

**AUSLEY & McMULLEN**

ATTORNEYS AND COUNSELORS AT LAW

123 SOUTH CALHOUN STREET  
P.O. BOX 391 (ZIP 32302)  
TALLAHASSEE, FLORIDA 32301  
(850) 224-9115 FAX (850) 222-7560

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COMMISSION  
CLERK

April 29, 2011

HAND DELIVERED

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Ms. Ann Cole, Director  
Division of Commission Clerk  
Florida Public Service Commission  
2540 Shumard Oak Boulevard  
Tallahassee, FL 32399-0850

Re: Load Research Report - Tampa Electric Company

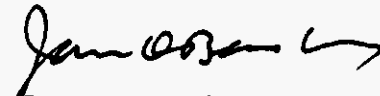
Dear Ms. Cole:

In compliance with Rule 25-6.0437, enclosed are five copies of Tampa Electric Company's Load Research Report.

Please acknowledge receipt and filing of the above by stamping the duplicate copy of this letter and returning same to this writer.

Thank you for your assistance in connection with this matter.

Sincerely,

  
James D. Beasley

JDB/pp  
Enclosures

cc: Paula K. Brown (w/o enc.)

- COM \_\_\_\_\_
- APA \_\_\_\_\_
- ECR A \_\_\_\_\_
- GCL \_\_\_\_\_
- RAD \_\_\_\_\_
- SSC \_\_\_\_\_
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- OPC \_\_\_\_\_
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DOCUMENT NUMBER-DATE

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**TAMPA ELECTRIC COMPANY**  
**LOAD RESEARCH REPORT**  
**APRIL 2011**

DOCUMENT NUMBER-DATE

02954 APR 29 =

FPSC-COMMISSION CLERK

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### REPORTING PERIOD

The data summarized in this report was collected during calendar year 2010. The samples were selected in 2008 and 2009; the recording equipment was installed prior to December 31 of the year the sample was selected in most cases.

### SAMPLING PLAN

The sampling plan was formulated and filed with this Commission in December 2009.

### RESIDENTIAL CLASS SAMPLE

The residential samples were pre-stratified by housing type. The three housing type categories are single-family detached, multi-family, and mobile-home. This stratification is required because the load patterns for the three housing types are dissimilar and the mobile home population as a percentage of the population varies with the seasons. For example, the percentage of mobile homes was 9.6 and 9.8 percent in the summer and winter, respectively. Because the sample is stratified by housing type and the inter-strata migration is insignificant, the stratum weights are varied on a month by month basis when estimating class demands. Thus, the estimated demands reflect the seasonal changes in the housing type mix. The sample points were allocated to the strata using Neyman allocation with stratum means and variances estimated from the previous sample results. A minimum sample size of 50 was used in the multi-family and mobile home categories. The resulting sample allocation is shown below.

### RESIDENTIAL SERVICE SAMPLE SIZES

Stratum	Sample Size
Single Family Detached	175
Multi Family	50
Mobile Home	50
<b>Total</b>	<b>275</b>

**GENERAL SERVICE NON-DEMAND CLASS SAMPLE**

The stratification variable used for the General Service Non-Demand sample was the annual kilowatt-hour ("kWh") consumption at the time of sample selection. The stratum boundary was set at 15,000 kWh of annual usage. The sample points were allocated to the strata using Neyman allocation with stratum variances estimated from previous sample results. The allocation is shown below.

**GENERAL SERVICE NON-DEMAND SAMPLE SIZES**

<b>Stratum</b>	<b>Sample Size</b>
0 – 14,999 kWh	257
15,000 kWh and beyond	243
Secondary Metered / Primary Served	0
Primary Metered / Secondary Served	9
Primary Metered / Primary Served	15
Primary Metered / Subtransmission Served	1
<b>Total</b>	<b>525</b>

### **GENERAL SERVICE DEMAND CLASS SAMPLE**

The stratification variable used for the General Service Demand sample was the highest billed demand in the twelve months prior to sample selection. For cost of service analysis, class demands are separated by voltage level. For secondary voltage customers, the stratum boundaries were 200 kW and 500 kW. All customers over 500 kW were included in a 100 percent sampled stratum. For any customers subsequently exceeding this threshold, recorders were installed on the meters and they were included in the sample as well. In December 2009, an amended Load Research Sampling Plan was filed. The General Service Large Demand (GSLD) class was eliminated and customers were moved to the General Service Demand (GSD) class. As a result, the GSD sample has increased and new strata were added. The sample points in the two sampled strata were allocated using Neyman allocation. The allocation is shown below and reflects totals in the 100 percent sampled strata as of December 2010.

