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May 2, 2018   Via electronic mail

Patti Daniel, Chief
Division of Economic Regulation
Bureau of Certification & Tariffs
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

RE: FPL 2017 Load Research Study

Dear Ms. Daniel:

In compliance with FPSC Rule 25-6.0437, enclosed is FPL's 2017 Load Research Study.

If you have any questions or require additional information about this filing, please call Tara Bachkosky at (561) 691-2391 or me at (561) 694-4184.

Sincerely,

/s/ *Tiffany Cohen*
Tiffany Cohen
Director, Rates and Tariffs

FLORIDA POWER & LIGHT COMPANY

**Load Research Study Results
Covering the Period from
January 1 through December 31, 2017
FPSC Rule 25-6.0437(7) F.A.C.**

May 2018

**Rates and Tariff Administration Department
Load Research Section**

Table of Contents

I. Purpose of the Study

The purpose of this load research study is to comply with the requirements of section (7) of the Florida Public Service Commission (FPSC) Rule No. 25-6.0437, Cost of Service Load Research. The Rule provides:

25-6.0437 Cost of Service Load Research.

(1) Applicability. This rule shall apply to all investor-owned electric utilities over which the Commission has jurisdiction and which provide electric service to more than 50,000 retail customers at the end of any calendar year.

(2) Purpose. The primary purpose of this rule is to require that load research that supports cost of service studies used in ratemaking proceedings is of sufficient precision to reasonably assure that tariffs are equitable and reflect the true costs of serving each class of customer. Load research data gathered and submitted in accordance with this rule will also be used by the Commission to allocate costs to the customer classes in cost recovery clause proceedings, in evaluating proposed and operating conservation programs, for research, and for other purposes consistent with the Commission's responsibilities.

(3) Sampling Plan. Within 90 days of becoming subject to this rule, each utility shall submit to the Commission a proposed load research sampling plan. The plan shall provide for sampling all rate classes that account for more than 1 percent of a utility's annual retail sales. The plan shall provide that all covered rate classes shall be sampled within two years of the effective date of this rule. The sampling plan shall be designed to provide estimates of the averages of the 12 monthly coincident peaks for each class within plus or minus 10 percent at the 90 percent confidence level. The sampling plan shall also be designed to provide estimates of the summer and winter peak demands for each rate class within plus or minus 10 percent at the 90 percent confidence level, except for the General Service Non-Demand rate class. The sampling plan shall be designed to provide estimates of the summer and winter peak demands for the General Service Non-Demand rate class within plus or minus 15 percent at the 90 percent confidence level.

(4) Review of Proposed Plan. Except where a utility has requested a formal ruling by the Commission, within 90 days after submission, the Commission's Division of Economic Regulation shall review each utility's plan to determine whether it satisfies the criteria set forth in subsection (3) above and shall notify the utility in writing of its decision accepting or rejecting the proposed sampling plan. If a proposed plan is rejected, the written notice of rejection shall state clearly the reasons for rejecting the proposed plan. If a utility's proposed plan is rejected, the utility shall submit a revised sampling plan to the Commission within 60 days after receiving the notice of rejection. Where a utility has requested staff review of its sampling plan and the plan has been rejected the utility may petition the Commission for approval of the plan. If a utility has not submitted a satisfactory sampling plan within 6 months following the submission of the initially proposed plan, the Commission may prescribe by order a sampling plan for the utility.

(5) Use of Approved Sampling Plan. The approved sampling plan shall be used for all load research performed for cost of service studies and other studies submitted to the Commission until a new sampling plan is approved by the Commission.

(6) Revised Sampling Plans. Each utility subject to this rule shall submit a current, revised sampling plan to the Commission no less often than every three years after the most recent sampling plan was required to be submitted. Any new or revised plan shall be developed using data from the utility's most current load research to determine the required sampling plan to achieve the precision required in subsection (3) of this rule. New or revised plans shall be reviewed by the Commission pursuant to subsection (4) of this rule.

(7) Load Research Data to be Reported. Each utility subject to this rule shall perform a complete load research study in accordance with the specifications of this rule no less often than every three years. Each utility shall, within 120 days following completion of the study, submit to the Commission the results of each load research study completed after the effective date of this rule. The submission shall include a detailed calculation of the average 12 coincident peak and class load factors for each covered rate class based upon the load research results.

(8) Hourly Data to be Available Upon Request. Each utility subject to this rule shall make available within 30 days of a request by the Commission the estimated hourly demands by class for all hours in the year derived from this load research.

The following table lists the rate classes included in this report and their respective annual retail billed sales and average customer population for 2017.

