BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION
DOCKET NO. 130040-EI

IN RE: TAMPA ELECTRIC COMPANY'S
PETITION FOR AN INCREASE IN BASE RATES
AND MISCELLANEOUS SERVICE CHARGES

TECO
TAMPA ELECTRIC

COM 5
AFD 1
APA 1
ECO 10
ENG 1
GCL 1
IDM
TEL
CLK 1

DIRECT TESTIMONY AND EXHIBIT

OF

LORRAINE L. CIFUENTES

TECO
TAMPA ELECTRIC

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TABLE OF CONTENTS

PREPARED DIRECT TESTIMONY AND EXHIBIT

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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

PREPARED DIRECT TESTIMONY

OF

LORRAINE L. CIFUENTES

Q. Please state your name, business address, occupation and employer.

A. My name is Lorraine L. Cifuentes. My business address is 702 North Franklin Street, Tampa, Florida 33602. I am employed by Tampa Electric Company ("Tampa Electric" or "company") as Manager, Load Research and Forecasting in the Regulatory Affairs Department.

Q. Please provide a brief outline of your educational background and business experience.

A. In 1986, I received a Bachelor of Science degree in Management Information Systems from the University of South Florida. In 1992, I received a Masters of Business Administration degree from the University of Tampa. In October 1987, I joined Tampa Electric as a Generation Planning Technician, and I have held various positions within the areas of Generation Planning, Load Forecasting and Load Research. In October 2002, I was promoted to

Manager, Load Research and Forecasting. My present responsibilities include the management of Tampa Electric's customer, peak demand, energy sales and revenue forecasts, as well as management of Tampa Electric's load research program and other related activities.

Outside of Tampa Electric, I am also actively involved in several forecasting-related organizations. I am actively involved in the Electric Utilities Forecaster Forum ("EUFF"), which is an organization made up of electric utility forecasters from across the nation that meet twice a year to discuss forecasting issues and challenges. I have held the position of President of the EUFF since 2008. In addition, I am the chairperson for the Florida Reliability Coordinating Council Load Forecast Working Group and coordinate the review of Florida utilities' load forecasting methodologies and demand and energy forecasts that support the Peninsular Florida Load and Resource Plan and reliability assessments.

Q. What is the purpose of your direct testimony?

A. The purpose of my direct testimony is to describe Tampa

Electric's load forecasting process, describe the methodologies and assumptions and present the load forecast used in Tampa Electric's test year budget that supports its request for a base rate increase. Additionally, I will demonstrate how the forecasts are appropriate and reasonable based on the assumptions provided.

Q. Have you prepared an exhibit to support your direct testimony?

A. Yes. I am sponsoring Exhibit No. ____ (LLC-1) consisting of eleven documents, prepared under my direction and supervision. These consist of:

Document No. 1	List of Minimum Filing Requirement Schedules Sponsored Or Co-Sponsored By Lorraine L. Cifuentes
Document No. 2	Comparison of 2008 Forecasts Versus Current Forecast of Customer Growth And Energy sales
Document No. 3	Economic Assumptions Average Annual Growth Rate
Document No. 4	Billing Cycle Based Degree Days
Document No. 5	Customer Forecast
Document No. 6	Per-Customer Energy Consumption

Document No. 7	Retail Energy Sales
Document No. 8	Per-Customer Peak Demand
Document No. 9	Peak Demand
Document No. 10	Firm Peak Demand
Document No. 11	Firm Peak Load Factor

Q. Are you sponsoring any sections of Tampa Electric's Minimum Filing Requirements ("MFRs")?

A. Yes. I sponsor or co-sponsor the MFRs shown in Document No. 1 of my exhibit.

FORECAST RESULTS

Q. Please summarize your forecast results.

A. The forecasts presented in my direct testimony are the same forecasts I recently presented in Docket No. 120234-EI and reflect the recent growth trends in the company's service territory. The sales trends experienced by the company are consistent with the sales trends of other utilities in Florida and in the South Atlantic region.

As discussed below, the period of unusual uncertainty and economic disruption referred to by some as the "Great

Recession" appears to be over. The company expects customer growth to ramp up, to an average annual growth rate ("AAGR") of 1.5 percent over the next ten years (2013-2022); however, average customer use is projected to decline. Since 2007, per-customer consumption has declined at an AAGR of 1.7 percent and it is expected to decline at an AAGR of 0.3 percent over the next ten years. With 1.5 percent customer growth and 0.3 percent average per-customer use decline, the company expects retail energy sales to increase at an AAGR of 1.2 percent during the forecast horizon.

Q. Please explain the company's experience with revenues, load growth and customer growth since the last rate proceeding was filed in 2008.

