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VIA ELECTRONIC FILING

Mr. Adam J. Teitzman
Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: Docket No. 20240000-OT
Florida Power & Light Company – 2023 Load Research Study

Dear Mr. Teitzman:

Pursuant to Rule 25-6.0437(7), F.A.C., enclosed for filing on behalf of Florida Power & Light Company is the Load Research Study for the period of January 1, 2023 through December 31, 2023.

Should you have any questions concerning this filing, please contact **Tara B. DuBose, Sr. Manager, Cost of Service and Wholesale, at (561) 691-2391.**

Respectfully submitted,

/s Christopher T. Wright
Christopher T. Wright
Fla. Auth. House Counsel No. 1007055

Enclosures

cc: Elisabeth Draper, Chief, Division of Economics (via email: EDraper@PSC.STATE.FL.US)

FLORIDA POWER & LIGHT COMPANY

**Load Research Study Results
Covering the Period from
January 1 through December 31, 2023
Rule 25-6.0437(7), F.A.C.**

May 2024

**Regulatory Accounting Department
Load Research Section**

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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 25-6.0437, Florida Administrative Code. 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.

Specific Authority 366.05(1), 350.127(2) FS. Law Implemented 350.117, 366.03, 366.04(2)(f), 366.05(1), 366.06(1), 366.82(3), (4) FS. History— New 3-11-84, Formerly 25-6.437, Amended 1-6-04.

The following table lists the rate classes included in this report and their respective annual retail billed sales and average customer population for 2023.

TABLE 1

Rate Classes	2023 Annual Retail Billed Sales		2023 Average Population
	MWH	Percent	
RS(T)-1 Residential Service (RS-1, RSFB, RS-1(EV) and RTR-1)	70,161,113	54.85%	5,175,340
GS(T)-1 General Service Non-Demand (GS-1 & GST-1)	8,206,644	6.42%	533,409
GSD(T)-1 General Service Demand (GSD-1, GSDT-1, GSD-1EV, HLFT-1, UEV, SDTR-1A & SDTR-1B)	29,137,716	22.78%	102,141
GSLD(T)-1 General Service Large Demand 1 (500-1999 kW) (GSLD-1, GSLDT-1, GSLD-1EV, CS-1, CST-1, HLFT-2, SDTR-2A and SDTR-2B)	10,822,084	8.46%	3,028
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)	3,696,033	2.89%	186
CILC-1D Commercial/Industrial Load Control, Distribution	2,520,872	1.97%	248
CILC-1T Commercial/Industrial Load Control, Transmission	1,389,368	1.09%	15
All Other Rate Classes ¹	1,969,963	1.54%	
Total	127,903,793	100%	

¹ Each rate class in this category falls below the 1% of annual retail sales criterion. Thus, load research sampling plans are not required.

For purposes of this study, optional rate schedules within the same rate class, were combined. For example, General Service Demand (GSD-1), General Service Demand - Time of Use (GSDT-1), Electric Vehicle Charging Infrastructure Rider Pilot (GSD-1EV),

High Load Factor - Time of Use 1 (HLFT-1), Utility-Owned Public Charging for Electric Vehicles Pilot (UEV), Seasonal Demand - Time of Use Rider 1A (SDTR-1A) and Seasonal Demand - Time of Use Rider 1B (SDTR-1B) were analyzed as one class—GSD(T)-1.

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

In accordance with section (3) of Rule 25-6.0437, the RS(T)-1, GS(T)-1, GSD(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 use Advanced Metering Infrastructure (AMI) meters to monitor electricity usage. AMI electric meters capture 60-minute energy intervals while AMI demand meters capture 15-minute energy intervals.

The data from the AMI meters was validated and processed in the Oracle Utilities Load Analysis (OULA) 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 collect interval data.

To ensure continuous recording of energy intervals, a new rate class sample group is deployed prior to the removal of the existing study group. Due to FPL's use of AMI meters, deploying a new sample group does not require changing a meter. The effective day for

all new samples is January 1st.

