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April 28, 2017

VIA: ELECTRONIC FILING

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

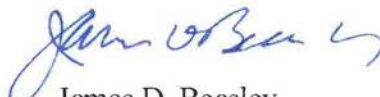
Re: Load Research Report - Tampa Electric Company

Dear Ms. Stauffer:

In compliance with Rule 25-6.0437, attached is Tampa Electric Company's Load Research Report.

Thank you for your assistance in connection with this matter.

Sincerely,



James D. Beasley

JDB/pp
Attachment

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

**TAMPA ELECTRIC COMPANY
LOAD RESEARCH REPORT
APRIL 2017**

REPORTING PERIOD

The data summarized in this report was collected during calendar year 2016. The samples were selected in 2014 and 2015; 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 August 2014.

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, for example, the mobile home percentages vary between summer and winter. 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
Total	275

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

Stratum	Sample Size
0 – 14,999 kWh	257
15,000 kWh and beyond	243
Secondary Metered/Primary Served	0 ⁽¹⁾
Primary Metered/Secondary Served	10 ⁽¹⁾
Primary Metered/Primary Served	25 ⁽¹⁾
Primary Metered/Subtransmission Served	0 ⁽¹⁾
Total	535

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

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. 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 2016.

GENERAL SERVICE DEMAND SAMPLE SIZES

Stratum	Sample Size
Secondary 0 – 199 kW	70
Secondary 200 – 499 kW	70
Secondary over 499 kW (100%)	718 ⁽¹⁾
Secondary Metered/Primary Served (100%)	0 ⁽¹⁾
Primary Metered/Secondary Served	39 ⁽¹⁾
Primary Metered/Primary Served	113 ⁽¹⁾
Primary Metered/Subtransmission Served	1 ⁽¹⁾
Subtransmission Metered/Primary Served	1 ⁽¹⁾
Subtransmission Metered/Subtransmission Served	5 ⁽¹⁾
Total	1,017

(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 28 as of December 2016.

LIGHTING SERVICE CLASS SAMPLE

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 Load Research System (LRS).

DATA EDITING AND STORAGE

Data entered into LRS 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 LRS's validation criteria 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.

RESULTS

The following tables provide the class coincident and non-coincident demands and their related precision for the calendar year 2016. The precision values reported are calculated at the 90 percent confidence level.

The winter system coincident peak occurred on January 25, 2016 at 08:00 and the summer coincident peak occurred on July 5, 2016 at 17:00. The following table shows the date and time of the monthly coincident and non-coincident peaks.

2016
COINCIDENT AND NON-COINCIDENT PEAK DATES AND TIMES

Month	Coincident Peak	Non-Coincident Peaks				
		RS	GS	GSD	IS	LS
Jan	25-08:00	25-08:00	25-10:00	08-14:00	21-22:00	24-03:00
Feb	11-08:00	11-08:00	03-16:00	03-15:00	15-12:00	05-02:00
Mar	31-18:00	27-15:00	16-16:00	31-16:00	12-24:00	10-03:00
Apr	29-17:00	29-18:00	29-16:00	29-15:00	14-19:00	17-20:00
May	02-17:00	15-18:00	19-16:00	19-15:00	02-13:00	07-02:00
Jun	15-17:00	14-18:00	15-15:00	15-15:00	08-04:00	30-23:00
Jul	05-17:00	05-19:00	05-15:00	06-15:00	29-18:00	31-20:00
Aug	23-17:00	22-18:00	23-16:00	23-15:00	13-06:00	13-21:00
Sep	19-17:00	11-18:00	09-16:00	19-15:00	29-06:00	19-20:00
Oct	05-17:00	02-17:00	05-16:00	05-16:00	05-07:00	16-05:00
Nov	01-17:00	01-20:00	03-16:00	02-15:00	07-11:00	17-18:00
Dec	19-16:00	25-16:00	01-16:00	06-12:00	06-02:00	05-04:00

Coincident Peak Tables

- Peak (MW)
- Average kW per Customer
- Precision (%)
- Load Factors (%)