**GENERAL SERVICE DEMAND SAMPLE SIZES**

<b>Stratum</b>	<b>Sample Size</b>
Secondary 0 – 199 kW	70
Secondary 200 – 499 kW	70
Secondary over 499 kW (100%)	700 <sup>(1)</sup>
Secondary Metered/Primary Served (100%)	3 <sup>(1)</sup>
Primary Metered/Secondary Served	35 <sup>(1)</sup>
Primary Metered/Primary Served	93 <sup>(1)</sup>
Primary Metered/Subtransmission Served	1 <sup>(1)</sup>
Subtransmission Metered/Primary Served	0 <sup>(1)</sup>
Subtransmission Metered/Subtransmission Served	5 <sup>(1)</sup>
<b>Total</b>	<b>977</b>

1. 100 percent sampled stratum; therefore size will vary depending upon the number of customers meeting criteria.

### **INTERRUPTIBLE SERVICE CLASS SAMPLE**

The Interruptible Service (IS) class has recorders installed on each customer. For cost of service analysis, the customers are divided by voltage level. In the event customers migrate out of the IS rate, the analysis population is changed accordingly. The population size was 46 as of December 2010.

### **LIGHTING SERVICE CLASS SAMPLE**

The approved rate design included the combination of multiple lighting rate classes into a single Lighting Service (LS) rate class. As a result, the annual retail sales for the LS rate class now exceeds one percent of Tampa Electric's total annual retail sales. Therefore, the LS rate class has been added to the proposed 2010 sampling plan as required per Rule 25-6.0437(3) F.A.C., Cost of Service Load Research.

The lighting sample consists of four circuits of 84 total lights with varying types of fixtures and wattage.

### **STUDY METHODOLOGY**

Following sample design, the load research study consists of four phases: data collection, editing, storage and analysis. The methodology Tampa Electric used in the phases for this study is basically the same as it has used in the past.

### **DATA COLLECTION**

Once sample sizes, stratum definitions, and sample allocations are determined, sample selection begins. Random numbers are assigned to each customer in the class; then, the list of customers is sorted in ascending order by the assigned random number. The first group of customers on the list is the prime sample, while the following group is used, if necessary, as a source of replacement customers. The replacement list is maintained in random order and used in order, as needed. For customers selected, the standard billing watt-hour meter is replaced with a pulse initiating meter. In addition, a recording device is installed to collect and retain pulse information in fifteen minute intervals. The recorded information is collected, usually on a monthly basis, and processed by the Meter Department through a translation system. The translation system produces transfer files which are uploaded and subsequently input into the LODESTAR System. Data entered into LODESTAR goes through a preliminary screening to determine its acceptability. Data that does not pass the validation criteria is examined by analysts to determine if any portion of the data is useable and if any editing is required. The data is flagged to indicate whether it is suitable for analysis purposes and is then stored permanently.

## **DATA ANALYSIS**

The data that passes LODESTAR'S validation criteria is then flagged as acceptable in the LODESTAR System is then processed through software modules capable of performing stratified or unstratified mean-per-unit, combined ratio or separate ratio analysis. The analyses are run on a calendar month basis and produce statistics at the class level and at the per customer level. For Tampa Electric Company, the best results for sampled classes are obtained through the use of combined ratio expansion. Since the 100 percent sampled classes do not require statistical expansion, the results for these classes are tabulated with the mean-per-unit module.