A. The company's experience over the past five years has been anything but normal, at least compared to history. From 1994 to 2007, the number of customers served by the company grew at an annual average rate of 2.5 percent and average consumption per customer increased at an annual average rate of 0.2 percent, for an overall annual average increase of 2.7 percent in retail energy sales. During this period, the company's annual peak demand increased from 2,754 MW to 4,123 MW or by an average of

3.2 percent per year. The company's base revenues also grew an average annual rate of 2.9 percent or approximately $19 million a year.

The company began seeing the first hint that customer usage and load growth were changing in 2008, when the 2009 load forecast was prepared. At that time, the company started to see signs that the number of new customers connecting to the system was slowing and the average amount of energy used per customer was declining from its historical patterns. While the company reflected this slower growth in its 2009 load forecast, the company expected this slower growth to last only a short time before returning to historical levels. As it turns out, the unusual growth data and uncertainty initially identified in 2008 turned out to be the beginning of a trend experienced by utilities in Florida and around the country, namely slower customer growth and lower average usage per customer. Document No. 2 of my exhibit shows the trends in customer growth and retail energy sales compared to the projections from the company's last base rate proceeding and for the forecasts presented in my direct testimony.

Since 2007, customer growth increased at an average

annual rate of 0.6 percent, however, total retail energy sales declined by an average of 1.2 percent per year, which was alarming and unprecedented. As a result, a significant portion of the retail energy sales and base revenues projected in the company's last base rate proceeding never materialized. To illustrate this point, when the company looks back on the load forecast it prepared and filed in 2008 and applies the base rates approved by the Florida Public Service Commission ("Commission" or "FPSC") in the 2009 rate proceeding and compares these forecasted revenues to actual revenues, there is an estimated revenue shortfall of $50 million in 2009, increasing to a shortfall of $129 million by 2012.

On a projected basis for the year 2014, the 2008 load forecast with the 2009 base rates applied would produce revenues of $1.071 billion, which is $163 million greater than the $908 million in revenues forecasted for the current 2014 test year.

In short, customer growth and usage rates have changed from historical levels and the load growth the company expected in its last base rate proceeding never materialized. The current retail energy sales forecast of 18,370 GWH for the 2014 test year is 8 percent lower

than the 2009 test year projection of 19,993 GWH provided in the last base rate proceeding. In 2009, the Commission approved total base revenues for the company of $970 million including step increase revenues. However, since then the company's annual base revenues averaged about $900 million and have never exceeded $933 million. The company's forecasted base revenues for the 2014 test year are $908 million, or about $62 million less than the revenue approved in the company's last base rate proceeding.

Like the other utilities in Florida, the company has finally come to terms with the changing growth and usage patterns and the period of unusual uncertainty has passed. The company is now experiencing steady growth in customers, albeit at a slower rate, and expects customer and energy sales growth to continue improving over the next few years. The average annual growth rates over the forecast horizon for customers and energy sales are 1.5 percent and 1.2 percent, respectively. The process Tampa Electric uses to prepare its load forecast and the steps it has taken to ensure it is reasonable are discussed below in my direct testimony.

TAMPA ELECTRIC'S FORECASTING PROCESS

Q. Please describe Tampa Electric's load forecasting process.

A. Tampa Electric uses econometric models and statistically adjusted engineering ("SAE") models, which are integrated to develop projections of customer growth, energy consumption and peak demands. The econometric models measure past relationships between economic variables, such as population, employment and customer growth. The SAE models, which incorporate end-use structure into an econometric model, are used for projecting average per-customer consumption. These models have consistently been used by Tampa Electric for generation planning purposes and the modeling results have been submitted to the Commission for review and approval in past regulatory proceedings. MFR Schedule F-5, which I am co-sponsoring, provides a more detailed description of the forecasting process.

Q. Which assumptions were used in the base case analysis of customer growth?

A. The primary economic drivers for the customer forecast are Hillsborough County and Florida population estimates, service area households and Hillsborough County

employment. The population forecast is the starting point for developing the customer and energy projections. Both the University of Florida's Bureau of Economic and Business Research ("BEBR") and Moody's Analytics provide population projections. The population forecast is based upon the projections of BEBR in the short-term and is a blend of BEBR and Moody's Analytics for the long-term forecast. Moody's Analytics provides projections of employment by major sectors. Service area households and Hillsborough County employment assumptions are utilized in estimating non-residential customer growth. For example, an increase in the number of households results in a need for additional services, restaurants and retail establishments. Additionally, projections of employment in the construction sector are a good indicator of expected increases and decreases in local construction activity. Similarly, commercial and industrial employment growth is a good indicator of expected activity in their respective sectors. The ten-year historical and forecasted average annual growth rates for these economic indicators are shown in Document No. 3 of my exhibit.

