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September 6, 2022

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 Sampling Plan; Undocketed*

Dear Mr. Teitzman:

Please find attached Duke Energy Florida, LLC's ("DEF"), response to Staff's First Data Request regarding DEF's 2022 Load Research Sampling Plan.

Thank you for your assistance in this matter. Please feel free to call me at (727) 820-4692 should you have any questions concerning this filing.

Respectfully,

s/ Dianne M. Triplett

Dianne M. Triplett

DMT/ts
cc: Suzanne Brownless, Office of General Counsel, FPSC
William McNulty, FPSC
Michael Barrett, FPSC

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DUKE ENERGY FLORIDA, LLC'S RESPONSE TO STAFF'S FIRST DATA REQUEST REGARDING DEF'S 2022 LOAD RESEARCH SAMPLING PLAN

Please refer to the July 25, 2022 filing (Duke Energy Florida, LLC's Load Research Sampling Plan), to answer the following questions.

1. On Page 1 of 3, the filing states, "DEF completed deployment of AMI meters for 1.9 million customers in the spring of 2021. Approximately 2,700 meters do not provide interval data, largely due to customers that have opted out of AMI metering." Please answer the following:

   A. Please provide a breakdown of the 2,700 meter number by rate class.

   Response:

   Current customers opting out of AMI metering:
   - 240 – GS Non-demand
   - 38 – GS demand
   - 2173 – RS

   More AMI meters have been installed since the Sample Plan was submitted. Load Research expects that approximately 450 more meters will be changed to AMI this year.

   B. What assumptions are made regarding the customer opt-outs? How are these assumptions incorporated into the study?

   Response:

   Opt-out accounts are considered missing accounts and are handled in the analysis process as missing data. Usage will be estimated based on a mean per unit methodology for the rate class.

2. On Page 1 of 3, the filing states, "Therefore, in lieu of statistically designed samples, all available interval data for the population will be used for the Load Research Study." Please answer the following:

   A. What advantages are expected to result from using all available interval data in lieu of statistically designed samples?

   Response:

   DEF is leveraging the investment in AMI metering to support the Load Research program. Having interval data available for nearly all meters reduces estimation of usage. This eliminates any sampling error, which will provide more accurate results.

With the samples, billing population and kwh sales were used to expand the estimates to the population level. The new method avoids the need to align billing cycle data with a calendar month period. The sample methodology was designed to achieve the desired confidence level and precision at the monthly system peak hour. The new methodology using all available interval data will achieve better results for all hours. In addition to the improvements in accuracy, the Load Research team will benefit by a more streamlined process.

B. What disadvantages are expected to result from using all available interval data in lieu of statistically designed samples?

Response:

There are no disadvantages expected to result from using all interval data.

C. Explain how DEF tested the validity of its proposal to use all available interval data in lieu of statistically designed samples? If a comparative analysis was conducted using the data from the 2019 Study, please summarize the results of that analysis.

Response:

Since the sample size has been increased to the whole population, the results will inherently have less error and therefore no testing is required to demonstrate the validity of this method.

D. Please provide a detailed estimated cost comparison of conducting the study using all available interval data versus using a statistically selected sample. As part of your response, please indicate if specific software systems must be purchased prior to conducting the study, and if so, the approximate cost of such systems.

Response:

Load Research is currently in the Regulated Solutions Analytics (RSA) organization. RSA provides advanced analytics in support of regulated initiatives. By leveraging investment in AMI metering, RSA is developing an internal platform to integrate customer interval data, billing data, demographic data, and other attributes to aid in advanced analytics. The new platform helps to modernize analysis processes for Load Research. Consequently, new software is not needed and will not be purchased for the DEF Load Research Study. The design of the RSA platform, which is used for multiple analytical purposes among all jurisdictions, has associated costs related to internal development and ongoing support. After the development phase, the automation with the new methodology using all available interval data will reduce the resources required to perform the sample methodology. Thus, the resources will be available to work on other analytical projects, in addition to core Load Research analysis.

E. Please explain how the scope of this study will impact the accuracy of the load research study results in comparison to previous studies conducted. Will confidence intervals and error rates be calculated using whole population in the load research study? Will these previously reported metrics be included in the upcoming study? Why or why not?

Response:

The results will be based on actual metered data for the whole population, instead of a small sample, providing more precise results. With the new methodology, approximately 99% of the data will be available for every hour of the year. Therefore, the results will be more accurate than the 90% confidence level at system peak hour, which was achieved with the sample methodology. In previous years, 100% of the IS meters have been used for the rate class analysis. Now all rate classes will be handled like the IS rate group. Since this approach is not based on a sample, confidence intervals and error rates do not apply, so they will not be included in the upcoming study.

F. Please explain the effects on metrics such as standard deviation and outliers, which will result from using whole population in the load research study. How will the approach to these metrics differ from previous studies conducted?

Response:

Any statistic associated with sampling will not be applicable with the new methodology using all available interval data. For example, the confidence interval will not apply.

G. Please explain how usage differences within a class (i.e., a low-usage residential class customer versus a high-usage residential class customer) will be recognized. Compare the usefulness of strata breakpoints in previous studies and what benefit, if any, strata breakpoints would offer the upcoming study if available.

Response:

In past samples, strata breakpoints were used to help minimize the required sample size, while maintaining the desired accuracy level. The stratified sample design was not used to study sub-groups. With the new methodology, strata will not apply to analysis using the entire population.

H. What purposes has DEF had historically, if any, for its load sampling plans other than the preparation of its load research studies filed with the Commission?

Response:

The data from Load Research samples have been used by Cost of Service, Rate Design, and Load Forecasting. The DEF demand statistics and hourly load profiles have also been used to support numerous data requests from other internal departments.

I. Does DEF plan to accelerate retirement/disposal of its recording meters and other related load research assets it has used for purposes of conducting load research studies in the past? Please identify all such assets, including the actual and expected impacts to plant balances, depreciation expense, accumulated depreciation, and retirements, by account.

Response:

DEF did not have to accelerate the retirement of the load research assets. Meters were stripped of modems and recording capabilities and reused as opt out meters for billing.

J. What impact will the accelerated retirement/disposal have, if any, on the Company's cost recovery for such assets?

Response:

None.

K. Please explain how DEF's 2022 Load Sampling Plan, using all available interval data in lieu of statistically designed samples, is compliant with Rule 25-6.0437(3), Florida Administrative Code. Specifically, page 3 of DEF's load sampling plan indicates that interval data will be compiled from the population (rather than from a sample), the AMI retrieval rate is said to be over 99 percent, and rate class populations rather than samples are identified, whereas Rule 25-6.0437(3) states, "The plan shall provide for sampling all rate classes that account for more than 1 percent of a utility's annual retail sales."

Response:

Load Research will continue to provide results for all rate classes that account for more than 1 percent of DEF's annual retail sales. In previous DEF Load Research studies, the IS rate class analysis used all available interval data, which is the same concept for the new analysis method. Instead of sample estimates that are within +/- 10% at the 90% confidence level at system peak hour, Load Research will use metered interval data for over 99% of the population.