## **SAMPLE POINT REPLACEMENT**

Initially and during the course of the load research study, sample points must be replaced. During the installation periods, 87 replacements were required for the following reasons: customer access or installation problems (63), customers in suspense (18), customer refusal of installation (1), improper equipment (4), and customers moved to 100 percent sample (1). During the sampling period, 127 removals occurred for the following reasons: rate changes (33), extended periods of suspense (63), customer dissatisfaction or access problems (13), meter/service removed (14) and customers moved to 100 percent sample (4). In all cases, the replacements were selected randomly from customers in the same stratum. As a result of making these replacements, it is assumed that no significant bias is introduced into the results in the process. Because the combined ratio expansion technique was used for the analysis phase in the sampled classes, the assumption is reasonable.

## **RESULTS**

The following tables provide the class coincident and non-coincident demands and their related precision for the calendar year 2010. The precision values reported are calculated at the 90 percent confidence level.

The winter system coincident peak occurred on January 11, 2010 at 08:00 and the summer coincident peak occurred on June 14, 2010 at 17:00.



**RESIDENTIAL CLASS  
 MONTHLY COINCIDENT DEMANDS  
 2010**

<b>Month</b>	<b>Class Total (MW)</b>	<b>Average Per Customer (kW)</b>	<b>Precision (%)</b>
January	2,937.4	4.98	5.6
February	2,054.0	3.48	6.2
March	2,040.6	3.45	6.3
April	1,392.0	2.35	6.3
May	1,914.7	3.24	4.6
June	2,053.7	3.47	3.8
July	2,069.4	3.50	3.9
August	2,092.6	3.54	3.8
September	1,950.9	3.30	3.9
October	1,654.4	2.79	4.8
November	1,319.2	2.22	5.6
December	2,488.2	4.20	6.4

12 Coincident Peak Average      1,997.3 MW  
 Precision                                2.3 percent

**RESIDENTIAL CLASS  
MONTHLY CLASS NON-COINCIDENT DEMANDS  
2010**

<b>Month</b>	<b>Class Total (MW)</b>	<b>Average Per Customer (kW)</b>	<b>Precision (%)</b>
January	2,937.4	4.98	5.6
February	2,199.0	3.72	5.9
March	2,106.2	3.56	6.3
April	1,565.7	2.64	6.5
May	1,971.9	3.33	5.1
June	2,220.8	3.75	3.9
July	2,367.0	4.00	3.8
August	2,243.2	3.79	4.0
September	2,085.7	3.52	3.9
October	1,680.9	2.84	5.8
November	1,479.7	2.50	8.5
December	2,557.0	4.31	6.2

**RESIDENTIAL CLASS  
MONTHLY CUSTOMER NON-COINCIDENT DEMANDS  
2010**

<b>Month</b>	<b>Class Total (MW)</b>	<b>Average Per Customer (kW)</b>	<b>Precision (%)</b>
January	5,491.7	9.31	4.4
February	4,936.6	8.35	3.7
March	4,575.5	7.73	3.8
April	3,991.6	6.74	3.5
May	4,222.2	7.14	3.6
June	4,348.0	7.35	3.6
July	4,380.1	7.40	3.0
August	4,231.4	7.15	3.4
September	4,169.0	7.04	3.0
October	3,942.6	6.66	3.3
November	4,015.3	6.77	3.7
December	5,166.4	8.71	4.5

**GENERAL SERVICE NON-DEMAND  
 MONTHLY COINCIDENT DEMANDS  
 2010**

<b>Month</b>	<b>Class Total (MW)</b>	<b>Average Per Customer (kW)</b>	<b>Precision (%)</b>
January	228.1	3.51	7.3
February	166.4	2.55	7.5
March	161.0	2.46	7.4
April	175.5	2.68	6.1
May	214.7	3.28	5.0
June	226.4	3.45	5.3
July	254.2	3.88	4.3
August	228.3	3.48	4.2
September	203.6	3.12	4.9
October	198.1	3.04	5.0
November	152.0	2.33	5.9
December	188.2	2.88	7.5

12 Coincident Peak Average      199.7 MW  
 Precision                              3.7 percent

**GENERAL SERVICE NON-DEMAND  
MONTHLY CLASS NON-COINCIDENT DEMANDS  
2010**

<b>Month</b>	<b>Class Total (MW)</b>	<b>Average Per Customer (kW)</b>	<b>Precision (%)</b>
January	270.5	4.16	7.3
February	208.1	3.19	7.2
March	178.7	2.73	7.6
April	187.3	2.86	5.7
May	228.1	3.48	5.1
June	249.6	3.80	4.8
July	259.6	3.96	5.3
August	252.8	3.85	4.5
September	221.6	3.39	4.7
October	213.1	3.27	4.7
November	189.6	2.91	5.3
December	230.3	3.53	7.4