Q. Which assumptions were used in the base case analysis of energy sales growth?

A. Customer growth and per-customer consumption growth are the primary drivers for growth in energy sales. The average per-customer consumption for each revenue class is based on the SAE modeling approach. The SAE models have three components. The first component includes assumptions of the long-term saturation and efficiency trends in end-use equipment. The second component captures changes in economic conditions, such as increases in real household income, changes in number of persons per household, the price of electricity and how these factors affect a residential customer's consumption level. A complete list of the critical economic assumptions used in developing these forecasts is shown in Document No. 3 of my exhibit. The third component captures the seasonality of energy consumption. Heating and cooling degree-day assumptions allocate the appropriate monthly weather impacts and are based on weather patterns over the past 20 years. Historical and projected degree days are shown in Document No. 4 of my exhibit. MFR Schedule F-7 and F-8 provide a description and the historical and projected values of each assumption used in the development of the 2014 test year retail energy sales.

Q. Which assumptions were used in the base case analysis of

peak demand growth?

A. Peak demand growth is affected by long-term appliance trends, economic conditions and weather conditions. The end-use and economic conditions are integrated into the peak demand model from the energy sales' forecast. The weather variables are heating and cooling degree days at the time of the peak and for the 24-hour period of the peak day and the day prior to the peak. Weather variables provide the seasonality to the monthly peaks. By incorporating both temperature variables, the model accounts for cold or heat buildup that contributes to determining the peak day. The temperature assumptions used are based on an analysis of 20 years of peak day temperatures. For the peak demand forecast, the design temperature at the time of winter and summer peaks is 31 and 92 degrees Fahrenheit, respectively.

Q. Does Tampa Electric assess the reasonableness of these base assumptions?

A. Yes. The base case economic assumptions have been evaluated based on a comparison of the data series' historical average annual growth rates to the projected average annual growth rates for the forecast period. In

addition, each economic data series is compared to an alternate source and evaluated for consistency. Moody's Analytics' projections for Florida employment by major sectors and Florida real household income are compared to the projections from the Office of Economic and Demographic Research, which is part of the Florida Legislature. The projections for Florida employment growth were consistent between the two sources; therefore, it is reasonable to conclude that Moody's Analytics' projections for Hillsborough County employment growth were also reasonable.

Q. Were the forecasts for population growth also evaluated for reasonableness?

A. Yes. County and state level projections are compared and evaluated for consistency. Moody's Analytics and BEBR's population forecasts were also compared and evaluated for consistency. A blend of the two sources was used and provides a reasonable population projection.

Q. Historically, what has been the accuracy of the company's retail energy sales forecasts?

A. Over the past ten years, the average accuracy of the

retail energy sales forecasts, excluding the phosphate sector (which varies significantly from year to year), is a 3.3 percent overstatement compared to actuals. Industry-wide forecasts of electricity consumption have been overstated due to the unprecedented depth and duration of the Great Recession. With the period of unusual uncertainty behind us now, accuracy levels should fall back to typical levels of within 1.0 percent. The current forecast is tracking actual sales quite well. The forecast (excluding phosphate sales), which was completed in June of 2012, is 0.6 percent above 2012 actual energy sales and year-to-date actual results through February. The results indicate that the forecast provides reasonable estimates for the 2014 test-year.

Q. Have Tampa Electric's forecasting models and assumptions used in developing the customer, demand and energy forecasts been reviewed for reasonableness?

A. Yes. Itron, Inc. ("Itron"), an industry leader that provides utility forecasting software and methodologies to more than 160 utilities and energy companies, reviewed Tampa Electric's forecasting models and assumptions. Itron concluded that the forecast models were theoretically sound with excellent model statistics and

modeling errors were reasonable and consistent with other utilities.

TAMPA ELECTRIC'S FORECASTED GROWTH

Q. What is Tampa Electric's customer base?

A. Tampa Electric's current customer base is shown in Document No. 5 of my exhibit. Tampa Electric's customer base averaged 684,235 retail accounts in 2012.

Q. What is Tampa Electric's projected customer growth?

A. Customer growth in 2012 was 1.2 percent, projections for 2013 and 2014 are 1.2 percent and 1.3 percent, respectively. Tampa Electric is projecting an average annual increase of 10,729 new customers over the next ten years (2013-2022). This average annual increase of 1.5 percent is slightly higher than the average annual growth rate of 1.4 percent during the past ten years (2003-2012), as reflected in Document No. 5 of my exhibit.