2016
MONTHLY COINCIDENT PEAKS (MW)

Month	RS	GS	GSD	IS	LS
Jan	1,984.7	153.5	939.4	44.8	9.1
Feb	1,756.6	141.5	942.2	89.6	8.8
Mar	1,563.8	159.1	1,130.7	126.6	0.0
Apr	1,981.2	205.3	1,242.0	123.7	0.0
May	1,840.0	200.9	1,260.3	157.9	0.0
Jun	2,104.2	227.7	1,316.0	114.7	0.0
Jul	2,245.5	235.6	1,327.3	131.0	0.0
Aug	2,217.9	233.0	1,394.1	90.9	0.0
Sep	2,046.6	216.0	1,300.2	86.0	0.0
Oct	1,863.7	219.3	1,312.6	105.3	0.0
Nov	1,373.1	170.5	1,160.8	124.8	0.0
Dec	1,347.7	180.1	1,158.5	124.4	0.0
12 CP Avg.*	1,860.4	195.2	1,207.0	110.0	1.5

* Based on 12-month average CP

**2016
COINCIDENT PEAK
AVERAGE KW PER CUSTOMER**

Month	RS	GS	GSD	IS	LS
Jan	3.10	2.26	61.73	1,400.73	39.03
Feb	2.73	2.07	61.97	2,889.74	37.87
Mar	2.43	2.32	74.42	4,085.04	0.00
Apr	3.07	3.00	81.73	3,991.58	0.00
May	2.85	2.93	83.11	5,262.40	0.00
Jun	3.26	3.32	86.80	3,823.64	0.00
Jul	3.47	3.44	86.79	4,365.59	0.00
Aug	3.42	3.41	90.47	3,029.70	0.00
Sep	3.16	3.16	83.44	2,966.59	0.00
Oct	2.87	3.21	83.57	3,631.98	0.00
Nov	2.11	2.50	73.75	4,458.67	0.00
Dec	2.07	2.64	73.55	4,441.83	0.00

**2016
COINCIDENT PEAK
PRECISION (%)**

Month	RS	GS	GSD	IS	LS
Jan	8.12	9.92	5.34	N/A	N/A
Feb	7.31	8.51	4.86	N/A	N/A
Mar	5.95	6.05	3.69	N/A	N/A
Apr	5.09	5.63	3.85	N/A	N/A
May	4.56	5.09	3.59	N/A	N/A
Jun	4.00	4.92	3.50	N/A	N/A
Jul	3.62	4.90	2.99	N/A	N/A
Aug	3.59	4.20	3.12	N/A	N/A
Sep	4.38	5.29	2.72	N/A	N/A
Oct	3.99	4.52	2.89	N/A	N/A
Nov	5.10	5.93	3.06	N/A	N/A
Dec	5.99	6.85	3.74	N/A	N/A
12 CP	5.0	5.8	3.5	N/A	N/A

**2016
COINCIDENT PEAK
LOAD FACTORS (%)**

Month	RS	GS	GSD	IS	LS
Jan	44	60	82	231	300
Feb	47	67	85	124	297
Mar	53	64	75	70	N/A
Apr	46	52	71	81	N/A
May	59	60	74	58	N/A
Jun	62	58	76	95	N/A
Jul	63	58	76	70	N/A
Aug	59	57	74	121	N/A
Sep	62	60	77	122	N/A
Oct	55	52	71	106	N/A
Nov	57	56	72	84	N/A
Dec	61	52	71	87	N/A
12 CP Avg.*	56	58	75	104	50
Annual**	46	48	65	65	270

* Based on 12-month average CP and annual energy

** Based on maximum annual CP and annual energy

Non-Coincident Peak Tables

- Peak (MW)
- Average kW per Customer
- Precision (%)
- Load Factors (%)

