDS customer class.

A. Costs to the KDS class were assigned based upon those presented in the settlement and contract approved by the FPSC this past summer.

Q. Please describe how you allocated capacity costs in the cost of service study.

A. Capacity costs were allocated based upon the standard Peak and average method employed and approved in previous base rate cases.

Q. What methodology did you use to modify the peak and average capacity cost allocator used in the FPSC Staff's model for Large Volume customers?

A. I utilized the identical allocation method used in the Company's most recent rate case. The Company's Utility Operations Department updated

their calculated cost of physical bypass for the customers in classes GS-250K and GS-1250K. This bypass analysis is included as Exhibit No. DJN-12 to my testimony. I adjusted the mains cost allocated to both classes to an amount equal to the customers' incremental cost to bypass. Without this adjustment the rates resulting from the larger cost allocation provide a potential incentive for customers to leave the system.

Q. How were commodity costs allocated?

A. Commodity related costs were allocated on the basis of annual sales volumes.

Q. Please describe how you allocated customer costs.

A. Customer costs were allocated based on the relative number of customers served in each customer class. The "weighted number of customers" allocator was used to distribute costs based on the recognition that larger customers exhibit higher customer costs. Meters, regulators, and service lines are generally more expensive for larger customers. The weightings used were derived from the relative investment in meters, regulators and service lines required to serve representative customers in each class. The weightings can be found on MFR Schedule E-7.

Q. How were revenue costs allocated?

A. Revenue costs were allocated on the basis of gross revenues by customer class.

Q. It would appear that a cost of service study is primarily a mechanical accounting of costs. Are there opportunities to apply judgment and consider market conditions or other mitigating factors in the study?

A. Yes. Cost studies are not simply formula-based accountings of costs by rate classification. They require judgment by an experienced analyst to appropriately allocate and assign costs. An understanding of the utility's business strategy, market area, and competitive position is necessary to complete an appropriate rate design. Within the cost of service study, the selection and application of allocation factors requires not only a mechanical understanding of the Company's costs, but also a common sense understanding of a variety of economic, social, regulatory, and competitive considerations.

Q. Should a cost of service study be exclusively relied upon to establish utility rates?

A. No. The study provides a guide for a starting point for the discussion on what rates should be. Other factors, including, but not limited to, fairness, incrementalism, and gradualism need to be considered.

Q. Please discuss the Company's proposal to set demand charge quantities only once per year instead of twice per year, as it does currently.

A. In the 2003 rate case order, rates were set with seasonal recalculation to reflect how FCG is billed for interstate pipeline capacity. This is an approach that is based on a fundamentally flawed assumption. The assumption is that demand charges are used to recover interstate pipeline

costs. The fact is that interstate pipeline costs are a part of the Company's purchased gas cost and recovered through its Purchased Gas Adjustment rider. The demand charges are used to recover a portion of the fixed costs of mains on the Company's system. These costs are simply not seasonal in nature, and as the mains in the ground do not vary depending on the season, these costs do not vary. Thus, this cost should be appropriately structured to match the cost causation, which is the annual design day demand as reflected by the customer's DCQ.

Q. Are you proposing any change to the Company's customer charges?

A. Yes. The Company is proposing these changes based upon the results of the class cost of service study, and a review of the customer charges of comparable Florida gas utilities shown in Exhibit No. DJN-13.

Q. Why is the level of the customer charge important?

A. The customer charges provide a means to recovering costs that are independent of gas use. Billing, metering, return on fixed capital costs, such as for meters and services, are all examples of these kinds of costs. These are all costs the Company must incur in order to be ready to serve a customer. In the interest of fairness and the principle of following cost causation, these charges should be set in line with the customer costs from the class cost of service study. Also, in the interest of fairness, the customer charges must be considered with respect to what the FPSC has approved for similar customers of other gas utilities under the FPSC's jurisdiction. As can be seen from Exhibit No. DJN-13, the customer

charges proposed for this case are be similar to those approved for the other gas utilities.

Q. Did you consider the Company's rate of return for your new customers at present rates in your analysis?

A. Yes. The rates were designed with fairness in mind to prevent as much cross class subsidization as possible. This was done to by setting rates to result in relatively equal rates of return for all classes except GS-120K and KDS.

Q. Why was GS-120K not brought to parity?

A. Demand and consumption in this class has grown over the years for this class, and a revenue increase of 100 percent would be required to bring this class' rate of return into parity with the other classes. This increase would be almost four times the system average. Therefore, in the interest of providing a more gradual increase to reduce rate shock, the Company is proposing to move this closer to parity by going from -0.8 percent to 4.0 percent. This increase still results in an increase for the GS-120K class that is approximately three times the average increase for the system being requested.

Q. Is the Company proposing changes to its other operating revenue charges?

A. Yes. The Company is proposing to adjust some of its customer charges and to add certain new charges to ensure that costs generated by individual customer requests are recovered from that customer, instead of

being spread over the general body of customers. The calculation of these charges is set forth in MFR Schedule E-3, which is sponsored by witness Igwilo. The resulting revenue increases are included in the class cost of service study. The proposed charge changes are as follows:

Proposed Charges	Current Charge	Proposed Charge Reg Hour	Proposed Charge After Hour	Change
Initial Connection - Residential Customer	$50.00	$80	$100	$30
Initial Connection - Commercial Customer	$110.00	$150	$200	$40
Residential Reconnect after Disconnect for Cause (Basic)	$37.00	$40	$50	$3
Commercial Reconnect after Disconnect for Cause (Basic)	$80.00	$80	$100	$0
Bill Collect in Lieu of Disconnection - Disconnection	$20.00	$25	$32	$5
Bill Collect in Lieu of Disconnection - Bill Collection	$20.00	$25	$29	$5
Meter Read Only	$0.00	$15	$22	$15
Temporary Disconnection of Service - Customer Request	$0.00	$35	$45	$35
Failed Trip Charge	$0.00	$20	$20	$20

Q. Please compare the proposed rates to the present rates.

A. A comparison of present and proposed base rates and customer charges by customer class is presented in MFR Schedule H-1, and is summarized on Composite Exhibit No. DJN-14.

Q. How much revenue will the proposed rates produce?

A. The rates and charges are designed to produce additional revenues of $14,994,503, as indicated on MFR Schedule H-1. Target revenues under the proposed rates total $69,405,425.

Q. Please summarize the conclusions you have reached based on your cost analysis and rate design.

A. The proposed rates will provide revenues to meet the Company's revenue requirement in this case. The rates are designed with an eye towards fairness by moving the rate classes substantially towards parity to eliminate cross subsidization. Further, the proposal also takes into account that this needs to be accomplished at times in a gradual and incremental manner.

Q. Does this conclude your direct testimony?

A. Yes, it does.

Daniel J. Nikolich
Manager, Rates – Southern Operations

Mr. Nikolich is the Manager, Rates – Southern Operations for Southern Company Gas who has over 24-years of experience working with regulated rates and tariffs in multiple states. Mr. Nikolich is responsible for overseeing the development of short-term and long-term demand and revenue forecasts, along with short-term and long-term new load growth forecasts. Further, he is responsible for providing economic and statistical analysis for rate design, cost of service and allocation studies. He is also responsible for market research and planning studies along with and maintaining the supporting informational databases in the various states that Southern Company Gas has local distribution companies.

RELEVANT PROJECT EXPERIENCE

Regulatory Analysis, Ratemaking, Cost of Service

- Responsible for rate design 2017 Atlanta Gas Light Georgia Rate Adjustment Mechanism filing. Provided rate design and discovery support.
- Responsible for program design and cost effectiveness analysis for the Elizabethtown Gas energySmart program (ESP) in the 2015 annual program renewal filing. Provided testimony for the benefits of the ESP and the cost effectiveness of its measures, represented the company and supported its position in negotiations with regulatory agencies, customers and intervenors.
- Responsible for program design and cost effectiveness analysis for the Chattanooga Gas energySmart program (ESP) in the 2009 Chattanooga Rate Case. Provided testimony for the benefits of the ESP and the cost effectiveness of its measures, represented the company and supported its position in negotiations with regulatory agencies, customers and intervenors.
- Responsible for rate design and cost of service allocation studies for the 2006 Chattanooga Gas Company rate case. Provided testimony and represented the company and supported its position in negotiations with regulatory agencies, customers and intervenors.
- Responsible for rate design studies for the 2003 Florida City Gas Flat Rate billing filing. Provided testimony and represented the company and supported its position in negotiations with regulatory agencies, customers and intervenors.
- Responsible for the development of cost-of-service allocation, weather normalization and rate design studies for the 2002 Elizabethtown Gas rate case. Represented the company and supported its position in negotiations with regulatory agencies, customers and intervenors.
- Responsible for rate design and economic studies and analysis for the 2001 Valley Cities dual issue Customer Assistance Rate and Customer Education Rider rate case. Provided testimony and represented the company and supported its position in negotiations with regulatory agencies, customers and intervenors.

