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November 22, 2022

VIA ELECTRONIC FILING

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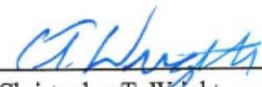2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

> **Re: Docket No. 20220000-OT**
> **Florida Power & Light Company – 2022 Load Research Sampling Plan**

Dear Mr. Teitzman:

On November 4, 2022, Florida Power & Light Company ("FPL") filed its Load Research Sampling Plan pursuant to Rule 25-6.0437, F.A.C. Subsequently, it was determined that FPL's Load Research Sampling Plan contained inadvertent pagination and internal cross-reference errors. Enclosed for filing is a corrected version of FPL's Load Research Sampling Plan for the approval of sample deployments for the year 2022.

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,

Christopher T. Wright
Authorized House Counsel No. 1007055

Enclosures

Cc: Judy Harlow, Director of Economics
Elisabeth Draper, Chief of Economic Impact & Rate Design
Bill McNulty, Chief of Conservation & Forecasting

FLORIDA POWER & LIGHT COMPANY

Load Research Sampling Plan
Rule 25-6.0437, Florida Administrative Code
(Corrected)

November 22, 2022

Rates and Tariff Administration Department
Load Research Section

FLORIDA POWER & LIGHT COMPANY

2022 Load Research Sampling Plan
(Corrected)

Table of Contents

I. INTRODUCTION

Florida Power & Light Company (FPL) filed its last Load Research Sampling Plan on May 1, 2020. The Commission Staff approved the 2020 Plan on June 8, 2020. This 2022 Load Research Sampling Plan is being submitted by FPL in compliance with Rule 25-6.0437, Florida Administrative Code (Rule). This Plan includes the consolidated population of FPL and former Gulf Power Company customers who are now served under FPL rate schedules.

The Rule is applicable to electric utilities that provide electric service to more than 50,000 retail customers at the end of any calendar year, and requires those utilities to sample all rate classes that account for more than 1 percent of a utility's annual retail sales. The Rule further provides that 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. The Rule also requires the filing of a revised sampling plan to the Commission no less often than every three years after the most recent sampling plan was required to be submitted.

This report summarizes FPL's proposed 2022 sample plan designs for the following rate classes:

RS(T)-1: Residential Service (RS-1 & RTR-1)
GS(T)-1: General Service Non-Demand (GS-1 & GST-1)
GSD(T)-1: General Service Demand (GSD-1, GSDT-1, HLFT-1, SDTR-1A & SDTR-1B)
GSLD(T)-1: General Service Large Demand (GSLD-1, GSLDT-1, CS-1, CST-1, HLFT-2, SDTR-2A & SDTR-2B)

As shown on Table 1, the total population of all other rate classes meeting the "more than 1%" of annual retail sales criterion is 100% studied and, therefore, does not require statistical sampling.

Consistent with FPL's previously approved sampling plans, for purposes of this plan the related time-of-use (TOU), non-time-of-use rate classes and other related rate schedules were combined. For example, GSD-1 (General Service Demand), GSDT-1 (General Service Demand TOU), HLFT-1 (High Load Factor TOU) and SDTR-1 (Seasonal Demand TOU A & B) rate schedules are treated as one class [GSD(T)-1].

TABLE 1

FPL Consolidated Retail Sales Rate Class	2021 Annual Retail Billed Sales		Data Collection Process
	MWH	**Percent**	
RS(T)-1 Residential Service: RS-1 and RTR-1	67,158,659	54.62%	Sampling Plan
GS(T)-1 General Service Non-Demand: GS-1 and GST-1	6,985,194	5.68%	Sampling Plan
GSD(T)-1 General Service Demand: GSD-1, GSDT-1, HLFT-1, SDTR-1A and SDTR-1B	29,292,813	23.82%	Sampling Plan
GSLD(T)-1 General Service Large Demand 1 (500 to 1,999 kW): GSLD-1, GSLDT-1, CS-1, CST-1, HLFT-2, SDTR-2A and SDTR-2B	9,910,214	8.06%	Sampling Plan
GSLD(T)-2 General Service Large Demand 1 (2,000 + kW): GSLD-2, GSLDT-2, CS-2, CST-2, HLFT-3, SDTR-3A and SDTR-3B	3,384,341	2.75%	100% Studied
CILC-1D Commercial/Industrial Load Control, Distribution	2,525,958	2.05%	100% Studied
CILC-1T Commercial/Industrial Load Control, Transmission	1,529,567	1.24%	100% Studied
All Other Rate Classes[1]	2,111,116	1.76%	Not Applicable
Total	122,897,862	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 under the Rule.

II. PROPOSED SAMPLING PLAN DESIGN METHODOLOGY

The sampling plan methodology proposed in this plan no longer utilizes the three-year replacement cycle previously used by FPL. Instead, the sample plan submitted for the load research sampling points in the RS(T)-1, GS(T)-1, GSD(T)-1, and GSLD(T)-1 rate class samples will be updated every 3 years consistent with the express requirements of the Rule.

The proposed sampling plan was developed using FPL's most currently available load research data and seasonal peak information. To ensure that a sufficient number of sample points would be selected for a particular study, the minimum requirements for each stratum were increased by a whole number multiple. This also ensures the proportions calculated between the strata are maintained in accordance with the minimum sample design.

Based on the results obtained from this data, FPL proposes to continue the use of the following types of sample designs:

A one-dimensional stratified random design based on the annual average monthly energy for the RS(T)-1, GS(T)-1, GSD(T)-1, and GSLD(T)-1 rate classes.

