![Duke Energy Florida logo]

**Matthew R. Bernier**
ASSOCIATE GENERAL COUNSEL

July 15, 2019

**VIA ELECTRONIC FILING**

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

Re: *Duke Energy Florida, LLC's Load Research Sample Plan; Undocketed*

Dear Mr. Teitzman:

Pursuant to Rule 25-6.0437, F.A.C, on behalf of Duke Energy Florida, LLC ("DEF"), please find enclosed for review and approval, DEF's Load Research Sample Plan. The load research sampling period will be April 1, 2020 through March 31, 2021. In accordance with Rule 25-6.0437 F.A.C, the final load research report will be filed on or before July 31, 2021. Please notify me at your earliest convenience of the results of Staff's review of the plan to allow time for implementation.

Thank you for your assistance in this matter. Please feel free to call me at (850) 521-1428 should you have any questions concerning this filing.

Sincerely,

*/s/ Matthew R. Bernier*

Matthew R. Bernier

MRB/cmk
Enclosures

cc: Judy G. Harlow (jharlow@psc.state.fl.us)

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**DUKE ENERGY FLORIDA, LLC'S**
**LOAD RESEARCH SAMPLING PLAN**

**FOREWORD**

The following load research sampling plan is being submitted by Duke Energy Florida ("DEF") in compliance with Rule 25-6.0437, Florida Administrative Code ("F.A.C").

Section 3 of the Rule specifies that the plan shall provide for sampling all rate classes that account for more than one percent of a utility's annual retail sales. It also specifies that the sampling plan be designed to provide estimates of the averages of the 12 monthly coincident peaks for each rate class within plus or minus 10% at the 90% 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% at the 90% confidence level, except for the General Service Non-Demand rate class which shall be designed to provide estimates of the summer and winter peak demands within plus or minus 15% at the 90% confidence level.

**STUDY PERIOD**

The proposed sampling plan will be implemented during the 4th quarter 2019 and the 1st quarter 2020 with data collection commencing on April 1, 2020, and continuing through March 31, 2021.

**APPLICABLE RATE CLASSES**

The following table provides the annual retail sales by rate class for DEF for twelve months ending December 2018. The applicable rate classes account for more than one percent of DEF's retail sales.

**PERCENT OF RETAIL SALES BY RATE CLASS**
**12 months ending December 2018**

| Rate Class | Percent of Sales |
|---|---|
| **Residential (RS)** | **59.0** |
| **General Service Non-Demand (GS)** | **6.8** |
| **General Service Demand (GSD)** | **30.4** |
| Curtailable (CS) | 0.1 |
| **Interruptible (IS)** | **2.7** |
| Firm Standby Service (SS-1) | 0.1 |
| Interruptible Standby Service (SS-2) | 0.2 |
| Curtailable Standby Service (SS-3) | 0.1 |
| Lighting | 0.6 |
| **Total** | **100** |

## PROPOSED SAMPLING PLAN

With the implementation of smart meter technology in DEF, interval data is more easily accessible, so sample sizes for some rate classes were increased over sample sizes in the previous study. Therefore, missing load profile data will have less impact on the estimates.

**Residential (RS) Rate Class**

Using DEF's billing records, the residential sample was stratified on Winter and Summer billed kWh. Because of the large number of residences on load management, the residential sample was further stratified by the standard residential rate and load management rate. Strata breakpoints were selected using the Dalenius-Hodges cumulative square root "uf" technique. A Neyman Allocation was used to determine the sample size. The residential sample size and stratum allocations are outlined in the following table for a total sample size of 570.

| Stratum | Winter Low (<= 1,200 kWh) | Winter High (> 1,200 kWh) |
|---|---|---|
| RS Standard Summer Low (<= 1,600 kWh) | 100 | 50 |
| RS Standard Summer High (> 1,600 kWh) | 50 | 110 |
| RS LM Summer Low (<= 1,500 kWh) | 80 | 60 |
| RS LM Summer High (> 1,500 kWh) | 50 | 70 |
| **Total** | **280** | **290** |

**General Service Non-Demand (GS) Rate Class**

The GS Rate Class was stratified by average Summer billed kWh and revenue class (commercial, public authority, and industrial). The strata breakpoints were selected using the Dalenius-Hodges cumulative square root "uf" technique. Neyman allocation was used to calculate the strata sample size. The number of strata were increased due to the accessibility of interval data from smart meters. The largest customers were identified and included in a census stratum. The General Service sample size and stratum allocations are outlined in the following table for a total sample size of 855.

| Cell (Stratum) | Sample Size |
|---|---|
| Commercial: Summer kWh <= 650 | 80 |
| Commercial: Summer kWh > 650, but <= 1,600 | 60 |
| Commercial: Summer kWh > 1,600, but <= 3,600 | 70 |
| Commercial: Summer kWh > 3,600, but <= 9,000 | 60 |
| Commercial: Summer kWh > 9,000, but <= 30,000 | 60 |
| Commercial: Summer kWh > 30,000 | 90 |
| Public Authority: Summer kWh <= 1,830 | 60 |
| Public Authority: Summer kWh > 1,830, but <= 15,030 | 60 |
| Public Authority: Summer kWh > 15,030, but <= 75,030 | 60 |
| Public Authority: Summer kWh > 75,030 | 60 |
| Industrial: Summer kWh <= 5,050 | 60 |
| Industrial: Summer kWh > 5,050, but <= 17,250 | 55 |
| Industrial: Summer kWh > 17,250, but <= 51,250 | 60 |
| Industrial: Summer kWh > 51,250 (Census) | 20 |
| **Total** | **855** |

**General Service Demand (GSD) Rate Class**

The GSD Rate Class was stratified by the 3rd highest demand of the last 12 months and revenue class (commercial, public authority, and industrial). The strata breakpoints were selected using the Dalenius-Hodges cumulative square root "uf" technique. Neyman allocation was used to select the sample size. The largest customers were identified and included in census strata. The General Service Demand sample size and stratum allocations are outlined in the following table for a total sample size of 521.

| Cell (Stratum) | Sample Size |
|---|---|
| Commercial: 3rd highest kW <= 30 | 40 |
| Commercial: 3rd highest kW > 30, but <= 90 | 35 |
| Commercial: 3rd highest kW > 90, but <= 300 | 45 |
| Commercial: 3rd highest kW > 300, but <= 900 | 30 |
| Commercial: 3rd highest kW > 900 | 75 |
| Public Authority: 3rd highest kW <= 125 | 50 |
| Public Authority: 3rd highest kW > 125, but <= 600 | 50 |
| Public Authority: 3rd highest kW > 600, but <= 4,300 | 50 |
| Public Authority: 3rd highest kW > 4,300 (Census) | 6 |
| Industrial: 3rd highest kW <= 140 | 40 |
| Industrial: 3rd highest kW > 140, but <= 520 | 40 |
| Industrial: 3rd highest kW > 520, but <= 1,900 | 45 |
| Industrial: 3rd highest kW > 1,900 (Census) | 15 |
| **Total** | **521** |

**Interruptible Service (IS) Rate Class**

The IS rate class has a small number of customers and they all have mass memory metering for billing purposes, so all customers are used for the Load Research Study.