Q. How do Tampa Electric's projected customer growth rates compare with historical growth rates?

A. Customer growth rates are lower than those experienced prior to the recent recession; however, customer growth is considerably higher than it was in the recession period between 2007 and 2009. Customer growth was flat to declining during that recession period. Customer growth rates are currently back up to 1.2 percent.

Q. What is Tampa Electric's energy sales forecast?

A. The primary driver behind the increase in the energy sales forecast is customer growth. Offsetting some of the customer growth is the impact of per-customer consumption, which is expected to decrease at an average annual rate of 0.3 percent over the next ten years (2013-2022), as shown in Document No. 6 of my exhibit. Combining the customer growth and per-customer consumption, retail energy sales are expected to increase at an average annual rate of 1.2 percent over the next ten years (2013-2022). Historical and forecasted energy sales are shown in Document No. 7 of my exhibit.

Q. What are the primary drivers behind the projected decline in average usage?

A. The primary drivers are improvements in end-use

efficiency resulting from appliance and equipment replacement, new end-use standards (such as the new lighting standards that are expected to have significant impact on residential sales), economy-induced conservation and demand-side management ("DSM") program activity.

Q. How do the 2014 test year projections for retail energy sales compare to the same year's projections that were prepared and filed in Tampa Electric's 2008 petition to increase base rates?

A. Projections for retail energy sales for the current 2014 test year are approximately 17 percent lower than the projections for the year 2014 that were filed in the 2008 petition. The sudden reductions in customer growth, economy-induced conservation, business closures and improvements in appliance and lighting energy efficiencies are primarily responsible for the significant changes in energy consumption patterns across the electric industry.

Q. What is Tampa Electric's peak demand forecast?

A. Summer and winter peak usage per-customer are projected

to decline at an average annual rate of 0.4 percent and 0.3 percent, respectively. Document No. 8 of my exhibit shows historical and forecasted peak usage per-customer for summer and winter peaks. The increase in customers and the decrease in per-customer demand results in an average annual growth rate of 1.1 percent over the next ten years for both the winter and summer peaks, as shown in Document No. 9 of my exhibit. Summer and winter firm peak demands, which have been reduced by curtailable load such as load management and interruptible loads, are shown in Document No. 10 of my exhibit.

Q. Are conservation and demand-side management impacts accounted for in the energy sales and peak demand forecasts?

A. Yes. Tampa Electric develops energy and demand forecasts for each conservation and DSM program. The aggregated incremental energy savings and demand impact projections are then subtracted from the forecasts.

Q. Are the impacts of solar generation accounted for in the energy sales and peak demand forecasts?

A. Yes. The impacts of solar generation are included in

Tampa Electric's portfolio of conservation programs.

Q. Are electric vehicle impacts accounted for in the energy sales and peak demand forecasts?

A. No. Tampa Electric does not currently make long-term projections of the number of electric vehicle charging stations within its service area. The market for such devices is not sufficiently mature to accurately project such counts. Also, the recent change in Florida Statutes making public charging a non-utility service has just gone into effect and its impact on the number of charging stations is unknown. At this point, the impacts of electric-powered vehicles on Tampa Electric's demand and energy forecasts is not significant. The company will continue to monitor trends in this area and incorporate them into the forecast when there is more certainty as to the impacts on the company's loads.

Q. Has the forecast which you support in this proceeding been presented in prior filings with the Commission?

A. Yes. This forecast was recently reviewed and used by the Commission in Docket No. 120234-EI: Petition to Determine Need for Polk 2-5 Combined Cycle Conversion; Order No.

PSC-13-0014 issued on January 8, 2013.

My direct testimony in that docket and extensive discovery thoroughly vetted all relevant issues. The load forecasts were not rebutted and there were no disputes, which resulted in the stipulation of my direct testimony into the record.

Q. Has the company performed any sensitivity analyses on its load forecast?

A. Yes. The base case scenario was tested for sensitivity to varying economic conditions and customer growth rates. The high and low peak demand and energy scenarios represent an alternative to the company's base case outlook. The high scenario represents more optimistic economic conditions in the areas of customers, employment and income. The low band represents less optimistic scenarios in the same areas. Compared to the base case, the expected customer and economic growth rates are 0.5 percent higher in the high scenario and 0.5 percent lower in the low scenario.

Q. Does Tampa Electric conclude that the forecasts of customers, energy sales and demand are appropriate and

reasonable?