AMI Replacement Procedure

To maintain the randomness of the sample, every effort is made to include the premises originally selected. In situations where it becomes impossible to include the original premise, a replacement is selected 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.

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

FPL uses the Stratified Combined Ratio extrapolation technique for the RS(T)-1, GS(T)-1, GSD(T)-1, and GSLD(T)-1 sampled rate classes. This methodology calculates a "combined ratio" across all strata, which is then used to extrapolate to the rate class level by applying the ratio to the rate class 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 percent studied classes. In this report, the Non-Stratified Ratio technique is used for GSLD(T)-2 and CILC-1D rate classes.

The CILC-1T rate class uses the Non-Stratified Mean Per Unit (MPU) extrapolation method. This method estimates the total rate class demand by multiplying the number of customers in the rate class by the average demand for each interval recorded. Finally, the unmetered rate classes, such as certain street light classes, are modeled based on their equipment usage characteristics.

III. Sampling Plans

Revised sampling plans for the RS(T)1, GS(T)1, GSD(T)1, and GSLD(T)1 sampled rate classes filed on November 22, 2022, were approved by the FPSC's Division of Economic Regulation (Staff) in accordance with Rule 25.60437 on February 20, 2023. The sampling plans approved in those filings form the basis for the samples that were used for this study. Consistent with the FPSC-approved plans, interval data from AMI meters of the selected sampled premises were obtained for load research. The AMI meter data studied was identified for the period beginning January 1, 2022. The data used in this report

covers the calendar months of January 1, 2023, through December 31, 2023.

RS(T)-1 Residential Service
(RS-1, RSFB, RS-1(EV) and RTR-1)

The sample used for this study was installed in 2022. Consistent with the sampling plan approved by the Staff on February 20, 2023, the RS(T)-1 rate class used a one-dimensional stratification random technique. The technique stratified the sample based on 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 715 kWh	1,713,045	182	0.34048
2	716 to 1,313 kWh	1,846,376	196	0.36698
3	1,314 to 2,288 kWh	1,169,393	196	0.23242
4	2,289 kWh and above	302,487	196	0.06012
Total		5,031,301	770	1.00000

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

The sample used for this study was installed in 2022. Consistent with the sampling plan approved by the Staff on February 20, 2023, the GS(T)-1 rate class used a one-dimensional stratification random technique. The technique stratified the sample based on 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 790 kWh	274,395	190	0.53175
2	791 to 2,000 kWh	139,237	135	0.26983
3	2,001 to 4,500 kWh	78,185	155	0.15151
4	4,501 kWh and above	24,205	150	0.04691
Total		516,022	630	1.00000

GSD(T)-1 General Service Demand**(GSD-1, GSDT-1, GSD-1EV, HLFT-1, UEV, SDTR-1A & SDTR-1B)**

The sample used for this study was installed in 2022. Consistent with the sampling plan approved by the Staff on February 20, 2023, the GSD(T)-1 rate class used a one-dimensional stratification random technique. The technique stratified the sample based on 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 17,600 kWh	69,443	112	0.67070
2	17,601 to 68,480 kWh	26,582	136	0.25677
3	68,481 kWh and above	7,508	136	0.07253
Total		103,523	384	1.00000

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

The sample used for this study was installed in 2022. Consistent with the sampling plan approved by the Staff on February 20, 2023, the GSLD(T)-1 rate class used a one-dimensional stratification random technique. The technique stratified the sample 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 296,000 kWh	1,835	128	0.62394
2	296,001 kWh and above	1,106	256	0.37606
Total		2,941	124	1.00000

IV. Sample Replacements

The following table shows the actual replacements installed for each sampled rate class through December 31, 2023. 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 12/31/23
RS(T)-1 Residential Service	2022	770	51	737
GS(T)-1 General Service Non-Demand	2022	630	51	520
GSD(T)-1 General Service Demand	2022	384	51	213
GSLD(T)-1 General Service Large Demand 1	2022	384	21	164