- Responsible for rate design and operational studies for the 2001 North Carolina Third Party Supplier tariff restructuring filing. Provided testimony and represented the company and supported its position in negotiations with regulatory agencies, customers and intervenors.
- Responsible for rate design, operational and economic studies and analysis for the 2000 Valley Cities Gas unbundling filing. Provided testimony and represented the company and supported its position in negotiations with regulatory agencies, customers and intervenors.
- Responsible for the development of cost-of-service, allocation and rate design studies for the 2000 Florida City Gas rate case. Represented the company and supported its position in negotiations with regulatory agencies, customers and intervenors

Forecasting

- Supervised the development of the demand and revenue forecasts for the 2017 Virginia Natural Gas Rate Case.
- Developed and prepared the demand and revenue forecasts for the 2017 Elizabethtown Gas Rate Case.
- Developed and the demand and revenue forecasts for the 2017 Atlanta Gas Light Rate Georgia Rate Adjustment Mechanism Filing.
- Developed and prepared the demand and revenue forecasts for the 2010 Virginia Natural Gas Rate Case.
- Developed and the demand and revenue forecasts for the 2010 Atlanta Gas Light Rate Case.
- Developed and prepared the demand and revenue forecasts for the 2009 Elizabethtown Gas Rate Case.
- Supervised the development of the demand and revenue forecasts for the 2009 Chattanooga Gas Rate Case.
- Prepared and testified on the demand and revenue forecast for the 2003 Florida City Gas rate case.
- Prepared and testified on the demand and revenue forecast for the 2002 Elizabethtown Gas rate case.
- Developed and prepared 2005-2017 demand and revenue forecasts for Atlanta Gas Light, Chattanooga Gas, Elizabethtown Gas, Elkton Gas, and Florida City Gas.
- Developed and prepared the 1994-2004 demand and revenue forecasts for Elizabethtown Gas, and Florida City Gas.
- Developed and prepared the 1997-2004 forecasts for Elkton Gas.
- Developed and prepared the 1997-2001 forecasts for Valley Cities and Waverly Gas and North Carolina Gas.

Market Analysis

- Provided Market Analysis of residential and commercial attrition for Atlanta Gas Light's Georgia Market.

- Provided market analysis of Elizabethtown Gas', Florida City Gas' and Elkton Gas' Markets.
- Provided market analysis of North Carolina Gas' and Valley Cities and Waverly Gas' Markets.

Expert Witness Testimony Presentation

- Florida Public Service Commission
- New Jersey Board of Public Utilities
- Pennsylvania Public Utility Commission
- North Carolina Public Utilities Commission
- Tennessee Regulatory Authority

PROFESSIONAL HISTORY

Southern Company Gas (2012-Present)
Manager, Rates – Southern Operations

AGL Resources (2005 – 2012)
Manager, Planning and Forecasting

NUI Corporation (2001-2005)
Manager, Planning and Forecasting

NUI Corporation (1993-2001)
Forecast Analyst

EDUCATION

B.S. Business, Economics, College of Business and Economics, University of Idaho, 1984

CALCULATION OF THE HISTORIC BASE YEAR + 1
NUMBER OF BILLS
(CURRENT RATES - CURRENT RATE CLASSES)

RATE CLASS	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Sep 2017	Oct 2017	Nov 2017	Dec 2017	TOTAL
GS-1	27,209	31,132	31,156	31,109	31,069	31,011	34,857	34,834	34,811	34,794	34,779	34,756	391,517
GS-100	50,661	51,337	51,366	51,416	51,390	51,367	50,323	50,381	50,447	50,490	50,522	50,554	610,254
GS-220	22,895	18,566	18,628	18,680	18,740	18,760	15,898	15,915	15,953	15,993	16,067	16,111	212,206
GS-600	1,337	1,330	1,330	1,337	1,339	1,342	1,347	1,343	1,344	1,347	1,346	1,345	16,087
GS-1.2K	3,041	3,028	3,046	3,060	3,065	3,069	3,030	3,028	3,038	3,039	3,039	3,047	36,530
GS-6K	2,431	2,315	2,306	2,313	2,323	2,317	2,323	2,326	2,342	2,345	2,346	2,348	28,035
GS-25K	326	298	307	306	306	306	305	306	310	310	310	310	3,700
GS-60K	70	71	72	71	71	73	73	73	73	73	73	73	866
GS-120K	44	49	49	49	49	47	47	46	46	46	46	46	564
GS-250K	46	50	47	46	45	46	46	49	49	49	49	49	571
GS-1250K	3	5	4	4	4	4	4	6	6	6	6	6	58
Gas Lighting (GL)	196	196	192	191	192	190	328	328	328	328	328	328	3,125
Natural Gas Vehicles (NGV)	0	0	0	0	0	0	0	0	0	0	0	0	0
Load Enhancement Service (LES)	3	3	3	3	3	3	3	3	3	3	3	3	36
Contract Demand Service (KDS)	1	1	1	1	1	1	1	1	1	1	1	1	12
TOTAL	108,263	108,381	108,507	108,586	108,597	108,536	108,585	108,639	108,751	108,824	108,915	108,977	1,303,561

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CALCULATION OF THE HISTORIC BASE YEAR + 1
CONSUMPTION IN THERMS
(CURRENT RATES - CURRENT RATE CLASSES)

RATE CLASS	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Sep 2017	Oct 2017	Nov 2017	Dec 2017	TOTAL
GS-1	222,680	216,280	205,947	211,182	188,643	177,129	169,226	215,897	214,959	208,622	253,518	307,774	2,591,860
GS-100	737,133	802,082	717,059	706,335	617,709	571,752	536,235	532,624	531,089	523,681	659,738	819,898	7,755,336
GS-220	555,904	537,642	484,714	482,182	416,336	382,695	328,067	280,047	279,382	277,930	352,052	437,152	4,814,102
GS-600	107,815	108,421	115,706	118,603	102,868	90,733	78,846	92,088	91,720	90,287	104,842	121,286	1,223,214
GS-1.2K	927,525	898,821	1,003,718	976,170	905,886	870,433	774,726	855,105	852,624	835,381	899,035	971,311	10,770,733
GS-6K	2,174,705	2,196,459	2,310,044	2,322,763	2,155,518	2,135,220	2,056,597	2,168,526	2,167,006	2,122,927	2,265,796	2,429,678	26,505,238
GS-25K	904,766	877,748	977,899	910,680	870,053	849,321	802,320	832,920	837,010	815,932	877,467	944,634	10,500,750
GS-60K	640,141	640,094	670,268	631,512	588,176	714,303	626,007	509,562	506,463	493,700	521,323	552,061	7,093,610
GS-120K	700,704	708,201	837,953	713,648	840,490	682,810	741,579	708,300	677,000	682,300	725,500	713,200	8,731,685
GS-250K	2,536,889	2,182,923	2,439,711	2,122,253	1,939,178	1,784,877	1,764,372	1,993,423	1,875,754	1,934,047	2,029,818	2,070,989	24,674,233
GS-1250K	977,808	601,995	1,090,544	955,155	859,559	718,443	727,035	1,072,170	1,216,570	1,807,070	1,121,300	1,264,900	12,412,548
Gas Lighting (GL)	1,224	1,224	1,224	1,224	1,224	1,224	3,169	3,169	3,169	3,169	3,169	3,169	26,360
Natural Gas Vehicles (NGV)	0	0	0	0	0	0	0	0	0	0	0	0	0
Load Enhancement Service (LES)	422,558	589,127	599,071	631,672	631,016	437,418	404,983	611,100	619,500	628,800	565,400	532,100	6,672,746
Contract Demand Service (KDS)	1,292,861	1,162,682	1,140,503	50,864	47,200	44,140	44,319	392,000	300,000	872,500	798,000	798,000	6,943,069
TOTAL	12,202,714	11,523,699	12,594,360	10,834,242	10,163,856	9,460,497	9,057,482	10,266,930	10,172,247	11,296,346	11,176,959	11,966,152	130,715,484

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CALCULATION OF THE HISTORIC BASE YEAR + 1
REVENUE
(CURRENT RATES - CURRENT RATE CLASSES)