Rate Classes	2017 Annual Retail Billed Sales		2017 Average Population
	MWH	Percent	
RS(T)-1 Residential Service (RS-1 and RTR-1)	56,156,812	50.45%	4,335,267
GSD(T)-1 General Service Demand (GSD-1, GSDT-1, HLFT-1, SDTR-1A & SDTR-1B)	26,380,500	22.88%	104,660
GSLD(T)-1 General Service Large Demand 1 (500-1999 kW) (GSLD-1, GSLDT-1, CS-1, CST-1, HLFT-2, SDTR-2A and SDTR-2B)	10,268,185	8.91%	2,902
GS(T)-1 General Service Non-Demand (GS-1 & GST-1)	6,247,318	5.42%	432,201
CILC-1D Commercial/Industrial Load Control, Distribution	2,607,644	2.26%	275
GSLD(T)-2 General Service Large Demand 2 (2000+ kW) (GSLD-2, GSLDT-2, CS-2, CST-2, HLFT-3, SDTR-3A and SDTR-3B)	2,600,369	2.26%	152
CILC-1T Commercial/Industrial Load Control, Transmission	1,382,378	1.20%	17

For purposes of this study, the time-of-use rate schedules were combined with their associated non-time-of-use rate schedules. For example, General Service Demand (GSD-1), General Service Demand - Time of Use (GSDT-1), High Load Factor - Time of Use 1 (HLFT-1), Seasonal Demand - Time of Use Rider 1A (SDTR-1A) and Seasonal Demand - Time of Use Rider 1B (SDTR-1B) were analyzed as one class - see GSD(T)-1 above.

Due to their population sizes, the studies for the RS(T)-1, GSD(T)-1, GSLD(T)-1 and GS(T)-1 rate classes are based on statistical sampling. The other rate classes included in this report (i.e., CILC-1D, GSLD(T)-2 and CILC-1T) are 100 percent metered with recording meters for billing purposes and therefore do not require statistical sampling.

In accordance with section (3) of Rule 25-6.0437, the RS(T)-1, GSD(T)-1, GS(T)-1 and GSLD(T)-1 statistical samples were designed to provide estimates of the averages of the 12 monthly coincident peaks for each rate class within plus or minus 10 percent at the 90 percent confidence level. The sampling plan was also designed to provide estimates of the summer and winter peak demands for each rate class within plus or minus 10 percent at the 90 percent confidence level, except for the General Service Non-Demand (GS(T)-1) rate class. In accordance with section (3) of Rule 25-6.0437, the sampling plan for the GS(T)-1 rate class was designed to provide estimates of the summer and winter

peak demand within plus or minus 15 percent at the 90 percent confidence level.

II.   Sampling Methodology

This section summarizes the key elements of the load research sampling methodology used in this study.

Metering of Sampled Rate Classes

The sampled premises' conventional kilowatt-hour meters were replaced with Advanced Metering Infrastructure (AMI) or recorders under glass (RUG) meters to monitor electricity usage. When a selected premise has a solid-state data recording device (SSDR) meter or an AMI meter, no replacement with a RUG meter is required. The SSDR or RUG meter captures 15-minute pulse intervals as well as the same billing information as a standard kilowatt-hour meter. AMI electric meters capture 60-minute energy intervals while AMI demand meters capture 15-minute energy intervals.

The data from the AMI, SSDR or RUG meters was validated and processed in the Oracle Utilities Load Analysis (LODESTAR®) computer application. The interval load data was analyzed on a calendar month basis to derive the average load data, statistics and other related information contained in this report.

Sample Installation Procedure

The installed AMI meters are utilized to collect interval data. RUG meters are installed at premises in the sample where the AMI infrastructure was not available at the time of the sample rollout. Every effort is made to install a recording device on the premises that were selected as part of the original sample.

However, meter personnel may declare a selected premise location unsuitable if it appears that the recording equipment cannot be safely installed at the location. The basis for deeming a selected location unsuitable is communicated to the Load Research Section of the Rates and Tariff Administration Department. In turn, the Load Research Section provides the field personnel with a replacement from the list of alternate premises that was generated at the time the original sample was selected.

Premises with an ongoing current diversion investigation or a location where current diversion is discovered are excluded from the sample.

In order to ensure continuous recording of energy intervals, a new rate class sample group is installed prior to the removal of the existing study group. It is FPL's policy to have all meters for a new rate class sample installed and operating prior to the effective date of the new sample. The effective day for all new samples is January 1st.