GENERAL SERVICE NON-DEMAND  
MONTHLY CUSTOMER NON-COINCIDENT DEMANDS  
2010

Month	Class Total (MW)	Average Per Customer (kW)	Precision (%)
January	504.2	7.76	6.2
February	476.8	7.32	6.3
March	434.7	6.65	6.0
April	376.4	5.74	5.8
May	415.6	6.34	5.6
June	440.0	6.71	5.3
July	440.3	6.71	5.3
August	431.4	6.57	5.2
September	408.0	6.24	5.7
October	383.1	5.88	5.3
November	377.8	5.80	5.4
December	475.0	7.27	5.9

**GENERAL SERVICE DEMAND CLASS  
 MONTHLY COINCIDENT DEMANDS  
 2010**

<b>Month</b>	<b>Class Total (MW)</b>	<b>Average Per Customer (kW)</b>	<b>Precision (%)</b>
January	1,093.5	80.01	6.9
February	916.1	67.28	5.3
March	912.9	67.39	5.5
April	1,065.8	79.28	3.6
May	1,198.5	89.49	3.2
June	1,246.3	93.32	3.0
July	1,306.4	97.48	3.1
August	1,274.3	95.15	3.1
September	1,252.5	91.14	3.0
October	1,161.8	83.32	3.1
November	1,047.4	75.41	2.9
December	1,062.1	77.19	6.7

12 Coincident Peak Average    1,128.1 MW  
 Precision                            3.1 percent

**GENERAL SERVICE DEMAND CLASS  
MONTHLY CLASS NON-COINCIDENT DEMANDS  
2010**

<b>Month</b>	<b>Class Total (MW)</b>	<b>Average Per Customer (kW)</b>	<b>Precision (%)</b>
January	1,110.6	81.26	7.3
February	1,005.3	73.83	3.8
March	1,031.4	76.14	4.1
April	1,144.1	85.10	3.7
May	1,291.1	96.41	4.1
June	1,327.5	99.39	3.6
July	1,307.6	97.58	3.3
August	1,333.8	99.59	3.1
September	1,327.3	96.58	3.3
October	1,257.4	90.18	3.6
November	1,176.5	84.70	3.6
December	1,090.9	79.28	6.9



**GENERAL SERVICE DEMAND CLASS  
MONTHLY CUSTOMER NON-COINCIDENT DEMANDS  
2010**

<b>Month</b>	<b>Class Total (MW)</b>	<b>Average Per Customer (kW)</b>	<b>Precision (%)</b>
January	1,631.2	119.37	5.6
February	1,485.8	109.12	4.6
March	1,452.3	107.22	4.4
April	1,539.5	114.51	4.1
May	1,654.5	123.54	4.0
June	1,699.3	127.23	3.4
July	1,633.2	121.87	3.5
August	1,688.1	126.04	3.6
September	1,677.3	122.05	3.8
October	1,588.2	113.90	4.0
November	1,487.2	107.07	3.9
December	1,529.2	111.13	4.8

INTERRUPTIBLE SERVICE CLASS  
MONTHLY COINCIDENT DEMANDS  
2010

Month	Class Total (MW)	Average Per Customer (kW)	Precision <sup>(1)</sup> (%)
January	117.1	2,491.51	N/A
February	156.3	3,326.18	N/A
March	142.5	3,032.84	N/A
April	152.2	3,238.38	N/A
May	172.6	3,752.92	N/A
June	153.3	3,332.65	N/A
July	186.2	4,048.45	N/A
August	132.4	2,879.17	N/A
September	110.6	2,404.33	N/A
October	126.9	2,757.79	N/A
November	145.8	3,170.07	N/A
December	174.0	3,783.08	N/A

12 Coincident Peak Average      147.5 MW  
Precision                                      NA

(1) Accuracy for this class does not apply since it is 100 percent sampled and does not require statistical expansion.