A. Yes. The customer, demand and energy sales forecasts are based on assumptions that were developed by industry experts and are the most recent assumptions available at the time the forecasts were developed. The forecasting methods used to develop the forecasts are theoretically and statistically sound and were previously reviewed and accepted by the Commission. In addition, the average annual growth rates for per-customer demand and energy usage are compared for consistency and compared to historical growth rates. Summer and winter load factors are reviewed to ensure proper integration of the peak and energy models. The results show that the load factors are reasonable when compared to historical years. Load factors have dropped slightly due to the loss of phosphate load. The load factors are shown in Document No. 11 of my exhibit.

Q. Have the customer, demand and energy sales forecasts been reviewed by external consultants?

A. Yes. Tampa Electric witness Eric Fox who is Director, Forecast Solutions at Itron, Inc. has reviewed the forecast results. Witness Fox has filed direct testimony

in support of the customer, demand and energy sales forecasts and concludes that the forecasting results are reasonable and appropriate and the methodologies used for developing the forecasts represent best industry practice. The forecasts are consistent with historical trends, Energy Information Administration projections at the South Atlantic and national level, as well as with other utility forecasts.

SUMMARY

Q. Please summarize your direct testimony.

A. Tampa Electric's service area will continue to grow at a steady pace over the forecast horizon. The company expects an average increase in customers of 1.5 percent a year, which is an increase of almost 105,000 by 2022. Per-customer demand and energy consumption is expected to continue to decline slightly over the next ten years. As a result, retail energy sales are expected to increase at an average annual rate of 1.2 percent over the next ten years. Up-to-date reviews of actual results confirm that the company's forecast is a reliable representation of projected sales and any adjustments to reflect updated results would likely result in a slight reduction to the retail energy sales projections. The methods used for

developing the customer, demand and energy forecasts presented in my direct testimony represent best practices and are based on appropriate and reasonable assumptions.

Q. Does this conclude your direct testimony?

A. Yes, it does.

TAMPA ELECTRIC COMPANY
DOCKET NO. 130040-EI
WITNESS: CIFUENTES

EXHIBIT

OF

LORRAINE L. CIFUENTES

Table of Contents

TAMPA ELECTRIC COMPANY
DOCKET NO. 130040-EI
EXHIBIT NO. _____ (LLC-1)
WITNESS: CIFUENTES
DOCUMENT NO. 1
PAGE 1 OF 2
FILED: 04/05/2013

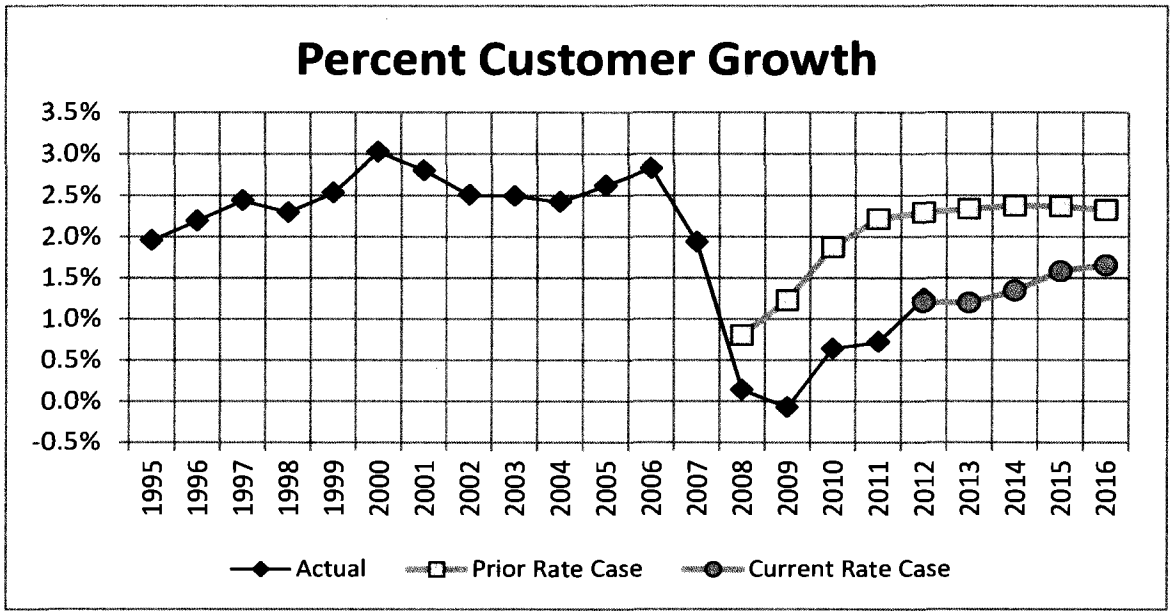
LIST OF MINIMUM FILING REQUIREMENT SCHEDULES