AMI and RUG Replacement Procedure

In order to maintain the randomness of the sample, every effort is made to include the premises originally selected.   In situations where it becomes absolutely impossible to include the original premise, a replacement is picked from a list of alternates randomly selected at the same time the original sample was drawn. The selected replacement is the first available alternate on the list within the same stratum and district as the original sample. Section IV of this report provides the actual number of replacements for each sampled rate class.

A thirty (30) day waiting period is observed before a sampled premise is replaced due to account inactivity.

The status of each active sample premise is continuously monitored to ensure that they remain within the same rate class. If an active sample premise migrates to a different rate class, the sampled premise is replaced with an alternate.

Extrapolation Technique

The Stratified Combined Ratio technique is used at FPL for the RS(T)-1, GSD(T)-1, GS(T)-1 and GSLD(T)-1 sampled rate classes. This methodology calculates a "combined ratio" across all strata which is used to extrapolate to the rate class level by applying the ratio to the rate total billed energy. This technique produces demand estimates for the class; it does not produce stratum-level demand estimates.

The Non-Stratified Ratio extrapolation technique applies only to simple random samples (i.e., samples with no stratification) and 100% metered classes. In this report the Non-Stratified Ratio technique is used for CILC-1D, CILC-1T and GSLD(T)-2 rate classes.

III.   Sampling Plans

Sampling plans for the RS(T)-1, GSD(T)-1, GS(T)-1 and GSLD(T)-1 sampled rate classes were filed with and approved by the Commission's Division of Economic Regulation in accordance with Rule No. 25-6.0437. The sampling plans approved in those filings form the basis for the samples that were used for this study. Recording meters were installed on the electric service of the selected sampled premises consistent with the FPSC approved plans. The recording meters were in place and operational on or before December 31, 2016. The data used in this report covers the calendar months of 2017 (January 1, 2017 through December 31, 2017).

RS(T)-1 Residential Service
(RS-1 & RTR-1)

The sample used for this study was installed in 2014. Consistent with the sampling plan approved by the FPSC staff on May 12, 2014, a one-dimensional stratification random technique was used for the RS(T)-1 rate class. The technique involved stratification using an annual average monthly energy consumption (kWh). The most current energy consumption (kWh) data available prior to the sample implementation was used.   The customer population was divided into kWh strata break points based on the Dalenius-Hodges procedure.

Stratum	Strata Break Point	Population Size	Sample Points	Stratum Weight
1	0 to 700 kWh	1,453,569	147	0.35668
2	701 to 1,400 kWh	1,594,419	344	0.39124
3	1,401 to 2,500 kWh	861,072	254	0.21129
4	2,501 kWh and Above	166,247	86	0.04079
Total		4,075,307	831	1.00000

GSD(T)-1 General Service Demand
(GSD-1, GSDT-1, HLFT-1, SDTR-1A and SDTR-1B)

The sample used for this study was installed in 2016. Consistent with the sampling plan approved by the FPSC staff on May 12, 2014, a one-dimensional stratification random technique was used for the GSD(T)-1 rate class. The technique involved stratification using an annual average monthly energy consumption (kWh). The most current energy consumption (kWh) data available prior to the sample implementation was used. The customer population was divided into kWh strata break points based on the Dalenius-Hodges procedure.

Stratum	Strata Break Point	Population Size	Sample Points	Stratum Weight
1	0 to 16,000 kWh	69,440	253	0.69229
2	16,001 to 65,920 kWh	24,322	237	0.24248
3	65,921 kWh and Above	6,543	87	0.06523
Total		100,305	577	1.00000

GS(T)-1 General Service Non-Demand
(GS-1 & GST-1)

The sample used for this study was installed in 2015. Consistent with the sampling plan approved by the FPSC staff on May 12, 2014, a one-dimensional stratification random technique was used for the GS(T)-1 rate class. The technique involved stratification using an annual average monthly energy consumption (kWh). The most current energy consumption (kWh) data available prior to the sample implementation was used. The customer population was divided into kWh strata break points based on the Dalenius-Hodges procedure.

Stratum	Strata Break Point	Population Size	Sample Points	Stratum Weight
1	0 to 690 kWh	199,955	280	0.49652
2	691 to 1,800 kWh	112,697	130	0.27984
3	1,801 to 3,800 kWh	66,121	183	0.16419
4	3,801 kWh and Above	23,940	45	0.05945
Total		402,713	638	1.00000

GSLD(T)-1 General Service Large Demand 1
(GSLD-1, GSLDT-1, CS-1, CST-1, HLFT-2, SDTR-2A and SDTR-2B)

The sample used for this study was installed in 2016. Consistent with the sampling plan approved by the FPSC staff on May 12, 2014, a one-dimensional stratification random technique was used for the GSLD(T)-1 rate class. The technique was based on annual average monthly energy consumption (kWh). The most current energy consumption (kWh) data available at the time of the sample selection was used to determine the sample size. The customer population was divided into kWh strata break points based on the Dalenius-Hodges procedure.