RATE CLASS	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Sep 2017	Oct 2017	Nov 2017	Dec 2017	TOTAL
GS-1	$582,104	$608,728	$602,243	$608,836	$575,178	$551,285	$576,887	$629,403	$627,997	$619,905	$679,501	$751,173	$7,413,241
GS-100	$1,591,300	$1,694,875	$1,575,064	$1,560,506	$1,438,238	$1,351,847	$1,292,143	$1,260,791	$1,259,509	$1,251,442	$1,426,884	$1,633,172	$17,335,772
GS-220	$1,046,765	$973,852	$890,941	$885,383	$798,917	$738,948	$630,253	$558,390	$557,933	$557,003	$651,270	$758,935	$9,048,589
GS-600	$140,069	$141,007	$148,662	$154,529	$135,808	$119,277	$106,433	$114,795	$114,277	$112,593	$127,146	$143,842	$1,558,438
GS-1.2K	$826,017	$816,149	$894,236	$881,513	$822,819	$769,642	$680,137	$718,130	$715,949	$701,889	$751,677	$807,483	$9,385,642
GS-6K	$1,421,487	$1,414,746	$1,475,664	$1,485,201	$1,384,194	$1,338,794	$1,286,274	$1,286,762	$1,290,382	$1,264,539	$1,345,910	$1,437,653	$16,431,607
GS-25K	$462,032	$454,208	$505,321	$462,369	$454,966	$444,305	$409,201	$409,109	$415,025	$405,691	$436,690	$470,089	$5,329,007
GS-60K	$326,503	$327,257	$347,389	$318,071	$288,505	$388,834	$313,994	$228,774	$227,382	$221,481	$234,202	$247,138	$3,469,529
GS-120K	$199,404	$204,963	$231,326	$204,005	$228,933	$262,847	$212,425	$199,374	$194,603	$191,928	$204,700	$201,937	$2,536,446
GS-250K	$606,253	$557,484	$585,197	$500,068	$460,877	$429,943	$424,674	$489,330	$464,156	$466,418	$492,550	$458,253	$5,935,201
GS-1250K	$143,106	$109,789	$165,039	$149,097	$136,825	$118,710	$119,813	$173,873	$197,331	$276,728	$212,308	$224,349	$2,026,969
Gas Lighting (GL)	$1,656	$1,656	$1,656	$1,670	$1,670	$1,621	$4,299	$4,299	$4,299	$4,299	$4,299	$4,299	$35,725
Natural Gas Vehicles (NGV)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Load Enhancement Service (LES)	$60,716	$81,080	$82,295	$86,086	$86,005	$62,338	$58,373	$83,572	$84,598	$85,735	$78,180	$74,108	$923,086
Contract Demand Service (KDS)	$78,526	$76,313	$74,998	$25,156	$25,156	$25,156	$1,730	$12,160	$9,400	$26,575	$20,565	$24,340	$400,075
Miscellaneous and Other Revenues	$1,590,062	$81,164	$756,269	$114,099	$278,635	($196,354)	$187,077	$333,333	$230,974	$743,377	$761,006	$787,469	$5,667,112
TOTAL	$9,076,002	$7,543,271	$8,336,301	$7,436,590	$7,116,727	$6,407,192	$6,303,713	$6,502,096	$6,393,815	$6,929,604	$7,426,888	$8,024,242	$87,496,439

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CALCULATION OF THE PROJECTED TEST YEAR
NUMBER OF BILLS
(CURRENT RATES - CURRENT RATE CLASSES)

RATE CLASS	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	Jun 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	TOTAL
GS-1	34,736	34,724	34,711	34,696	34,675	34,660	34,639	34,620	34,601	34,587	34,576	34,557	415,782
GS-100	50,594	50,627	50,658	50,688	50,733	50,766	50,782	50,839	50,907	50,951	50,984	51,017	609,546
GS-220	16,183	16,219	16,277	16,302	16,353	16,398	16,432	16,450	16,490	16,532	16,606	16,651	196,893
GS-600	1,349	1,351	1,359	1,364	1,371	1,370	1,373	1,377	1,378	1,381	1,380	1,379	16,432
GS-1.2K	3,045	3,058	3,065	3,067	3,072	3,077	3,082	3,083	3,092	3,093	3,093	3,100	36,927
GS-6K	2,348	2,357	2,370	2,368	2,377	2,378	2,376	2,379	2,394	2,396	2,397	2,398	28,538
GS-25K	312	312	312	313	315	315	315	317	321	321	321	321	3,795
GS-60K	73	73	73	73	73	74	74	74	74	74	74	74	883
GS-120K	51	51	51	51	51	51	51	51	51	51	51	51	612
GS-250K	50	50	50	50	50	50	50	50	50	50	50	50	600
GS-1250K	4	4	4	4	4	4	4	4	4	4	4	4	48
Gas Lighting (GL)	328	328	328	328	328	328	328	328	328	328	328	328	3,936
Natural Gas Vehicles (NGV)	0	0	0	0	0	0	0	0	0	0	0	0	0
Load Enhancement Service (LES)	3	3	3	3	3	3	3	3	3	3	3	3	36
Contract Demand Service (KDS)	1	1	1	1	1	1	1	1	1	1	1	1	12
TOTAL	109,077	109,158	109,262	109,308	109,406	109,475	109,510	109,576	109,694	109,772	109,868	109,934	1,314,040

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FLORIDA CITY GAS
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CALCULATION OF THE PROJECTED TEST YEAR
CONSUMPTION IN THERMS
(CURRENT RATES - CURRENT RATE CLASSES)

RATE CLASS	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	Jun 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	TOTAL
GS-1	371,291	383,987	327,166	267,296	224,329	210,626	207,982	199,256	206,245	201,357	246,048	299,971	3,145,553
GS-100	1,003,372	1,043,550	880,687	704,398	577,521	530,179	519,520	496,660	514,760	510,705	647,154	807,908	8,236,413
GS-220	533,980	554,987	471,837	381,603	314,527	287,269	280,638	268,000	277,918	278,367	354,237	441,411	4,444,772
GS-600	139,847	141,871	126,565	112,359	98,996	93,430	92,213	88,463	91,561	90,720	105,602	122,342	1,303,968
GS-1.2K	1,040,100	1,032,368	976,477	961,174	910,536	883,813	870,559	837,402	867,439	855,071	919,554	992,470	11,146,964
GS-6K	2,590,486	2,563,798	2,443,055	2,421,175	2,310,368	2,248,676	2,212,198	2,131,638	2,212,450	2,179,791	2,324,231	2,489,242	28,127,107
GS-25K	1,015,463	1,006,194	951,248	937,789	896,213	868,981	854,206	828,352	864,930	848,568	912,193	981,952	10,966,089
GS-60K	583,611	574,081	547,350	547,575	527,215	521,898	515,093	496,202	512,564	502,600	530,451	561,372	6,420,012
GS-120K	807,999	739,299	816,999	788,399	800,199	768,099	752,099	775,699	744,399	749,699	792,899	780,599	9,316,392
GS-250K	2,404,810	2,061,210	2,423,810	2,154,380	1,992,710	1,928,110	1,913,910	2,061,410	1,943,810	2,002,010	2,097,810	2,139,010	25,122,990
GS-1250K	991,600	562,400	1,007,200	814,000	710,100	390,300	455,900	524,400	493,800	1,040,100	636,800	887,900	8,514,500
Gas Lighting (GL)	3,169	3,169	3,169	3,169	3,169	3,169	3,169	3,169	3,169	3,169	3,169	3,169	38,033
Natural Gas Vehicles (NGV)	0	0	0	0	0	0	0	0	0	0	0	0	0
Load Enhancement Service (LES)	482,800	589,100	599,100	637,900	633,900	592,000	606,900	611,100	619,500	628,800	565,400	532,100	7,098,600
Contract Demand Service (KDS)	997,500	798,000	1,102,000	50,860	26,780	22,440	26,240	0	0	872,500	798,000	798,000	5,492,320
TOTAL	12,966,029	12,054,013	12,676,666	10,782,078	10,026,562	9,348,990	9,310,629	9,321,751	9,352,546	10,763,456	10,933,548	11,837,447	129,373,714

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FLORIDA CITY GAS
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CALCULATION OF THE PROJECTED TEST YEAR
REVENUE
(CURRENT RATES - CURRENT RATE CLASSES)