**INTERRUPTIBLE SERVICE CLASS  
MONTHLY CLASS NON-COINCIDENT DEMANDS  
2010**

<b>Month</b>	<b>Class Total (MW)</b>	<b>Average Per Customer (kW)</b>	<b>Precision <sup>(1)</sup> (%)</b>
January	187.1	3,981.68	N/A
February	203.1	4,321.57	N/A
March	213.1	4,534.48	N/A
April	206.7	4,398.43	N/A
May	207.7	4,514.83	N/A
June	206.4	4,487.75	N/A
July	186.2	4,048.45	N/A
August	160.5	3,488.55	N/A
September	158.1	3,436.01	N/A
October	186.9	4,062.17	N/A
November	168.5	3,663.38	N/A
December	190.7	4,145.13	N/A

(1) Accuracy for this class does not apply since it is 100 percent sampled and does not require statistical expansion.

**INTERRUPTIBLE SERVICE CLASS  
 MONTHLY CUSTOMER NON-COINCIDENT DEMANDS  
 2010**

<b>Month</b>	<b>Class Total (MW)</b>	<b>Average Per Customer (kW)</b>	<b>Precision <sup>(1)</sup> (%)</b>
January	283.5	6,031.30	NA
February	297.4	6,327.69	NA
March	298.8	6,356.55	NA
April	326.5	6,945.81	NA
May	296.8	6,451.72	NA
June	301.0	6,543.19	NA
July	312.5	6,792.99	NA
August	299.3	6,505.99	NA
September	302.5	6,575.52	NA
October	260.4	5,660.26	NA
November	280.0	6,087.79	NA
December	324.6	7,055.77	NA

(1) Accuracy for this class does not apply since it is 100 percent sampled and does not require statistical expansion.

**LIGHTING SERVICE CLASS  
 MONTHLY COINCIDENT DEMANDS  
 2010**

<b>Month</b>	<b>Class Total (MW)</b>	<b>Average Per Customer (kW)</b>	<b>Precision (%)</b>
January	6.4	27.43	NA
February	4.2	17.87	NA
March	4.2	18.03	NA
April	0.0	0.00	NA
May	0.0	0.00	NA
June	0.0	0.00	NA
July	0.0	0.00	NA
August	0.0	0.00	NA
September	0.0	0.00	NA
October	0.0	0.00	NA
November	4.2	17.55	NA
December	4.2	17.51	NA

12 Coincident Peak Average      1.9 MW  
 Precision                              NA

**LIGHTING SERVICE CLASS  
 MONTHLY CLASS NON-COINCIDENT DEMANDS  
 2010**

<b>Month</b>	<b>Class Total (MW)</b>	<b>Average Per Customer (kW)</b>	<b>Precision (%)</b>
January	52.0	221.17	NA
February	51.4	218.93	NA
March	51.1	218.38	NA
April	51.0	217.96	NA
May	51.0	215.91	NA
June	50.2	211.79	NA
July	50.3	212.31	NA
August	50.2	211.69	NA
September	49.5	207.16	NA
October	49.6	207.61	NA
November	49.7	208.11	NA
December	49.5	207.02	NA

**COINCIDENT AND NON-COINCIDENT PEAK DATES AND TIMES**

Month	Coincident Peak	Non-Coincident Peaks				
		RS	GS	GSD	IS	LS
Jan	11-08:00	11-08:00	11-10:00	11-09:00	21-09:00	27-03:00
Feb	26-08:00	14-08:00	11-10:00	23-14:00	17-10:00	05-02:00
Mar	05-08:00	05-07:00	05-10:00	11-14:00	19-18:00	02-23:00
Apr	23-17:00	24-18:00	06-16:00	08-13:00	16-07:00	16-04:00
May	03-17:00	02-17:00	03-16:00	04-14:00	10-10:00	03-05:00
Jun	14-17:00	13-18:00	15-12:00	07-12:00	28-08:00	30-22:00
Jul	28-15:00	31-17:00	20-15:00	28-13:00	28-15:00	03-23:00
Aug	19-17:00	15-17:00	17-15:00	18-15:00	11-10:00	11-03:00
Sep	13-17:00	11-15:00	13-14:00	13-14:00	04-14:00	24-21:00
Oct	27-17:00	26-19:00	27-15:00	28-15:00	06-23:00	30-04:00
Nov	03-18:00	25-13:00	03-16:00	03-14:00	09-11:00	12-23:00
Dec	15-08:00	15-07:00	15-10:00	15-09:00	22-08:00	13-02:00