2016
MONTHLY NON-COINCIDENT PEAKS (MW)

Month	RS	GS	GSD	IS	LS
Jan	1,984.7	181.0	1,009.5	176.0	49.3
Feb	1,756.6	178.6	1,170.0	184.5	49.2
Mar	1,658.3	196.7	1,203.9	150.5	49.1
Apr	2,029.6	213.2	1,276.0	187.3	49.1
May	1,990.0	221.6	1,317.0	168.6	49.0
Jun	2,178.7	241.6	1,339.7	190.1	50.2
Jul	2,304.4	261.4	1,371.6	160.3	51.1
Aug	2,227.4	245.6	1,433.7	182.3	52.2
Sep	2,267.9	229.7	1,352.3	176.6	50.4
Oct	2,028.4	223.8	1,337.6	175.0	51.6
Nov	1,473.3	190.3	1,210.6	154.0	50.4
Dec	1,496.7	182.3	1,176.7	171.0	50.4
12 NCP avg.*	1,949.7	213.8	1,266.5	173.0	50.1

* Based on 12-month average NCP

2016
NON-COINCIDENT PEAK
AVERAGE KW PER CUSTOMER

Month	RS	GS	GSD	IS	LS
Jan	3.10	2.66	66.34	5,500.31	212.41
Feb	2.73	2.61	76.95	5,950.00	211.86
Mar	2.58	2.87	79.24	4,855.81	213.49
Apr	3.15	3.11	83.97	6,041.61	212.55
May	3.08	3.23	86.84	5,620.33	210.17
Jun	3.37	3.52	88.36	6,338.00	214.35
Jul	3.56	3.82	89.69	5,342.33	219.19
Aug	3.44	3.59	93.04	6,076.00	223.13
Sep	3.50	3.36	86.78	6,090.00	215.31
Oct	3.12	3.28	85.17	6,034.48	218.76
Nov	2.26	2.79	76.91	5,501.43	213.36
Dec	2.30	2.67	74.70	6,106.43	212.46

2016
NON-COINCIDENT PEAK
PRECISION (%)

Month	RS	GS	GSD	IS	LS
Jan	8.12	8.72	3.20	N/A	N/A
Feb	7.31	6.51	3.79	N/A	N/A
Mar	6.66	6.19	3.92	N/A	N/A
Apr	4.81	5.44	4.16	N/A	N/A
May	5.02	4.88	3.95	N/A	N/A
Jun	4.06	4.72	3.51	N/A	N/A
Jul	3.36	13.47	2.89	N/A	N/A
Aug	3.77	4.50	3.23	N/A	N/A
Sep	4.76	4.47	2.99	N/A	N/A
Oct	4.15	4.77	3.12	N/A	N/A
Nov	6.69	6.16	3.33	N/A	N/A
Dec	8.25	6.94	3.59	N/A	N/A

**2016
NON-COINCIDENT PEAK
LOAD FACTORS (%)**

Month	RS	GS	GSD	IS	LS
Jan	44	51	76	59	55
Feb	47	53	68	60	53
Mar	50	52	71	59	51
Apr	45	50	69	54	47
May	55	54	71	54	44
Jun	60	55	74	57	42
Jul	61	52	74	57	43
Aug	59	54	72	60	44
Sep	56	56	74	59	48
Oct	50	51	70	64	49
Nov	53	50	69	68	55
Dec	55	52	70	63	56
12 NCP Avg.*	53	53	71	60	49
Annual**	45	43	63	54	47

* Based on 12-month average NCP and annual energy

** Based on maximum annual NCP and annual energy

Customer Non-Coincident Tables

- Peak (MW)
- Average kW per Customer
- Precision (%)

2016
CUSTOMER NON-COINCIDENT PEAKS (MW)

Month	RS	GS	GSD	IS	LS
Jan	4,620.8	449.5	1,398.9	328.2	N/A
Feb	4,432.4	432.9	1,450.0	279.4	N/A
Mar	4,204.9	420.2	1,481.3	272.7	N/A
Apr	4,087.4	406.6	1,520.3	274.2	N/A
May	4,187.1	411.5	1,580.7	282.0	N/A
Jun	4,249.2	423.5	1,633.8	302.2	N/A
Jul	4,370.0	444.6	1,641.2	279.2	N/A
Aug	4,320.2	421.6	1,675.7	308.9	N/A
Sep	4,313.7	425.2	1,633.5	308.7	N/A
Oct	4,229.6	408.1	1,597.1	266.9	N/A
Nov	4,222.3	387.6	1,463.6	260.3	N/A
Dec	4,454.3	387.5	1,468.3	258.4	N/A