Stratum	Strata Break Point	Population Size	Sample Points	Stratum Weight
1	0 to 282,100 kWh	1,840	72	0.61138
2	282,101 kWh and Above	1,170	52	0.38862
Total		3,010	124	1.00000

IV.   Sample Replacements

The following table shows the actual replacements installed for each sampled rate class through 12/31/17. The table also shows the year the original sample selection was installed, the sample size and the sample depth. The sample depth column consists of the original sampled premise plus the number of replacement premises drawn. The replacements were obtained from the original computer generated customer random sample selection list for each sampled rate class.

	Original Installation Year	Sample Size	Sample Depth	Actual Replacements Through 12/31/17
RS(T)-1 Residential Service	2014	831	51	51
GS(T)-1 General Service Non-Demand	2015	638	51	175
GSD(T)-1 General Service Demand	2016	577	51	105
GSLD(T)-1 General Service Large Demand 1	2016	124	21	43

V.   Study Results

This section contains the estimated coincident and non-coincident peak demands for January 1 through December 31, 2017 for all rate classes included in this report. Also included in this section, for the sampled rate classes, is the 90 percent confidence intervals around the monthly peak demands and their percent relative accuracy. The averages of the twelve monthly coincident peaks, their 90 percent confidence intervals, and their relative accuracy are computed for the twelve-month calendar period ending December 31, 2017. In addition, the annual class non-coincident and coincident peak load factors are computed using the 2017 annual retail billed sales provided on page 2 of this report. The statistics shown in this section were derived using the Oracle Utilities Load Analysis (LODESTAR®) computer system.

FPL's winter peak occurred on November 09, 2017 during the hour ending at 3:00 PM and the summer peak occurred on August 09, 2017 during the hour ending at 5:00 PM.

FPL met the target level of statistical accuracy of plus or minus 10 percent (15 percent for the GS(T)-1) at the 90 percent confidence level for the summer and winter peaks for the sampled rate classes. In addition, FPL met the target level of statistical accuracy for the estimate of averages of the 12 monthly coincident peaks for each class of plus or minus 10 percent at the 90 percent confidence level.

RS(T)-1 Residential Service
(RS-1 and RTR-1)

	Class Non-coincident Peak			Coincident Peak		
	Demand (MW)	Relative Accuracy	90% Confidence Interval	Demand (MW)	Relative Accuracy	90% Confidence Interval
Jan-17	9,826	4.26%	419	8,524	4.07%	347
Feb-17	8,784	4.31%	379	7,694	3.78%	291
Mar-17	8,961	3.92%	351	8,792	4.14%	364
Apr-17	9,935	3.82%	380	9,704	3.47%	337
May-17	11,407	2.74%	313	10,196	3.02%	308
Jun-17	13,239	2.42%	320	11,889	2.50%	297
Jul-17	12,278	2.49%	306	11,540	2.24%	258
Aug-17	12,602	2.59%	326	11,790	2.34%	276
Sep-17	13,259	6.07%	805	12,514	5.63%	705
Oct-17	13,059	2.53%	330	11,530	2.81%	324
Nov-17	10,274	4.01%	412	8,599	3.39%	292
Dec-17	8,696	5.08%	442	7,545	4.18%	315
Annual Peak	13,259					
Average of 12 CPs				10,026	1.89%	189
Load Factors	50.07%			66.21%		

GSD(T)-1 General Service Demand
(GSD-1, GSDT-1, HLFT-1, SDTR-1A and SDTR-1B)

	Class Non-coincident Peak			Coincident Peak		
	Demand (MW)	**Relative Accuracy**	**90% Confidence Interval**	**Demand (MW)**	**Relative Accuracy**	**90% Confidence Interval**
Jan-17	4,019	2.77%	111	4,019	2.77%	111
Feb-17	3,937	3.39%	133	3,888	3.15%	122
Mar-17	3,853	3.13%	121	3,614	2.73%	99
Apr-17	4,241	2.90%	123	4,047	2.48%	100
May-17	4,269	2.59%	111	4,145	2.57%	107
Jun-17	4,604	2.50%	115	4,367	2.07%	90
Jul-17	4,457	3.14%	140	4,377	2.63%	115
Aug-17	4,461	2.86%	128	4,186	2.75%	115
Sep-17	4,703	3.97%	187	4,697	4.51%	212
Oct-17	4,386	2.90%	127	4,275	2.72%	116
Nov-17	4,343	2.95%	128	4,329	2.88%	125
Dec-17	4,203	3.17%	133	4,197	3.18%	133
Annual Peak	4,703					
Average of 12 CPs				4,178	2.34%	98
Load Factors	64.03%			72.07%		