The sample sizes reported herein are designed to meet accuracy requirements of the Rule based on the requisite confidence level and expected data loss factors, while simultaneously minimizing costs.

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

A one-dimensional stratified random sample design process was used for the RS(T)-1 rate class. The customer population was stratified based on the average monthly energy consumption (kWh) for the period July 2021 to June 2022.

Stratum breakpoints were defined using the Dalenius-Hodges method. This process generated four strata based on energy consumption:

1. 0 to 715 kWh
2. 716 to 1,313 kWh
3. 1,314 to 2,288 kWh
4. 2,289 kWh and Above

Stratum Number	Stratum Range (kWh)	Stratum Population	Stratum Weights	Suggested Sample Size
1	0 – 715	1,713,045	0.34048	182
2	716 – 1,313	1,846,376	0.36698	196
3	1,314 – 2,288	1,169,393	0.23242	196
4	2,289+	302,487	0.06012	196

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

A one-dimensional stratified random sample design process was used for the GS(T)-1 rate class. The customer population was stratified based on the average monthly energy consumption (kWh) for the period July 2021 to June 2022.

Stratum breakpoints were defined using the Dalenius-Hodges method. This process generated four strata based on energy consumption:

1. 0 to 790 kWh
2. 791 to 2,000 kWh
3. 2,001 to 4,500 kWh
4. 4,501 kWh and Above

Stratum Number	Stratum Range (kWh)	Stratum Population	Stratum Weights	Suggested Sample Size
1	0 – 790	274,395	0.53175	190
2	791 – 2,000	139,237	0.26983	135
3	2,001 – 4,500	78,185	0.15151	155
4	4,501+	24,205	0.04691	150

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

A one-dimensional stratified random sample design process was used for the GSD(T)-1 rate class. The customer population was stratified based on the average monthly energy consumption (kWh) for the period July 2021 to June 2022.

Stratum breakpoints were defined using the Dalenius-Hodges method. The process generated three strata based on energy consumption, which are as follows:

1.   0 to 17,600 kWh
2.   17,601 to 68,480 kWh
3.   68,481 kWh and Above

Stratum Number	Stratum Range (kWh)	Stratum Population	Stratum Weights	Suggested Sample Size
1	0 – 17,600	69,433	0.67070	112
2	17,601 – 68,480	26,582	0.25677	136
3	68,481+	7,508	0.07253	136

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

A one-dimensional stratified random sample design process was used for the GSLD(T)-1 rate class. The customer population was stratified based on the average monthly energy consumption (kWh) for the period July 2021 to June 2022.

Stratum breakpoints were defined using the Dalenius-Hodges method. This process generated two strata based on energy consumption:

1. 0 to 296,000 kWh
2. 296,001 kWh and Above

Stratum Number	Stratum Range (kWh)	Stratum Population	Stratum Weights	Suggested Sample Size
1	0 – 296,000	1,835	0.62394	128
2	296,001+	1,106	0.37606	256

III.   PROPOSED SAMPLING PLAN SUMMARY

The following table lists the expected number of sample points by stratum and deployment year for each rate class:

Rate Class	Sample Points	# of Strata	Deployment Year
RS(T)-1	770	4	2022
GS(T)-1	630	4	2022
GSD(T)-1	384	3	2022
GSLD(T)-1	384	2	2022

Please refer to Table 2 for definitions of variables and indices and Table 3 for formulas used in the design and estimation of these samples.

TABLE 2

DEFINITIONS OF VARIABLES AND INDICES

YBAR	=	Existing sample mean coincident demand (kW)
XBAR	=	Existing sample mean energy (kWh)
R	=	Ratio of mean coincident demand to mean energy for the existing sample
h	=	Index for each strata within the sample
i	=	Index for each customer
Y_{hi}	=	Coincident demand for each customer "I" in stratum "h"
X_{hi}	=	Energy for each customer "i" in stratum "h"
nc_h	=	Number of customers in the existing sample in stratum "h"
SDR_h	=	Standard deviation of the residuals in stratum "h"
W_h	=	Stratum "h" weight
P	=	Precision (0.10 for RS, GSD & GSLD and 0.15 for GS)
$Z_{\alpha/2}$	=	Two tailed normal variate (1.645 for 90% confidence)
n	=	Required new sample size
N_h	=	Stratum "h" population (customers)
n_h	=	Required new sample size for stratum "h"

TABLE 3

FORMULAS USED IN SAMPLE DESIGNS

I.   Calculations using rate load research data (Refer to Table 2 for definitions):

$$YBAR = \sum_h W_h x \left[\frac{\sum_i Y_{hi}}{nc_h} \right] \qquad XBAR = \sum_h W_h x \left[\frac{\sum_i X_{hi}}{nc_h} \right] \qquad R = \frac{YBAR}{XBAR}$$

$$SDR_h = \sqrt{\frac{\sum_i (Y_{hi} - Rx X_{hi})^2}{nc_h - 1}}$$

II.   Sample size calculation (Refer to Table 2 for definitions):

$$n = \frac{\left[\sum_h (W_h x SDR_h) \right]^2}{\left[\frac{PxYBAR}{Z_{\alpha/2}} \right]^2 + \frac{\sum_h (W_h x SDR_h^2)}{\sum_h N_h}}$$

$$n_h = \left[\frac{W_h x SDR_h}{\sum_h W_h x SDR_h} \right] xn$$

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