RATE CLASS	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	Jun 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	TOTAL
GS-1	$874,014	$892,339	$815,531	$735,032	$676,885	$658,346	$654,396	$643,072	$652,086	$645,911	$705,257	$776,506	$8,729,375
GS-100	$1,927,507	$1,984,658	$1,770,759	$1,542,046	$1,378,460	$1,317,051	$1,303,363	$1,275,443	$1,299,343	$1,295,614	$1,471,594	$1,678,694	$18,244,533
GS-220	$900,600	$929,420	$823,118	$709,633	$625,512	$591,391	$583,419	$568,290	$581,113	$582,635	$679,186	$789,522	$8,363,841
GS-600	$164,592	$166,817	$150,986	$136,532	$122,916	$117,610	$116,569	$112,990	$116,075	$115,017	$129,929	$146,949	$1,596,983
GS-1.2K	$863,819	$859,512	$816,916	$804,932	$765,734	$746,091	$735,590	$711,144	$734,266	$723,973	$774,551	$830,947	$9,367,475
GS-6K	$1,533,094	$1,522,951	$1,459,521	$1,447,088	$1,385,781	$1,351,053	$1,327,987	$1,286,371	$1,335,852	$1,315,902	$1,398,741	$1,491,569	$16,855,909
GS-25K	$508,460	$505,886	$478,347	$470,688	$449,948	$435,786	$427,683	$418,618	$439,624	$432,539	$465,367	$501,140	$5,534,087
GS-60K	$260,897	$258,010	$246,082	$245,608	$236,890	$236,723	$233,532	$225,823	$232,816	$227,998	$240,969	$254,128	$2,899,477
GS-120K	$214,861	$198,890	$217,843	$213,896	$215,849	$206,889	$203,166	$207,579	$202,963	$200,118	$213,034	$210,169	$2,505,258
GS-250K	$576,446	$507,889	$581,955	$526,375	$488,774	$479,339	$472,566	$505,368	$480,229	$482,120	$508,491	$472,741	$6,082,292
GS-1250K	$174,755	$121,306	$179,419	$132,013	$118,412	$76,546	$83,316	$91,862	$89,650	$163,544	$136,061	$165,018	$1,531,902
Gas Lighting (GL)	$4,299	$4,299	$4,299	$4,299	$4,299	$4,299	$4,299	$4,299	$4,299	$4,299	$4,299	$4,299	$51,588
Natural Gas Vehicles (NGV)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Load Enhancement Service (LES)	$68,081	$81,076	$82,299	$86,847	$86,358	$81,236	$83,058	$83,572	$84,598	$85,735	$78,180	$74,108	$975,148
Contract Demand Service (KDS)	$30,325	$24,340	$33,460	$1,926	$1,203	$1,073	$1,187	$400	$400	$26,575	$24,340	$24,340	$169,570
Miscellaneous and Other Revenues	$762,334	($337,689)	$377,103	$15,299	$276,806	$213,723	$393,255	$548,227	$296,707	$688,168	$771,492	$777,039	$4,782,464
TOTAL	$8,864,082	$7,719,705	$8,037,639	$7,072,214	$6,833,828	$6,517,158	$6,623,386	$6,683,056	$6,550,021	$6,990,150	$7,601,492	$8,197,169	$87,689,900

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CALCULATION OF THE PROJECTED TEST YEAR
NUMBER OF BILLS
(CURRENT RATES - PROPOSED RATE CLASSES)

RATE CLASS	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	Jun 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	TOTAL
RS-1	33,957	33,957	33,957	33,957	33,957	33,957	33,957	33,957	33,957	33,957	33,957	33,957	407,484
RS-100	66,052	66,052	66,052	66,052	66,052	66,052	66,052	66,052	66,052	66,052	66,052	66,052	792,624
RS-600	946	946	946	946	946	946	946	946	946	946	946	946	11,352
GS-1	4,952	4,952	4,952	4,952	4,952	4,952	4,952	4,952	4,952	4,952	4,952	4,952	59,424
GS-6K	2,348	2,348	2,348	2,348	2,348	2,348	2,348	2,348	2,348	2,348	2,348	2,348	28,176
GS-25K	385	385	385	385	385	385	385	385	385	385	385	385	4,620
GS-120K	101	101	101	101	101	101	101	101	101	101	101	101	1,212
GS-1250K	4	4	4	4	4	4	4	4	4	4	4	4	48
Gas Lighting (GL)	328	328	328	328	328	328	328	328	328	328	328	328	3,936
Natural Gas Vehicles (NGV)	0	0	0	0	0	0	0	0	0	0	0	0	0
Load Enhancement Service (LES)	3	3	3	3	3	3	3	3	3	3	3	3	36
Contract Demand Service (KDS)	1	1	1	1	1	1	1	1	1	1	1	1	12
TOTAL	109,077	109,077	109,077	109,077	109,077	109,077	109,077	109,077	109,077	109,077	109,077	109,077	1,308,924

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FLORIDA CITY GAS
DOCKET NO. 20170179-GU
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CALCULATION OF THE PROJECTED TEST YEAR
CONSUMPTION IN THERMS
(CURRENT RATES - PROPOSED RATE CLASSES)

RATE CLASS	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	Jun 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	TOTAL
RS-1	348,562	348,562	348,562	348,562	348,562	348,562	348,562	348,562	348,562	348,562	348,562	348,562	4,182,747
RS-100	1,495,331	1,495,331	1,495,331	1,495,331	1,495,331	1,495,331	1,495,331	1,495,331	1,495,331	1,495,331	1,495,331	1,495,331	17,943,968
RS-600	93,463	93,463	93,463	93,463	93,463	93,463	93,463	93,463	93,463	93,463	93,463	93,463	1,121,560
GS-1	1,151,234	1,151,234	1,151,234	1,151,234	1,151,234	1,151,234	1,151,234	1,151,234	1,151,234	1,151,234	1,151,234	1,151,234	13,814,805
GS-6K	2,590,486	2,590,486	2,590,486	2,590,486	2,590,486	2,590,486	2,590,486	2,590,486	2,590,486	2,590,486	2,590,486	2,590,486	31,085,831
GS-25K	1,599,074	1,599,074	1,599,074	1,599,074	1,599,074	1,599,074	1,599,074	1,599,074	1,599,074	1,599,074	1,599,074	1,599,074	19,188,892
GS-120K	3,212,809	3,212,809	3,212,809	3,212,809	3,212,809	3,212,809	3,212,809	3,212,809	3,212,809	3,212,809	3,212,809	3,212,809	38,553,712
GS-1250K	991,600	991,600	991,600	991,600	991,600	991,600	991,600	991,600	991,600	991,600	991,600	991,600	11,899,200
Gas Lighting (GL)	3,169	3,169	3,169	3,169	3,169	3,169	3,169	3,169	3,169	3,169	3,169	3,169	38,033
Natural Gas Vehicles (NGV)	0	0	0	0	0	0	0	0	0	0	0	0	0
Load Enhancement Service (LES)	482,800	482,800	482,800	482,800	482,800	482,800	482,800	482,800	482,800	482,800	482,800	482,800	5,793,600
Contract Demand Service (KDS)	997,500	997,500	997,500	997,500	997,500	997,500	997,500	997,500	997,500	997,500	997,500	997,500	11,970,000
TOTAL	12,966,029	12,966,029	12,966,029	12,966,029	12,966,029	12,966,029	12,966,029	12,966,029	12,966,029	12,966,029	12,966,029	12,966,029	155,592,349

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FLORIDA CITY GAS
DOCKET NO. 20170179-GU
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CALCULATION OF THE PROJECTED TEST YEAR
REVENUE
(CURRENT RATES - PROPOSED RATE CLASSES)

RATE CLASS	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	Jun 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	TOTAL
RS-1	$837,445	$856,255	$780,344	$699,282	$641,980	$623,420	$619,938	$609,476	$617,611	$612,200	$670,438	$740,691	$8,309,080
RS-100	$2,771,727	$2,857,947	$2,540,478	$2,199,378	$1,954,137	$1,860,092	$1,839,054	$1,797,346	$1,832,821	$1,831,025	$2,100,125	$2,414,007	$25,998,137
RS-600	$115,400	$119,288	$103,207	$85,706	$72,062	$67,832	$67,472	$65,408	$67,497	$67,245	$81,408	$97,604	$1,010,129
GS-1	$1,005,961	$999,256	$953,282	$943,810	$901,328	$879,146	$866,873	$838,709	$864,956	$852,681	$908,546	$970,315	$10,984,861
GS-6K	$1,533,094	$1,522,951	$1,459,521	$1,447,088	$1,385,781	$1,351,053	$1,327,987	$1,286,371	$1,335,852	$1,315,902	$1,398,741	$1,491,569	$16,855,909
GS-25K	$769,356	$763,897	$724,429	$716,295	$686,838	$672,509	$661,215	$644,441	$672,440	$660,538	$706,336	$755,268	$8,433,564
GS-120K	$791,306	$706,779	$799,799	$740,272	$704,622	$686,228	$675,732	$712,946	$683,192	$682,238	$721,525	$682,910	$8,587,550
GS-1250K	$174,755	$121,306	$179,419	$132,013	$118,412	$76,546	$83,316	$91,862	$89,650	$163,544	$136,061	$165,018	$1,531,902
Gas Lighting (GL)	$4,299	$4,299	$4,299	$4,299	$4,299	$4,299	$4,299	$4,299	$4,299	$4,299	$4,299	$4,299	$51,588
Natural Gas Vehicles (NGV)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Load Enhancement Service (LES)	$68,081	$81,076	$82,299	$86,847	$86,358	$81,236	$83,058	$83,572	$84,598	$85,735	$78,180	$74,108	$975,148
Contract Demand Service (KDS)	$30,325	$24,340	$33,460	$1,926	$1,203	$1,073	$1,187	$400	$400	$26,575	$24,340	$24,340	$169,570
Miscellaneous and Other Revenues	$762,334	($337,689)	$377,103	$15,299	$276,806	$213,723	$393,255	$548,227	$296,707	$688,168	$771,492	$777,039	$4,782,464
TOTAL	$8,864,082	$7,719,705	$8,037,639	$7,072,214	$6,833,828	$6,517,158	$6,623,386	$6,683,056	$6,550,021	$6,990,150	$7,601,492	$8,197,169	$87,689,900