V. Study Results

This section contains the estimated coincident and non-coincident peak demands for January 1, 2023, through December 31, 2023, for all rate classes included in this report. The 90 percent confidence intervals around the monthly peak demands and their percent relative accuracy are also presented for the sample rate classes. The averages of the twelve-monthly coincident peaks, their 90 percent confidence intervals, and their relative accuracy were computed for the twelve-month calendar period ending December 31, 2023. The annual class non-coincident and coincident peak load factors were computed using the 2023 annual retail billed sales provided on page 2 of this report. The statistics shown in this section were derived using the OULA computer application.

FPL's winter peak occurred on March 27, 2023, during the hour ending at 5:00 PM and the summer peak occurred on August 8, 2023, during the hour ending at 4:00 PM.

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

RS(T)-1 Residential Service
(RS-1, RSFB, RS-1(EV) and RTR-1)

	Class Non-Coincident Peak			Coincident Peak		
	Demand (MW)	Relative Accuracy	90% Confidence Interval	Demand (MW)	Relative Accuracy	90% Confidence Interval
Jan-23	12,835	6.06%	777	11,825	6.43%	760
Feb-23	11,404	3.24%	370	10,247	3.65%	374
Mar-23	12,266	3.40%	418	11,258	3.23%	364
Apr-23	12,624	2.93%	370	12,177	3.07%	373
May-23	12,145	2.99%	363	11,551	2.87%	332
Jun-23	14,403	2.66%	384	14,177	2.55%	362
Jul-23	15,208	2.59%	393	14,413	2.62%	377
Aug-23	16,221	2.39%	387	15,004	2.28%	342
Sep-23	16,047	2.18%	349	15,821	2.13%	338
Oct-23	14,213	2.52%	358	13,630	2.76%	376
Nov-23	12,505	3.01%	376	11,978	3.25%	389
Dec-23	10,978	4.08%	448	10,797	4.13%	446
<u>Annual Peak</u>	16,221					
<u>Average of 12 CP's</u>				12,740	1.83%	233
<u>Load Factors</u>	49.38%			62.87%		

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-23	1,283	4.67%	60	800	7.49%	60
Feb-23	1,423	4.18%	60	1,295	4.30%	56
Mar-23	1,406	4.16%	58	1,316	4.47%	59
Apr-23	1,510	3.67%	55	1,333	3.88%	52
May-23	1,458	3.93%	57	1,408	4.01%	56
Jun-23	1,673	3.63%	61	1,604	3.68%	59
Jul-23	1,685	3.41%	58	1,641	3.37%	55
Aug-23	1,753	3.50%	61	1,723	3.48%	60
Sep-23	1,847	3.30%	61	1,753	3.51%	62
Oct-23	1,640	3.93%	64	1,566	3.84%	60
Nov-23	1,472	4.22%	62	1,440	4.20%	60
Dec-23	1,278	4.95%	63	961	5.12%	49
<u>Annual Peak</u>	1,847					
<u>Average of 12 CP's</u>				1,403	3.40%	48
<u>Load Factors</u>	50.74%			66.76%		

GSD(T)-1 General Service Demand

(GSD-1, GSDT-1, GSD-1EV, HLFT-1, UEV, SDTR-1A & SDTR-1B)