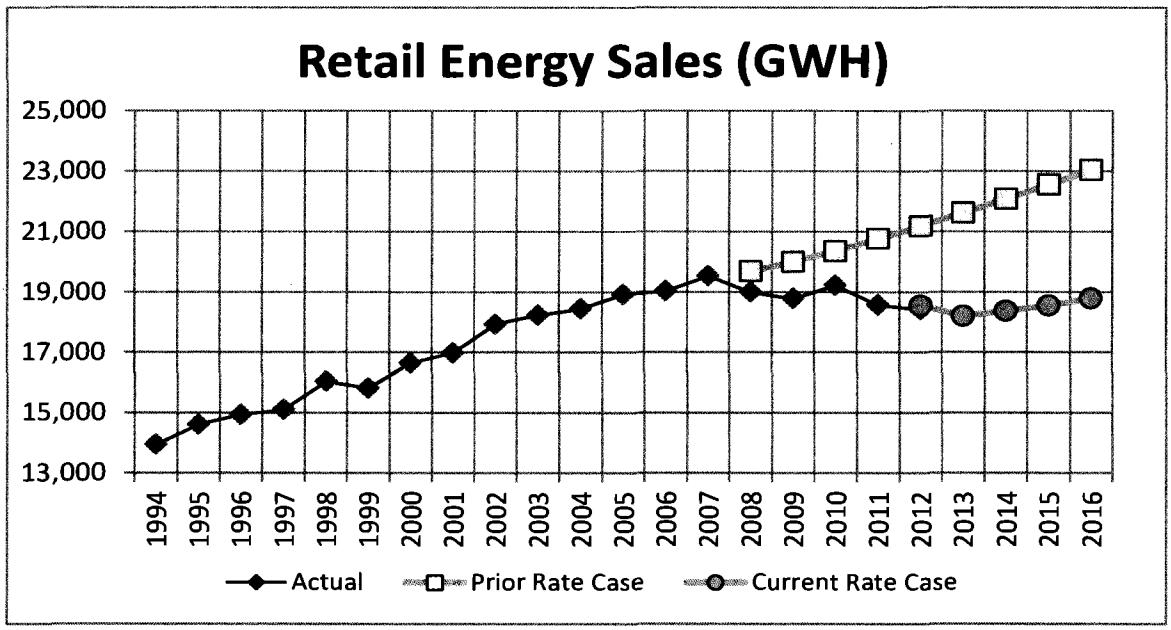
SPONSORED OR CO-SPONSORED BY LORRAINE L. CIFUENTES

MFR Schedule	Title
C-33	Performance Indices
C-34	Statistical Information
C-35	Payroll And Fringe Benefit Increases Compared To CPI
C-36	Non-Fuel Operation And Maintenance Expense Compared To CPI
C-40	O&M Compound Multiplier Calculation
E-9	Cost Of Service - Load Data
E-11	Development Of Coincident And Non-Coincident Demands For Cost Study
E-16	Customers By Voltage Level
E-17	Load Research Data
E-18	Monthly Peaks
E-19a	Demand And Energy Losses
E-19b	Energy Losses
E-19c	Demand Losses
F-5	Forecasting Models

MFR Schedule	Title
F-6	Forecasting Models - Sensitivity Of Output To Changes In Input Data
F-7	Forecasting Models - Historical Data
F-8	Assumptions

TAMPA ELECTRIC COMPANY
DOCKET NO. 130040-EI
EXHIBIT NO. ___ (LLC-1)
WITNESS: CIFUENTES
DOCUMENT NO.2
PAGE 1 OF 1
FILED: 04/05/2013