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FLORIDA CITY GAS
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CALCULATION OF THE PROJECTED TEST YEAR
REVENUE
(PROPOSED RATES - PROPOSED RATE CLASSES)

RATE CLASS	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	Jun 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	TOTAL
RS-1	$964,828	$983,264	$908,648	$828,981	$772,627	$754,332	$750,829	$740,483	$748,390	$743,030	$800,151	$869,043	$9,864,606
RS-100	$2,975,075	$3,056,032	$2,761,193	$2,444,566	$2,217,227	$2,130,167	$2,110,849	$2,072,642	$2,106,199	$2,105,143	$2,355,726	$2,647,723	$28,982,544
RS-600	$116,935	$120,489	$106,167	$90,584	$78,381	$74,531	$74,216	$72,420	$74,324	$74,192	$86,945	$101,486	$1,070,670
GS-1	$1,151,544	$1,144,253	$1,094,084	$1,083,807	$1,037,472	$1,013,229	$999,935	$969,050	$997,881	$984,594	$1,045,537	$1,113,177	$12,634,563
GS-6K	$1,809,216	$1,796,393	$1,720,706	$1,706,030	$1,633,460	$1,592,441	$1,565,642	$1,515,819	$1,573,622	$1,550,349	$1,647,935	$1,757,609	$19,869,222
GS-25K	$850,889	$844,725	$802,210	$793,662	$762,036	$746,500	$734,403	$716,094	$746,344	$733,461	$782,666	$835,345	$9,348,335
GS-120K	$1,298,338	$1,156,255	$1,310,703	$1,207,930	$1,151,034	$1,119,283	$1,104,667	$1,165,809	$1,115,327	$1,123,281	$1,183,251	$1,148,818	$14,084,696
GS-1250K	$267,815	$198,738	$273,048	$194,740	$177,354	$123,844	$133,003	$144,043	$140,717	$234,504	$216,202	$254,302	$2,358,312
Gas Lighting (GL)	$26,045	$26,045	$26,045	$26,045	$26,045	$26,045	$26,045	$26,045	$26,045	$26,045	$26,045	$26,045	$312,541
Natural Gas Vehicles (NGV)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Load Enhancement Service (LES)	$93,142	$110,008	$111,594	$117,362	$116,728	$110,080	$112,444	$113,110	$114,443	$115,918	$106,247	$100,964	$1,322,038
Contract Demand Service (KDS)	$30,325	$24,340	$33,460	$1,926	$1,203	$1,073	$1,187	$400	$400	$26,575	$24,340	$24,340	$169,570
Miscellaneous and Other Revenues	$762,334	($337,689)	$377,103	$15,299	$276,806	$213,723	$393,255	$548,227	$296,707	$688,168	$771,492	$777,039	$4,782,464
TOTAL	$10,346,485	$9,122,853	$9,524,962	$8,510,931	$8,250,373	$7,905,248	$8,006,475	$8,084,142	$7,940,400	$8,405,260	$9,046,539	$9,655,891	$104,799,559

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HEATING DEGREE DAYS BY GEOGRAPHIC REGION
10 YEAR AVERAGE - JULY 1, 2007 through JUNE 30, 2017

BREVARD DIVISION
MELBOURNE INTERNATIONAL AIRPORT

	Base Temperature 65°F			Base Temperature 80°F		
	Historic Billing Cycle Average Base Year + 1 2017	Projected Billing Cycle Average Test Year 2018	2007-2017 Calendar 10-Year Normal	Historic Billing Cycle Average Base Year + 1 2017	Projected Billing Cycle Average Test Year 2018	2007-2017 Calendar 10-Year Normal
January	127	125	162	496	492	568
February	132	139	104	504	529	443
March	87	87	54	422	423	372
April	24	23	4	288	284	196
May	2	1	0	148	147	87
June	0	0	0	49	48	26
July	0	0	0	22	22	16
August	0	0	0	9	9	5
September	0	0	0	9	9	21
October	1	1	7	55	55	125
November	20	20	40	220	220	330
December	61	61	86	375	375	421

PORT ST. LUCIE DIVISION
VERO BEACH INTERNATIONAL AIRPORT

	Base Temperature 65°F			Base Temperature 80°F		
	Historic Billing Cycle Average Base Year + 1 2017	Projected Billing Cycle Average Test Year 2018	2007-2017 Calendar 10-Year Normal	Historic Billing Cycle Average Base Year + 1 2017	Projected Billing Cycle Average Test Year 2018	2007-2017 Calendar 10-Year Normal
January	111	108	150	502	498	550
February	123	129	94	470	488	430
March	80	80	51	390	390	370
April	33	34	6	274	284	202
May	4	3	0	149	139	100
June	0	0	0	53	53	27
July	0	0	0	24	25	21
August	0	0	0	11	10	5
September	0	0	0	15	15	28
October	1	1	7	80	80	125
November	15	15	40	238	238	311
December	52	52	86	353	353	404

MIAMI DIVISION
MIAMI INTERNATIONAL AIRPORT

	Base Temperature 65°F			Base Temperature 80°F		
	Historic Billing Cycle Average Base Year + 1 2017	Projected Billing Cycle Average Test Year 2018	2007-2017 Calendar 10-Year Normal	Historic Billing Cycle Average Base Year + 1 2017	Projected Billing Cycle Average Test Year 2018	2007-2017 Calendar 10-Year Normal
January	41	40	51	292	289	348
February	36	38	27	306	322	267
March	22	22	9	259	258	224
April	2	2	0	160	157	91
May	0	0	0	66	66	28
June	0	0	0	12	12	3
July	0	0	0	2	2	3
August	0	0	0	1	1	0
September	0	0	0	0	0	4
October	0	0	0	12	12	40
November	1	1	3	100	100	180
December	11	11	24	207	207	239

USAGE PER CUSTOMER

COMPARISON OF HISTORICAL USAGE TO PROJECTED TEST YEAR FORECASTS

	Miami Annual Usage (Therms/Customer)		Brevard Annual Usage (Therms/Customer)		PSL Annual Usage (Therms/Customer)	
	Residential	Commercial [1],[3]	Residential	Commercial [1],[4]	Residential [2]	Commercial [1],[5]
2004	172.4	7,907.0	225.4	6,735.9	173.5	8,914.6
2005	172.2	9,127.2	231.1	7,031.8	184.5	8,304.8
2006	162.7	8,405.4	207.8	6,566.7	168.5	8,344.7
2007	158.8	7,989.3	187.5	6,077.6	235.9	8,015.6
2008	158.5	7,967.6	190.8	6,246.7	167.8	7,475.0
2009	154.8	7,534.8	193.4	6,382.1	175.1	7,605.3
2010	161.5	7,625.5	252.9	6,673.2	223.2	7,915.1
2011	151.7	7,525.7	201.4	6,147.4	173.8	7,429.8
2012	151.5	7,485.5	168.9	5,952.9	165.3	7,121.3
2013	149.9	7,516.6	177.2	6,058.1	167.6	7,101.7
2014	147.3	7,632.8	181.2	6,270.6	166.9	7,070.0
2015	144.1	7,792.9	173.4	6,534.4	158.1	7,304.8
2016	146.0	7,886.0	168.8	6,315.0	156.7	7,330.5
2018 Projected Test Year [6]	137.1	8,016.8	177.9	6,238.0	162.2	7,299.8

Notes:

[1] Represents the average annual usage for all commercial customers within the following tariff classes: GS-1, GS-100, GS-220, GS-600, GS-1.2K, GS-6K, GS-25K, GS-60K.

[2] Forecasted test year is based on regression data back to January 2008.

[3] Forecasted test year is based on regression data back to October 2008.

[4] Forecasted test year is based on regression data back to October 2008.

[5] Forecasted test year is based on regression data back to January 2009.

[6] Therm/customer factor based on a 2007-2016 10 Year normal heating degree day distribution.