2016
CUSTOMER NON-COINCIDENT PEAK
AVERAGE KW PER CUSTOMER

Month	RS	GS	GSD	IS	LS
Jan	7.21	6.60	91.81	10,257.32	N/A
Feb	6.90	6.33	95.25	8,732.53	N/A
Mar	6.53	6.13	97.38	8,522.93	N/A
Apr	6.34	5.93	99.92	8,568.02	N/A
May	6.49	5.99	104.09	8,811.88	N/A
Jun	6.58	6.17	107.61	9,444.42	N/A
Jul	6.76	6.49	107.17	8,723.52	N/A
Aug	6.67	6.16	108.62	9,654.03	N/A
Sep	6.65	6.22	104.72	9,647.28	N/A
Oct	6.51	5.98	101.59	8,340.96	N/A
Nov	6.49	5.68	92.91	8,133.42	N/A
Dec	6.83	5.68	93.14	8,075.24	N/A

2016
CUSTOMER NON- COINCIDENT PEAK
PRECISION (%)

Month	RS	GS	GSD	IS	LS
Jan	4.64	8.30	4.14	N/A	N/A
Feb	4.10	7.92	4.02	N/A	N/A
Mar	3.90	9.77	4.07	N/A	N/A
Apr	3.83	7.98	3.77	N/A	N/A
May	3.69	4.78	3.45	N/A	N/A
Jun	3.56	4.82	3.17	N/A	N/A
Jul	3.40	8.34	3.26	N/A	N/A
Aug	3.59	4.58	3.28	N/A	N/A
Sep	3.58	6.71	3.18	N/A	N/A
Oct	3.51	4.73	3.30	N/A	N/A
Nov	4.63	4.92	3.29	N/A	N/A
Dec	4.38	8.35	3.56	N/A	N/A

Monthly Energy Tables

- Class Energy (MWH)
- Average kWh per Customer

2016
CLASS TOTAL
MONTHLY ENERGY (MWH)

Month	RS	GS	GSD	IS	LS
Jan	655,246	69,095	570,313	77,066	20,196
Feb	578,759	66,322	556,097	77,072	18,166
Mar	613,423	75,623	631,533	66,231	18,450
Apr	662,674	77,109	630,669	72,415	16,470
May	813,453	89,417	694,373	67,576	15,953
Jun	937,868	95,023	716,199	78,154	15,133
Jul	1,044,883	101,613	750,891	67,972	16,363
Aug	970,498	99,223	765,454	82,005	17,164
Sep	909,472	92,998	717,836	75,274	17,304
Oct	757,319	84,928	692,413	82,868	18,973
Nov	566,025	68,673	599,900	75,749	19,796
Dec	610,110	70,134	610,548	80,632	20,961
Total	9,119,729	990,160	7,936,225	903,015	214,929

Note: Totals may not add due to rounding.

2016
AVERAGE kWh PER CUSTOMER

Month	RS	GS	GSD	IS	LS
Jan	1,022	1,015	37,479	2,408,317	87,051
Feb	901	970	36,573	2,486,194	78,303
Mar	953	1,103	41,567	2,136,496	80,216
Apr	1,028	1,125	41,505	2,335,983	71,297
May	1,260	1,302	45,788	2,252,536	68,470
Jun	1,452	1,385	47,236	2,605,148	64,671
Jul	1,616	1,484	49,100	2,265,748	70,226
Aug	1,498	1,450	49,676	2,733,497	73,352
Sep	1,403	1,361	46,065	2,595,650	73,947
Oct	1,166	1,245	44,086	2,857,519	80,393
Nov	870	1,006	38,113	2,705,315	83,882
Dec	936	1,027	38,760	2,879,705	88,445