	Class Non-Coincident Peak			Coincident Peak		
	Demand	Relative	90% Confidence	Demand	Relative	90% Confidence
	(MW)	Accuracy	Interval	(MW)	Accuracy	Interval
Jan-23	4,088	3.40%	139	2,895	4.98%	144
Feb-23	4,514	3.68%	166	4,170	2.98%	124
Mar-23	4,287	3.28%	141	4,149	2.80%	116
Apr-23	4,695	3.23%	152	4,337	3.91%	170
May-23	4,510	2.81%	127	4,304	2.34%	101
Jun-23	4,964	2.60%	129	4,820	2.16%	104
Jul-23	5,053	2.18%	110	4,913	1.92%	95
Aug-23	5,232	2.19%	115	5,134	2.02%	104
Sep-23	5,426	2.19%	119	5,095	1.98%	101
Oct-23	5,034	3.24%	163	4,743	2.11%	100
Nov-23	4,567	2.65%	121	4,457	2.61%	116
Dec-23	4,322	3.69%	160	3,600	2.85%	102
<u>Annual Peak</u>	5,426					
<u>Average of 12 CP's</u>				4,385	1.96%	86
<u>Load Factors</u>	61.30%			75.86%		

GSLD(T)-1 General Service Large Demand 1 (500-1999 kW)

(GSLD-1, GSLDT-1, GSLD-1EV, CS-1, CST-1, HLFT-2, SDTR-2A and SDTR-2B)

	Class Non-Coincident Peak			Coincident Peak		
	Demand	Relative	90%	Demand	Relative	90%
	(MW)	Accuracy	Confidence	(MW)	Accuracy	Confidence
			Interval			Interval
Jan-23	1,423	2.91%	41	970	3.40%	33
Feb-23	1,653	2.35%	39	1,538	1.84%	28
Mar-23	1,561	2.72%	42	1,476	2.35%	35
Apr-23	1,616	2.43%	39	1,483	2.10%	31
May-23	1,537	2.71%	42	1,383	2.09%	29
Jun-23	1,568	2.32%	36	1,518	2.15%	33
Jul-23	1,678	2.31%	39	1,573	1.96%	31
Aug-23	1,806	2.13%	39	1,755	1.99%	35
Sep-23	1,892	2.12%	40	1,762	1.62%	29
Oct-23	1,790	2.48%	44	1,611	1.76%	28
Nov-23	1,620	2.67%	43	1,534	2.30%	35
Dec-23	1,552	3.27%	51	1,229	2.65%	33
<u>Annual Peak</u>	1,892					
<u>Average of 12 CP's</u>				1,486	1.51%	22
<u>Load Factors</u>	65.29%			83.14%		

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)

	<u>Class Non-Coincident Peak</u>	<u>Coincident Peak</u>
	Demand (MW)	Demand (MW)
Jan-23	423	346
Feb-23	508	497
Mar-23	442	426
Apr-23	502	480
May-23	476	436
Jun-23	483	477
Jul-23	551	537
Aug-23	581	532
Sep-23	581	562
Oct-23	598	544
Nov-23	531	528
Dec-23	488	416
<u>Annual Peak</u>	598	
<u>Average of 12 CP's</u>		482
<u>Load Factor</u>	70.50%	87.59%

**CILC-1D Commercial/Industrial Load Control,
Distribution**

	<u>Class Non-Coincident Peak</u>	<u>Coincident Peak</u>
	Demand (MW)	Demand (MW)
Jan-23	270	226
Feb-23	339	329
Mar-23	313	304
Apr-23	331	314
May-23	312	293
Jun-23	341	331
Jul-23	344	328
Aug-23	366	328
Sep-23	353	338
Oct-23	359	339
Nov-23	319	312
Dec-23	326	274
<u>Annual Peak</u>	366	
<u>Average of 12 CP's</u>		310
<u>Load Factor</u>	78.66%	92.90%

CILC-1T Commercial/Industrial Load Control, Transmission

	<u>Class Non-Coincident Peak</u>	<u>Coincident Peak</u>
	Demand	Demand
	(MW)	(MW)
Jan-23	185	170
Feb-23	177	165
Mar-23	183	148
Apr-23	183	144
May-23	182	160
Jun-23	176	145
Jul-23	194	177
Aug-23	187	163
Sep-23	195	157
Oct-23	154	124
Nov-23	191	176
Dec-23	190	172
<u>Annual Peak</u>	195	
<u>Average of 12 CP's</u>		159
<u>Load Factor</u>	81.17%	100.04%