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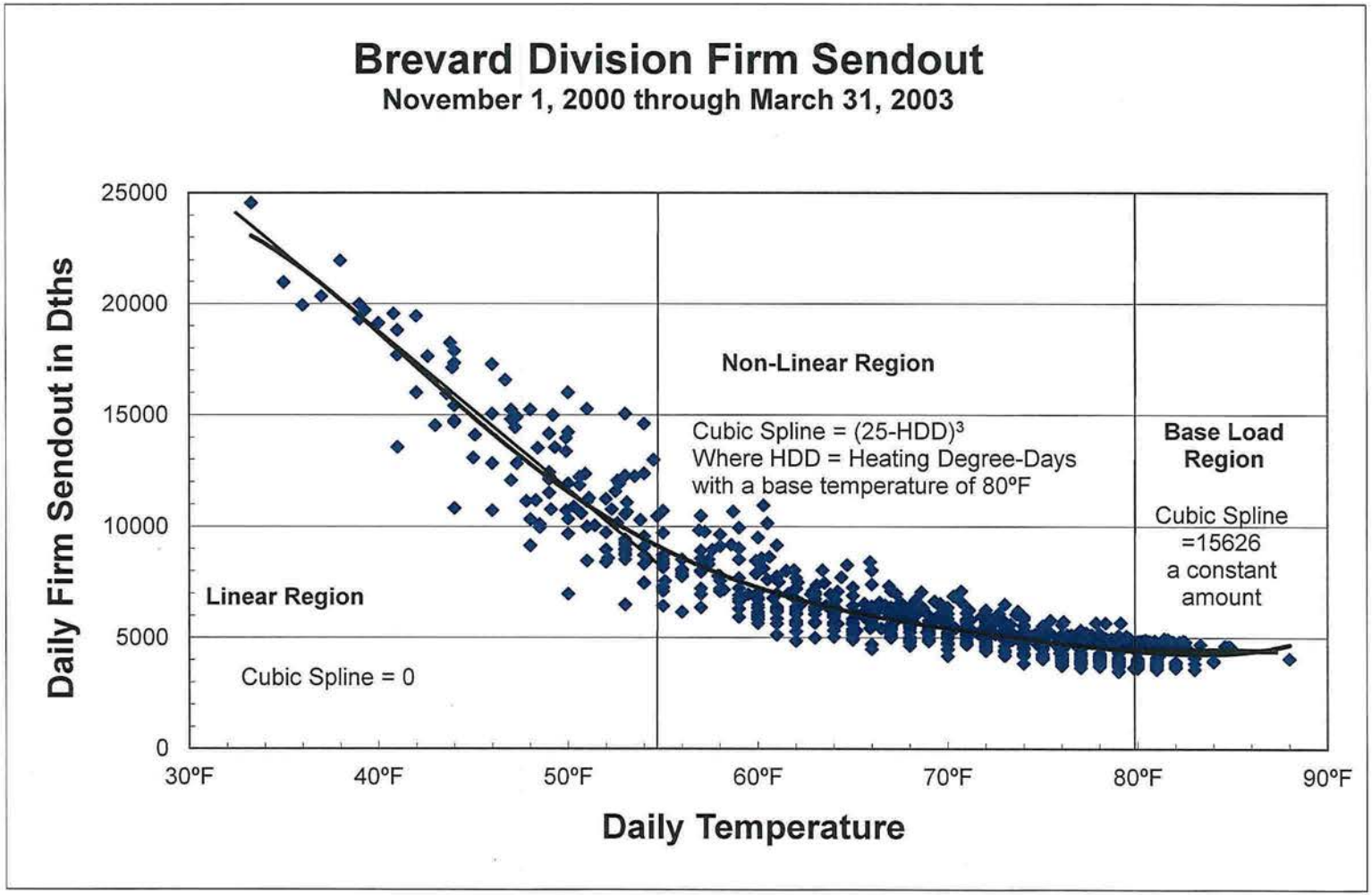
DEMAND CHARGE QUANTITIES

CURRENT RATE CLASS	Demand Charge Quantity Therms
GS-120k	46,247
GS-250k	126,100
GS-1,250k	172,721
LES	26,155
TOTAL	371,223

CURRENT RATE CLASS	Demand Charge Quantity Therms
GS-120k	172,347
GS-1,250k	172,721
LES	26,155
TOTAL	371,223

Example of Non- Linear Demand and the Cubic Spline Method



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ALLOCATION OF THE INTERIM RATE RELIEF

RATE SCHEDULE	BILLS	THERM SALES	CUSTOMER CHARGE	SAFE	ENERGY CHARGE	TOTAL (4+5+6)	DOLLAR INCREASE	% INCREASE	INCREASE $ Per Therm
RS-1	320,481	2,047,031	$2,563,848	$226,423	$1,150,698	$3,940,968	$338,919	8.60%	$0.16557
RS-100	601,645	7,519,951	$5,715,628	$425,040	$3,929,024	$10,069,691	$865,981	8.60%	$0.11516
RS-220	266,061	5,465,062	$2,926,671	$187,614	$2,706,900	$5,821,185	$500,615	8.60%	$0.09160
RS-600	9,805	481,723	$117,660	$6,893	$210,335	$334,888	$28,800	8.60%	$0.05979
RS-1.2K	1,794	191,309	$26,910	$1,259	$60,673	$88,843	$7,640	8.60%	$0.03994
RS-6K	15	15,405	$450	$17	$4,234	$4,701	$404	8.60%	$0.02625
GAS LIGHTING	2,373	14,854	$0	$0	$8,843	$8,843	$761	8.60%	$0.05120
GS-1	320,481	2,047,031	$2,563,848	$5,390	$1,150,698	$3,719,936	$319,910	8.60%	$0.15628
GS-100	601,645	7,519,951	$5,715,628	$2,241	$3,929,024	$9,646,893	$829,621	8.60%	$0.11032
GS-220	266,061	5,465,062	$2,926,671	$3,668	$2,706,900	$5,637,239	$484,796	8.60%	$0.08871
GS-600	9,805	481,723	$117,660	$4,307	$210,335	$332,301	$28,577	8.60%	$0.05932
GS-1.2K	1,794	191,309	$26,910	$24,167	$60,673	$111,750	$9,610	8.60%	$0.05024
GS-6K	15	15,405	$450	$37,457	$4,234	$42,142	$3,624	8.60%	$0.23526
GS-25K	3,700	10,500,750	$296,000	$5,052	$2,900,097	$3,201,149	$275,295	8.60%	$0.02622
GS-60K	866	7,093,610	$129,900	$1,114	$1,949,111	$2,080,125	$178,888	8.60%	$0.02522
GS-120K	507	8,079,386	$126,750	$517	$1,610,247	$1,737,514	$149,424	8.60%	$0.01849
GS-250K	555	23,876,304	$166,500	$607	$4,681,307	$4,848,413	$416,958	8.60%	$0.01746
GS-1,250K	98	20,598,129	$49,000	$66	$2,995,329	$3,044,395	$261,814	8.60%	$0.01271
NATURAL GAS VEHICLES	0	0	$0	$0	$0	$0	$0	0.00%	$0.00000
CONTRACT DEMAND	156	0	$62,400	$0	$187,439	$249,839	$0	0.00%	$0.00000
TOTAL	2,407,857	101,603,993	23,532,883	931,833	30,456,101	54,920,816	4,701,638	8.56%	$0.04627

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Average Meter and Sevice Costs by Class

New Class	RS-1	RS-100		RS-600		GS-1					GS-6K	GS-25k		GS-120k		GS-1,250k	GS-11M	GS-25M
Old Class	GS-1	GS-100	GS-220	GS-600	GS-1200	GS-1	GS-100	GS-220	GS-600	GS-1200	GS-6k	GS-25k	GS-60k	GS-120k	GS-250k	GS-1,250k	GS-11M	GS-25M
SERVICE LINE:																		
PIPE AND PIPING	$567	$1,243	$1,243	$5,307	$5,307	$348	$348	$348	$348	$348	$1,644	$6,190	$6,190	$12,396	$12,396	$31,043	$64,569	$140,850
METER:																		
Meter Only	$131	$131	$135	$173	$198	$355	$355	$355	$355	$355	$591	$969	$1,482	$2,958	$4,146	$7,127	$20,407	$40,631
ERT	$0	$0	$0	$2	$2	$27	$27	$27	$27	$27	$59	$92	$92	$92	$92	$92		
AMR	$0	$0	$0	$0	$0	$5	$5	$5	$5	$5	$7	$51	$188	$711	$1,664	$1,778	$3,200	$3,200
Press Corr Cost	$0	$0	$0	$0	$0	$71	$71	$71	$71	$71	$193	$735	$1,239	$1,373	$1,404	$1,404	$1,404	$1,404
Regulator	$0	$0	$0	$6	$7	$101	$101	$101	$101	$101	$231	$447	$672	$1,053	$1,197	$2,318	$5,000	$6,000
MSA/Ancillary Piping	$87	$87	$92	$116	$124	$196	$196	$196	$196	$196	$281	$370	$461	$879	$1,436	$1,622	$3,000	$5,000
Total Labor Cost	$34	$34	$34	$36	$38	$133	$133	$133	$133	$133	$266	$870	$1,780	$3,914	$5,740	$6,444	$9,000	$10,000
Overhead	$34	$34	$35	$45	$50	$120	$120	$120	$120	$120	$220	$477	$798	$1,482	$2,117	$2,806	$5,671	$8,954
Total Meter Set	**$285**	**$286**	**$296**	**$378**	**$420**	**$1,008**	**$1,008**	**$1,008**	**$1,008**	**$1,008**	**$1,848**	**$4,011**	**$6,712**	**$12,462**	**$17,796**	**$23,591**	**$47,682**	**$75,188**
TOTAL	$852	$1,529	$1,539	$5,685	$5,727	$1,356	$1,356	$1,356	$1,356	$1,356	$3,492	$10,201	$12,902	$24,858	$30,192	$54,634	$112,251	$216,038