	Population (Millions)	Residential Real Price of Electricity ($/MWH)	Real Household Income	Persons Per Household	Commercial Real Gross Output (Millions)	Government Real Gross Output (Millions)	Construction Employment (Thousands)	Commercial Employment (Thousands)	Government Employment (Thousands)	Industrial Employment (Thousands)
2003	1,086	$65.00	$84,105	2.6	$40,643	$5,829	37.4	443.0	78.7	31.8
2004	1,115	$65.95	$86,430	2.6	$42,371	$6,004	41.3	459.8	78.3	32.7
2005	1,146	$65.66	$88,429	2.6	$45,475	$5,640	45.9	475.1	78.4	33.5
2006	1,175	$66.43	$91,465	2.6	$47,085	$5,699	47.6	484.9	78.6	33.9
2007	1,196	$70.16	$91,769	2.6	$48,035	$6,161	45.2	494.8	80.0	32.2
2008	1,208	$69.38	$90,937	2.6	$46,490	$6,262	39.5	474.2	80.6	29.5
2009	1,218	$71.91	$86,465	2.6	$46,021	$6,488	30.9	447.3	82.6	25.4
2010	1,231	$71.62	$86,139	2.6	$46,581	$6,340	26.6	449.8	82.3	23.4
2011	1,240	$67.58	$87,153	2.6	$47,531	$5,988	26.2	463.4	82.5	24.1
2012	1,249	$64.04	$87,979	2.6	$48,650	$6,057	25.3	476.5	83.2	25.0
2013	1,262	$63.73	$89,918	2.6	$50,496	$6,105	27.1	484.9	84.0	25.1
2014	1,280	$63.95	$92,919	2.6	$52,809	$6,100	28.7	496.8	85.8	24.9
2015	1,300	$63.31	$95,529	2.6	$55,001	$6,144	30.3	512.6	87.5	24.8
2016	1,322	$62.50	$97,811	2.6	$56,871	$6,222	32.0	527.5	88.5	24.7
2017	1,343	$60.77	$99,096	2.6	$58,626	$6,251	32.6	537.9	88.6	24.4
2018	1,364	$58.96	$100,299	2.6	$60,454	$6,288	33.1	546.1	88.7	24.0
2019	1,385	$58.17	$101,764	2.6	$62,298	$6,324	33.6	554.8	88.7	23.6
2020	1,405	$57.57	$103,258	2.6	$64,115	$6,356	34.4	564.4	88.7	23.2
2021	1,424	$57.11	$104,911	2.6	$65,920	$6,384	35.3	574.2	88.7	22.8
2022	1,443	$56.65	$106,667	2.6	$67,696	$6,403	36.2	584.2	88.6	22.4
Average Annual Growth Rates										
2003-2012	1.6%	-0.2%	0.5%	0.1%	2.0%	0.4%	-4.3%	0.8%	0.6%	-2.6%
2013-2022	1.5%	-1.3%	1.9%	0.0%	3.3%	0.5%	3.3%	2.1%	0.6%	-1.3%

TAMPA ELECTRIC COMPANY
DOCKET NO. 130040-EI
EXHIBIT NO. ___ (LLC-1)
WITNESS: CIFUENTES
DOCUMENT NO. 3
PAGE 1 OF 1
FILED: 04/05/2013

29

Tampa Electric Company
Billing Cycle Based Degree-Days

	Heating Degree Days	Cooling Degree Days
1992	540	3,302
1993	441	3,453
1994	430	3,762
1995	547	3,689
1996	792	3,479
1997	343	3,754
1998	406	4,011
1999	342	3,719
2000	417	3,689
2001	572	3,613
2002	447	3,982
2003	605	3,736
2004	547	3,490
2005	534	3,469
2006	499	3,513
2007	381	3,849
2008	420	3,523
2009	457	3,823
2010	1000	3,642
2011	575	3,844
2012	241	3,916
2013	512	3,655
2014	512	3,655
2015	512	3,655
2016	512	3,655
2017	512	3,655
2018	512	3,655
2019	512	3,655
2020	512	3,655
2021	512	3,655
2022	512	3,655
Average Annual Degree Days		
1992-2011	515	3,667
2013-2022	512	3,655

TAMPA ELECTRIC COMPANY
DOCKET NO. 130040-EI
EXHIBIT NO. ___ (LLC-1)
WITNESS: CIFUENTES
DOCUMENT NO. 5
PAGE 1 OF 1
FILED: 04/05/2013

Tampa Electric Company
Customer Forecast

	Number of Customers
2003	604,900
2004	619,535
2005	635,621
2006	653,706
2007	666,354
2008	667,266
2009	666,750
2010	670,991
2011	675,799
2012	684,235
2013	692,125
2014	701,415
2015	712,504
2016	724,281
2017	735,481
2018	746,489
2019	757,529
2020	768,510
2021	778,820
2022	788,686

Average Annual Growth Rates

2003-2012	1.4%
2013-2022	1.5%

Average Absolute Growth

2003-2012	8,815
2013-2022	10,729

Tampa Electric Company
Per-Customer Energy Consumption
(kWh/Customer)

	Total Retail	Total Excluding Phosphate
2003	30,129	28,021
2004	29,759	27,777
2005	29,754	27,954
2006	29,103	27,673
2007	29,313	27,739
2008	28,459	27,008
2009	28,158	26,800
2010	28,634	27,216
2011	27,469	26,388
2012	26,909	25,575
2013	26,299	25,420
2014	26,190	25,312
2015	26,037	25,173
2016	25,951	25,092
2017	25,886	25,056
2018	25,836	25,018
2019	25,780	24,974
2020	25,697	24,903
2021	25,633	24,849
2022	25,598	24,824
Average Annual Growth Rates		
2003-2012	-1.2%	-1.0%
2013-2022	-0.3%	-0.3%
Average Absolute Growth		
2003-2012	-358	-272
2013-2022	-78	-66