**CLASS TOTAL  
MONTHLY ENERGY (MWH)**

<b>Month</b>	<b>RS</b>	<b>GS</b>	<b>GSD</b>	<b>IS</b>	<b>LS</b>
Jan	858,431	86,171	594,165	97,642	20,743
Feb	691,525	76,096	518,839	96,004	18,597
Mar	595,285	74,459	568,703	119,953	18,543
Apr	579,621	77,172	594,055	114,264	16,798
May	835,715	96,998	688,423	117,646	16,260
Jun	954,050	105,221	710,347	107,898	15,259
Jul	969,709	104,216	707,926	97,056	15,853
Aug	947,816	105,718	727,353	89,359	16,837
Sep	866,129	93,387	696,438	86,366	17,031
Oct	662,121	83,985	635,330	96,357	18,634
Nov	529,150	70,342	566,069	88,379	19,092
Dec	851,714	84,010	563,074	102,064	19,418
<b>Total</b>	<b>9,341,264</b>	<b>1,057,776</b>	<b>7,570,723</b>	<b>1,212,987</b>	<b>213,064</b>

Note: Totals may not add due to rounding.



**CUSTOMER AVERAGE  
 MONTHLY ENERGY (kWh)**

<b>Month</b>	<b>RS</b>	<b>GS</b>	<b>GSD</b>	<b>IS</b>	<b>LS</b>
Jan	1,456	1,326	43,478	2,077,480	88,266
Feb	1,170	1,168	38,105	2,042,630	79,134
Mar	1,005	1,139	41,986	2,552,184	79,242
Apr	979	1,177	44,187	2,431,151	71,788
May	1,413	1,480	51,406	2,557,526	68,896
Jun	1,612	1,604	53,186	2,345,598	64,385
Jul	1,639	1,589	52,826	2,109,917	66,890
Aug	1,602	1,609	54,308	1,942,595	71,043
Sep	1,463	1,429	50,676	1,877,514	71,261
Oct	1,118	1,289	45,563	2,094,709	77,966
Nov	892	1,079	40,754	1,921,290	79,881
Dec	1,436	1,286	40,921	2,218,786	81,246

**COINCIDENT PEAK LOAD FACTORS**

<b>Month</b>	<b>RS</b>	<b>GS</b>	<b>GSD</b>	<b>IS</b>	<b>LS</b>
Jan	39%	51%	73%	112%	432%
Feb	50%	68%	84%	91%	659%
Mar	39%	62%	84%	113%	591%
Apr	58%	61%	77%	104%	0
May	59%	61%	77%	92%	0
Jun	65%	65%	79%	98%	0
Jul	63%	55%	73%	70%	0
Aug	61%	62%	77%	91%	0
Sep	62%	64%	77%	108%	0
Oct	54%	57%	74%	102%	0
Nov	56%	64%	75%	84%	632%
Dec	46%	60%	71%	79%	624%
<b>12 CP AVG</b>	54%	61%	77%	95%	

**NON-COINCIDENT PEAK LOAD FACTORS**

<b>Month</b>	<b>RS</b>	<b>GS</b>	<b>GSD</b>	<b>IS</b>	<b>LS</b>
Jan	39%	43%	72%	70%	54%
Feb	47%	54%	77%	70%	54%
Mar	38%	56%	74%	76%	49%
Apr	51%	57%	72%	77%	46%
May	57%	57%	72%	76%	43%
Jun	60%	59%	74%	73%	42%
Jul	55%	54%	73%	70%	42%
Aug	57%	56%	73%	75%	45%
Sep	58%	59%	73%	76%	48%
Oct	53%	53%	68%	69%	50%
Nov	50%	52%	67%	73%	53%
Dec	45%	49%	69%	72%	53%