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Derivation of Revenue Deficiency by Class

	SALES & TRANSPORTATION SERVICES:												
	RS-1	RS-100	RS-600	GS-1	GS-6k	GS-25k	GS-120k	GS-1250k	GS-11M	GS-25M	GAS LIGHTING	NATURAL GAS VEHICLES	CONTRACT DEMAND	THIRD PARTY SUPPLIER	TOTAL SALES & TRANSPORTATION
CUSTOMER COSTS	$ 5,660,067	$ 13,116,136	$ 220,819	$ 2,164,226	$ 1,390,578	$ 612,686	$ 397,805	$ 56,822	$ -	$ -	$ 40,049	$ -	$ 44,983	$ 265,021	$ 23,969,193
CAPACITY COSTS	$ 1,075,778	$ 4,603,203	$ 287,366	$ 3,899,952	$ 8,815,047	$ 5,444,930	$ 10,102,784	$ 2,961,178	$ -	$ -	$ 11,324	$ -	$ 448,471	$ -	$ 37,650,033
COMMODITY COSTS	$ 43,704	$ 185,313	$ 11,625	$ 187,454	$ 425,816	$ 263,208	$ 521,378	$ 236,367	$ -	$ -	$ 576	$ -	$ 40,165	$ -	$ 1,915,606
REVENUE COSTS	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL	$ 6,779,548	$ 17,904,652	$ 519,810	$ 6,251,632	$ 10,631,442	$ 6,320,824	$ 11,021,967	$ 3,254,367	$ -	$ -	$ 51,949	$ -	$ 533,619	$ 265,021	$ 63,534,831
less: REVENUE AT PI (in the projected test year)	$ 6,437,859	$ 17,363,379	$ 506,289	$ 5,569,921	$ 9,043,340	$ 5,428,892	$ 6,853,611	$ 2,392,863			$ 20,966		$ 531,283	$ 262,518	$ 54,410,922
less: REVENUE ADJU	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
equals: REVENUE AT	$ 6,437,859	$ 17,363,379	$ 506,289	$ 5,569,921	$ 9,043,340	$ 5,428,892	$ 6,853,611	$ 2,392,863	$ -	$ -	$ 20,966	$ -	$ 531,283	$ 262,518	$ 54,410,922
equals: GAS SALES F	$ 341,689	$ 541,273	$ 13,520	$ 681,711	$ 1,588,102	$ 891,932	$ 4,168,357	$ 861,504	$ -	$ -	$ 30,982	$ -	$ 2,336	$ 2,503	$ 9,123,909
plus: DEFICIENCY DUE TO REVENUE EXPANSION															
0.50%	$ 2,807	$ 4,447	$ 111	$ 5,601	$ 13,048	$ 7,328	$ 34,247	$ 7,078	$ -	$ -	$ 255	$ -	$ 19	$ 21	$ 74,962
0.4233%	$ 2,400	$ 3,800	$ 100	$ 4,700	$ 11,000	$ 6,200	$ 29,000	$ 6,000	$ -	$ -	$ 200	$ -	$ -	$ -	$ 63,400
5.50%	$ 30,590	$ 48,460	$ 1,210	$ 61,040	$ 142,200	$ 79,870	$ 373,240	$ 77,140	$ -	$ -	$ 2,780	$ -	$ 210	$ 230	$ 816,970
35.00%	$ 184,000	$ 291,400	$ 7,300	$ 367,100	$ 855,200	$ 480,300	$ 2,244,500	$ 463,900	$ -	$ -	$ 16,700	$ -	$ 1,300	$ 1,400	$ 4,913,100
plus: DEFICIENCY IN	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
equals: TOTAL REVE	$ 561,486	$ 889,380	$ 22,241	$ 1,120,152	$ 2,609,550	$ 1,465,630	$ 6,849,344	$ 1,415,622	$ -	$ -	$ 50,917	$ -	$ 3,865	$ 4,154	$ 14,992,341
UNIT COSTS:															
Customer	$ 15.08	$ 17.26	$ 19.80	$ 42.60	$ 60.69	$ 161.34	$ 532.19	$ 970.70			$ 20.15		$ 3,775.77		$ 18.24
Capacity	$ 0.40351	$ 0.39473	$ 0.39024	$ 0.37140	$ 0.39033	$ 0.38579	$ 0.47565	$ 0.27216			$ 0.58957		$ 0.02259		$ 0.26167
Commodity	$ 0.01639	$ 0.01589	$ 0.01579	$ 0.01785	$ 0.01885	$ 0.01865	$ 0.02455	$ 0.02172			$ 0.02998		$ 0.00202		$ 0.01331

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BYPASS ANALYSIS

Total Mains Cost of System	$ 157,379,529

Customer Name & Location	(1) Customer Rate Class	(2) Customer MDQ in Dth	(3) Customer Annual Needs In Dth	(4) Distance to Bypass City Gas in feet	(5) Pipe Size Nominal Dia. (Inches)	(6) Estimated Cost Per Foot	(7) Estimated Cost of Bypass Pipleine (col 6X col 4)	(8) Estimated cost of Gate Station @ Interstate Pipleine	(9) Estimate of Total Facilities Cost to Bypass*	(10) Peak & avg (Monthly) Allocator	(11) Allocated Mains Cost	(12) Min Cost (Monthly) vs Bypass
Customer1	GS-1250k			10,800	4	$ 55.00	$ 594,000	$ 1,000,000	$ 1,594,000	1.69789%	$ 2,672,100	$ 1,594,000
Customer2	GS-1250k			300	4	$ 45.00	$ 13,500	$ 1,000,000	$ 1,013,500	3.49278%	$ 5,496,900	
Customer3	GS-1250k			Customer 2's by pass would serve this load							$ -	$ 1,013,500
Customer6	GS-250k			900	4	$ 45.00	$ 40,500	$ 1,000,000	$ 1,040,500	0.28155%	$ 443,100	$ -
Customer7	GS-250k			12,000	4	$ 45.00	$ 540,000	$ 1,000,000	$ 1,540,000	0.73365%	$ 1,154,600	$ -
Customer4	GS-1250k			16,500	4	$ 55.00	$ 907,500	$ 1,000,000	$ 1,907,500	1.74903%	$ 2,752,600	$ 1,907,500
Customer5	GS-250k			14,000	4	$ 55.00	$ 770,000	$ 1,000,000	$ 1,770,000	1.85903%	$ 2,925,700	$ 1,770,000
Customer8	GS-250k			250	4	$ 45.00	$ 11,250	$ 1,000,000	$ 1,011,250	0.96880%	$ 1,524,700	$ 1,011,250
Customer9	GS-250k			1,000	4	$ 45.00	$ 45,000	$ 1,000,000	$ 1,045,000	1.00285%	$ 1,578,300	$ 1,045,000
Subtotal				**24,000**			**$ 1,188,000**		**$ 5,188,000**		**$ 9,766,700**	**$ 2,607,500**
							$ -		$ -		$ -	$ -
							$ -		$ -		$ -	$ -
Customer10	KDS			253,440	8	$ 85.00	$ 21,542,400	$ 1,100,000	$ 22,642,400	6.45783%	$ 10,163,300	$ -
Subtotal				**253,440**			**$ 21,542,400**		**$ 22,642,400**		**$ 10,163,300**	**$ -**
Total				**277,440**			**$ 22,730,400**		**$ 27,830,400**		**$ 19,930,000**	**$ 2,607,500**

* Does not include Meter and Regulation Equipment at Customer site.