Tampa Electric Company
Retail Energy Sales
(GWH)

	Total Retail	Total Excluding Phosphate
2003	18,225	16,948
2004	18,437	17,208
2005	18,912	17,763
2006	19,025	18,089
2007	19,533	18,483
2008	18,990	18,020
2009	18,774	17,868
2010	19,213	18,261
2011	18,564	17,832
2012	18,412	17,499
2013	18,202	17,593
2014	18,370	17,753
2015	18,552	17,935
2016	18,795	18,173
2017	19,039	18,427
2018	19,287	18,675
2019	19,529	18,918
2020	19,749	19,137
2021	19,963	19,352
2022	20,189	19,578
Average Annual Growth Rates		
2003-2012	0.1%	0.4%
2013-2022	1.2%	1.2%
Average Absolute Growth		
2003-2012	21	61
2013-2022	221	221

Tampa Electric Company
Per-Customer Peak Demand
(kW/Customer)

	Winter	Summer
2003	6.42	5.99
2004	5.40	6.03
2005	5.80	6.24
2006	5.72	6.13
2007	5.10	6.19
2008	5.56	5.92
2009	6.12	6.02
2010	6.72	5.84
2011	5.97	5.82
2012	5.14	5.69
2013	5.74	5.62
2014	5.70	5.60
2015	5.67	5.57
2016	5.65	5.55
2017	5.64	5.53
2018	5.63	5.51
2019	5.61	5.49
2020	5.60	5.47
2021	5.58	5.45
2022	5.57	5.43

Average Annual Growth Rates

2003-2012	-2.4%	-0.6%
2013-2022	-0.3%	-0.4%

Average Absolute Growth

2003-2012	-0.14	-0.03
2013-2022	-0.02	-0.02

Tampa Electric Company
Peak Demand
(MW)

	Winter	Summer
2003	3881	3623
2004	3344	3737
2005	3686	3968
2006	3736	4010
2007	3398	4123
2008	3709	3952
2009	4080	4015
2010	4512	3917
2011	4037	3931
2012	3517	3892
2013	3970	3893
2014	3999	3928
2015	4043	3969
2016	4095	4017
2017	4147	4065
2018	4200	4112
2019	4251	4159
2020	4301	4203
2021	4349	4244
2022	4395	4286

Average Annual Growth Rates

2003-2012	-1.1%	0.8%
2013-2022	1.1%	1.1%

Average Absolute Growth

2003-2012	-40	30
2013-2022	47	44

TAMPA ELECTRIC COMPANY
DOCKET NO. 130040-EI
EXHIBIT NO. ___ (LLC-1)
WITNESS: CIFUENTES
DOCUMENT NO. 10
PAGE 1 OF 1
FILED: 04/05/2013

Tampa Electric Company
Firm Peak Demand
(MW)

	Winter	Summer
2003	3455	3351
2004	2936	3445
2005	3287	3725
2006	3523	3769
2007	3127	3876
2008	3443	3723
2009	3754	3799
2010	4246	3710
2011	3725	3699
2012	3237	3677
2013	3699	3667
2014	3731	3701
2015	3778	3741
2016	3832	3788
2017	3887	3835
2018	3941	3881
2019	3993	3927
2020	4045	3971
2021	4095	4012
2022	4144	4054

Average Annual Growth Rates

2003-2012	-0.7%	1.0%
2013-2022	1.3%	1.1%

Average Absolute Growth

2003-2012	-24	36
2013-2022	49	43

Tampa Electric Company
Firm Peak Load Factor
(%)

	Winter	Summer
2003	60.2%	62.1%
2004	71.5%	60.9%
2005	65.7%	58.0%
2006	61.6%	57.6%
2007	71.3%	57.5%
2008	62.8%	58.1%
2009	57.1%	56.4%
2010	51.7%	59.1%
2011	56.9%	57.3%
2012	64.8%	57.0%
2013	56.2%	56.7%
2014	56.2%	56.7%
2015	56.1%	56.6%
2016	55.8%	56.5%
2017	55.9%	56.7%
2018	55.9%	56.7%
2019	55.8%	56.8%
2020	55.6%	56.6%
2021	55.6%	56.8%
2022	55.6%	56.8%
	Average Annual Growth Rates	
2003-2012	0.8%	-0.9%
2013-2022	-0.1%	0.0%