GSLD(T)-1 General Service Large Demand 1 (500-1999 kW)
(GSLD-1, GSLDT-1, CS-1, CST-1, HLFT-2, SDTR-2A and SDTR-2B)

	Class Non-coincident Peak			Coincident Peak		
	Demand (MW)	Relative Accuracy	90% Confidence Interval	Demand (MW)	Relative Accuracy	90% Confidence Interval
Jan-17	1,644	3.59%	59	1,484	4.23%	63
Feb-17	1,646	3.79%	62	1,593	3.33%	53
Mar-17	1,590	3.83%	61	1,433	3.30%	47
Apr-17	1,763	3.85%	68	1,618	3.37%	55
May-17	1,778	4.04%	72	1,677	3.79%	64
Jun-17	1,914	4.00%	77	1,680	3.01%	51
Jul-17	1,779	3.90%	69	1,694	3.60%	61
Aug-17	1,799	4.05%	73	1,572	3.41%	54
Sep-17	1,939	6.04%	117	1,884	5.78%	109
Oct-17	1,790	3.81%	68	1,728	3.48%	60
Nov-17	1,715	3.57%	61	1,704	3.42%	58
Dec-17	1,725	3.80%	66	1,709	3.77%	64
Annual Peak	1,939					
Average of 12 CPs				1,648	3.45%	57
Load Factors	60.47%			71.13%		

GS(T)-1 General Service Non Demand
(GS-1 & GST-1)

	Class Non-coincident Peak			Coincident Peak		
	Demand (MW)	Relative Accuracy	90% Confidence Interval	Demand (MW)	Relative Accuracy	90% Confidence Interval
Jan-17	1,124	5.56%	62	1,124	5.56%	62
Feb-17	1,054	6.19%	65	1,038	6.14%	64
Mar-17	1,039	5.73%	60	965	5.56%	54
Apr-17	1,181	4.99%	59	1,120	4.92%	55
May-17	1,220	4.80%	59	1,202	4.66%	56
Jun-17	1,344	4.31%	58	1,232	4.02%	50
Jul-17	1,306	4.11%	54	1,297	3.97%	51
Aug-17	1,267	4.28%	54	1,182	3.94%	47
Sep-17	1,317	8.46%	111	1,243	8.57%	107
Oct-17	1,230	4.36%	54	1,216	4.33%	53
Nov-17	1,115	5.11%	57	1,104	5.03%	56
Dec-17	1,050	6.08%	64	1,024	6.10%	62
Annual Peak	1,344					
Average of 12 CPs				1,145	4.48%	51
Load Factors	53.06%			62.26%		

CILC-1D Commercial/Industrial Load Control, Distribution

	Class Non-coincident Peak	Coincident Peak
	Demand	Demand
	(MW)	(MW)
Jan-17	349	342
Feb-17	337	336
Mar-17	318	308
Apr-17	352	337
May-17	344	338
Jun-17	367	349
Jul-17	361	353
Aug-17	348	328
Sep-17	372	365
Oct-17	344	338
Nov-17	343	337
Dec-17	341	329
Annual Peak	372	
Average of 12 CPs		338
Load Factors	80.01%	87.97%

GSLD(T)-2 General Service Large Demand 2 (2000 kW +)
(GSLD-2, GSLDT-2, CS-2, CST-2, HLFT-3, SDTR-3A and SDTR-3B)

	Class Non-coincident Peak	Coincident Peak
	Demand (MW)	Demand (MW)
Jan-17	370	367
Feb-17	351	327
Mar-17	335	304
Apr-17	346	323
May-17	354	318
Jun-17	381	345
Jul-17	374	347
Aug-17	370	335
Sep-17	398	378
Oct-17	381	356
Nov-17	365	363
Dec-17	359	359
Annual Peak	398	
Average of 12 CPs		343
Load Factors	74.64%	86.42%

CILC-1T Commercial/Industrial Load Control, Transmission

	Class Non-coincident Peak	Coincident Peak
	Demand	Demand
	(MW)	(MW)
Jan-17	179	148
Feb-17	179	154
Mar-17	182	166
Apr-17	183	168
May-17	185	154
Jun-17	193	171
Jul-17	189	164
Aug-17	201	168
Sep-17	179	159
Oct-17	188	166
Nov-17	181	166
Dec-17	180	171
Annual Peak	201	
Average of 12 CPs		163
Load Factors	78.56%	96.93%