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Customer Charge Comparison

Florida City Gas						TECO - Peoples's Gas		Florida Public Utilities	
Current Rates		Proposed Rates		Customer Cost of Service		Current Rates		Current Rates	
Residential Service		**Residential Service**				**Residential Service**		**Residential Service**	
GS-1	$ 8.00	RS-1	$ 12.00	$	15.08	RS-1 (0 to 99 Thms)	$ 12.00	RS	$11.00
GS-100	$ 9.50	RS-100	$ 15.00	$	17.26	RS-2 (100 to 249 Thms)	$ 15.00		
GS-220	$ 11.00					RS-3 (250 tro1999 Thms)	$ 30.00		
GS-600	$ 12.00	RS-600	$ 20.00						
GS-1.2k	$ 15.00			$	19.80				
GS-6k	$ 30.00								
General Service		**General Service**				**General Service**		**General Service**	
GS-1	$ 8.00	GS-1	$ 25.00	$	42.60	SGS (0 to 1,999)	$ 25.00	GS-1 (0-600 Thms)	$20.00
GS-100	$ 9.50								
GS-220	$ 11.00								
GS-600	$ 12.00							GS-2 (600 Thms +)	$33.00
GS-1.2K	$ 15.00					GS-1 (2,000 to 9,999)	$ 35.00		
GS-6K	$ 30.00	GS-6K	$ 35.00	$	60.69	GS-2 (10,000 to 49,999)	$ 50.00		
GS-25K	$ 80.00	GS-25K	$ 150.00	$	161.34	GS-3 (50,000 to 249,999)	$150.00		
GS-60K	$150.00								
GS-120K	$250.00	GS-120K	$ 300.00	$	532.19				
GS-250K	$300.00					GS-4 (250,000 to 499,999)	$250.00	Large Volume Service	$90.00
GS-1,250K	$500.00	GS-1,250K	$ 500.00	$	970.70	GS-5 (500,000 and beyond)	$300.00		
		GS-11M	$1,000.00						
		GS-25M	$2,000.00						

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Calculation of Proposed Rates

	SALES & TRANSPORTATION SERVICES:														
	RS-1	RS-100	RS-600	GS-1	GS-6k	GS-25k	GS-120k	GS-1250k	GS-11M	GS-25M	GAS LIGHTING	NATURAL GAS VEHICLES	CONTRACT DEMAND	THIRD PARTY SUPPLIER	TOTAL SALES & TRANSPORTATION
PROPOSED TOTAL TARGET REVENUES	$ 7,210,626	$ 18,807,784	$ 550,722	$ 7,041,468	$ 11,981,069	$ 7,088,431	$ 12,514,667	$ 3,932,041			$ 74,237	$ -	$ 173,632	$ 266,633	$ 69,405,425
LESS: OTHER OPERATING REVENUE	$ 740,118	$ 1,564,482	$ 29,664	$ 266,912	$ 334,748	$ 178,092	$ 38,002	$ 9,895			$ 131	$ -	$ 2,034	$ -	$ 3,164,078
Less: Proposed Customer Charge Revenues															
Proposed Customer charges: SALES & TRANSPORTATION	$ 12.00	$ 15.00	$ 20.00	$ 25.00	$ 35.00	$ 150.00	$ 300.00	$ 500.00	$ 1,000.00	$ 2,000.00		$ 25.00	$ 500.00	$ 400.00	
TIMES: NUMBER OF BILLS: SALES & TRANSPORTATION	406,366	797,671	11,632	59,911	28,538	4,678	1,212	84	0	0	3,936	0	12	132	1,314,172
EQUALS: CUSTOMER CHARGE REVENUES	$ 4,876,392	$ 11,965,065	$ 232,640	$ 1,497,775	$ 998,830	$ 701,700	$ 363,600	$ 42,000	$ 0	$ 0	$ 0	$ 0	$ 6,000	$ 52,800	$ 20,736,802
Less: Proposed Demand Charge Revenues															
Proposed demand charges: SALES & TRANSPORTATION	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 5.75	$ 5.75	$ 5.75	$ 5.75	$ 0	$ 0	$ 0	$ 6.07	
TIMES: DCQ: SALES & TRANSPORTATION	-	-	-	-	-	-	206,816	238,651	-	-	-	-	-	33,807	479,275
EQUALS: DEMAND CHARGE REVENUES	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,189,194	$ 1,372,244	$ -	$ -	$ -	$ -	$ -	$ 205,167	$ 2,766,646
EQUALS: PER-THERM TARGET REVENUES	$ 1,594,116	$ 5,278,237	$ 288,418	$ 5,276,781	$ 10,647,491	$ 6,208,639	$ 10,923,870	$ 2,507,901	$ -	$ -	$ 74,105	$ -	$ 165,598	$ 8,665	$ 42,737,899
DIVIDED BY: NUMBER OF THERMS	2,886,825	12,240,769	767,899	12,382,178	28,127,107	17,386,101	34,439,382	15,613,100	-	-	38,033	-	5,492,320	-	143,881,394
EQUALS: PER-THERM RATES (Unrounded)	$ 0.552204	$ 0.431201	$ 0.375594	$ 0.426159	$ 0.378549	$ 0.357104	$ 0.317191	$ 0.160628	$ 0.080000	$ 0.040000	$ 1.948461	$ 0.426159		$ -	
PER-THERM RATES (Rounded)	$ 0.55220	$ 0.43120	$ 0.37559	$ 0.42616	$ 0.37855	$ 0.35710	$ 0.31719	$ 0.16063	$ 0.08000	$ 0.04000	$ 1.94846	$ 0.42616		$ -	
PER-THERM-RATE REVENUES (Rounded Rates)	$ 1,594,105	$ 5,278,219	$ 288,415	$ 5,276,789	$ 10,647,516	$ 6,208,577	$ 10,923,828	$ 2,507,932	$ -	$ -	$ 74,105	$ -	$ 165,593	$ -	$ 42,729,286
SUMMARY: PROPOSED TARIFF RATES															
CUSTOMER CHARGES	$ 12.00	$ 15.00	$ 20.00	$ 25.00	$ 35.00	$ 150.00	$ 300.00	$ 500.00	$ 1,000.00	$ 2,000.00	$ -	$ 25.00		$ 400.00	
DEMAND CHARGES	$ -	$ -	$ -	$ -	$ -	$ -	$ 5.75	$ 5.75	$ 5.75	$ 5.75	$ -	$ -		$ 6.07	
ENERGY CHARGES															
NON-GAS (CENTS PER THERM)	55.2204	43.1201	37.5594	42.6159	37.8549	35.7104	31.7191	16.0628	8.0000	4.0000	40.0000	42.6159		-	
PURCHASED GAS ADJUSTMENT	54.0000	54.0000	54.0000	54.0000	54.0000	54.0000	54.0000	54.0000	54.0000	54.0000	54.0000	54.0000		-	
TOTAL (INCLUDING PGA)	109.2204	97.1201	91.5594	96.6159	91.8549	89.7104	85.7191	70.0628	62.0000	58.0000	94.0000	96.6159		-	
SUMMARY: PRESENT TARIFF RATES															
CUSTOMER CHARGES															
RESIDENTIAL	$ 8.00	$ 9.86	$ 12.50												
COMMERCIAL AND INDUSTRIAL SALES				$ 14.07	$30.00	$ 93.21	$ 267.33	$500.00				$15.00			
DEMAND CHARGES NON-GAS (CENTS PER THERM)															
RESIDENTIAL											-				
COMMERCIAL AND INDUSTRIAL							28.9000	28.9000							
ENERGY CHARGES NON-GAS (CENTS PER THERM)															
RESIDENTIAL	56.2130	51.3242	39.8577								56.2130				
COMMERCIAL AND INDUSTRIAL				33.4308	27.4870	27.5660	21.4152	12.2250				23.2320			
PURCHASED GAS ADJUSTMENT	54.0000	54.0000	54.0000	54.0000	54.0000	54.0000	54.0000	54.0000	54.0000	54.0000	54.0000	54.0000	54.0000		
TOTAL (INCLUDING PGA)															
RESIDENTIAL	110.2130	105.3242	93.8577								110.2130				
COMMERCIAL AND INDUSTRIAL				87.4308	81.4870	81.5660	75.4152	66.2250	54.0000	54.0000		77.2320	56.3000		

SUMMARY: OTHER OPERATING REVENUE

PRESENT	REVENUE	PROPOSED	REVENUE
CONNECTION CHARGE	$50.00-$110.00	$695,821	$50.00-$200.00	$ 1,121,632
COLLECTION IN LIEU OF DISCONNECT CHARGE	$20.00	$263,406	$25.00-$32.00	$331,467
RECCONNECT CHARGE	$37.00-$80.00	$139,591	$40.00-$100.00	$150,523
BAD CHECKS	$25.00	$37,766	$25.00	$37,775
LATE PAYMENT CHARGES	$5.00 OR 1.5%	$1,107,835	$5.00 OR 1.5%	$1,107,835
DAMAGE BILLING		$192,297		$192,297
CHANGE OF ACCOUNT				
METER READ			$15.00-$22.00	$100,766
TEMPORARY DISCONNECT			$35.00-$45.00	$103,562
FAILED TRIP			$20.00	$18,220
TOTAL				

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