

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF DUKE ENERGY)	
KENTUCKY, INC. FOR AUTHORITY TO ADOPT A)	CASE NO.
SCIENTIFIC SAMPLE METER TEST PLAN AND)	2026-00144
DEVIATION FROM ADMINISTRATIVE)	
REGULATION 807 KAR 5:022, SECTION 3(4))	

**APPLICATION FOR AUTHORITY TO ADOPT A SCIENTIFIC SAMPLE
METER TEST PLAN FOR POSITIVE DISPLACEMENT DIAPHRAGM GAS
METERS AND DEVIATION FROM ADMINISTRATION REGULATION 807
KAR 5:022, SECTION 3(4)**

Now comes Duke Energy Kentucky, Inc. (Duke Energy Kentucky or Company), pursuant to 807 KAR 5:022, Section 8 and hereby respectfully requests the Kentucky Public Service Commission (Commission) grant a waiver to deviate from the diaphragm meter testing frequency required by 807 KAR 5:022, Section 3(4)(a) and adopt a scientific sample meter test plan (SSMT Plan) in accordance with 807 KAR 5:022, Section 3(4)(c) for certain of its positive displacement diaphragm meters installed in Kentucky.

In support of this Application, Duke Energy Kentucky respectfully states as follows:

I. INTRODUCTION

1. Pursuant to 807 KAR 5:001, Section 14(2), Duke Energy Kentucky is a Kentucky corporation originally incorporated on March 20, 1901, in good standing, and a “public utility” as that term is defined in KRS 278.010(3), and, therefore, is subject to the Commission’s jurisdiction. Attached as Exhibit 1 is a copy of a recent Certificate of Good Standing. Duke Energy Kentucky is engaged in the business of furnishing natural gas and

electric services to various municipalities and unincorporated areas in Boone, Bracken, Campbell, Gallatin, Grant, Kenton, and Pendleton Counties in the Commonwealth of Kentucky.

2. Pursuant to 807 KAR 5:001, Section 14(1), Duke Energy Kentucky's business address is 139 East Fourth Street, Cincinnati, Ohio 45202. The Company's local office address in Kentucky is Duke Energy Erlanger Ops Center, 1262 Cox Road, Erlanger, Kentucky 41018. The facts upon which the Application are based are set forth herein.

3. Copies of all orders, pleadings and other communications related to this proceeding should be sent to:

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II. BACKGROUND

4. The requirements provided in 807 KAR 5:022, Section 3(4)(a), dictate the minimum test frequency for positive displacement diaphragm meters of various sizes. These requirements require a minimum testing period of:

- Every ten (10) years for positive displacement meters with a rated capacity up to and including 500 cubic feet per hour (CFH)

(Category 1 Meters).¹

- Duke Energy Kentucky received an extension to test meters in this category every fifteen (15) years per Case No. 2018-00261.²
- Every five (5) years for positive displacement meters with a rated capacity above 500 CFH, up to and including 1,500 CFH (Category 2 Meters).³
- Every year for positive displacement meters with a rated capacity greater than 1,500 CFH.⁴

5. Duke Energy Kentucky currently operates within the testing frequency of these requirements, testing its entire meter population according to the specified frequencies.

6. For positive displacement meters with a rated capacity up to and including 500 cubic feet per hour and for positive displacement meters with a rated capacity above 500 CFH, up to and including 1,500 CFH (collectively Category 1 and 2 Meters), Duke Energy Kentucky currently does not re-deploy such meters after testing. In Case No. 2018-

¹ 807 KAR 5:022, Section 3(4)(a)(1).

² *In the Matter of the Electronic Application of Duke Energy Kentucky, Inc. for Authority to 1) Adjust Natural Gas Rates, 2) Approval of a Decoupling Mechanism, 3) Approval of New Tariffs, 4) and for All Other Required Approvals, Waivers, and Relief*, Case No. 2018-00261, Order, p. 23 (Ky. P.S.C. Mar. 27, 2019) (“Based upon the above-referenced testimony and study that were submitted, the Commission grants Duke Kentucky’s requested waiver pursuant to KRS 278.210 and 807 KAR 5:022 Section 3(4)(a) to amend its natural gas meter testing schedule for positive displacement meters rated capacity up to and including 500 cubic feet per hour from a ten-year testing parameter to a fifteen-year schedule.”).

³ 807 KAR 5:022, Section 3(4)(a)(2).

⁴ 807 KAR 5:022, Section 3(4)(a)(3).

00261, the Company explained why it was not practical or cost-effective to re-deploy Category 1 and 2 Meters:

The Category 1 and 2 Meters are diaphragm meters and the Company generally disposes of these category of meters after completing the testing. This is because the costs to refurbish, repair, store, and redeploy a once-used diaphragm meter were determined to exceed the costs of simply purchasing a new meter. . . . When Duke Energy Kentucky removes the Category 1 and 2 Meters from service we will attempt to sell them to a third party for potential future use if there is a market for that type of meter. For those meters that cannot be resold, the Company will scrap the meter for recycling. Any revenues received through this recycling or third party sales are credited against (reducing) the overall meter plant accounts. This is a more cost-efficient process than having to refurbish, repaint, store, and redeploy all meters.⁵

7. For substantially the same reasons, the Company continues substantially the same processes today. Thus, although Category 1 and 2 Meters are capable of serving for longer periods of time, the current testing requirements create the practical necessity to remove them and replace them with new meters at the shorter intervals required for testing.

8. If the proposed SSMT Plan detailed below is approved, Duke Energy Kentucky will be able to leverage sample testing to verify the performance of its larger population of Category 1 and 2 Meters, with only the sampled meters being removed and disposed of, while the majority of meters remain in service for their full life. Accordingly, with the approval of the proposed SSMT Plan, the Company would be able to replace significantly fewer Category 1 and 2 Meters each year, thereby generating capital savings

⁵ *In the Matter of the Electronic Application of Duke Energy Kentucky, Inc. for Authority to 1) Adjust Natural Gas Rates, 2) Approval of a Decoupling Mechanism, 3) Approval of New Tariffs, 4) and for All Other Required Approvals, Waivers, and Relief*, Case No. 2018-00261, Direct Testimony of Tyler J. Barbare, p. 6, lines 7-19 (Aug. 31, 2018).

and improving efficiency. The Company respectfully submits that this constitutes “good cause” to approve the proposed SSMT Plan under 807 KAR 5:022, Section 8.

**III. REQUEST FOR AUTHORITY TO ADOPT A SCIENTIFIC SAMPLE
METER TEST PLAN FOR POSITIVE DISPLACEMENT DIAPHRAGM
GAS METERS AND DEVIATION FROM ADMINISTRATION
REGULATION 807 KAR 5:022, SECTION 3(4)**

9. 807 KAR 5:022, Section 3(4)(c) allows utilities to adopt a scientific sample meter test plan for positive displacement meters, with the approval of the Commission. Under this provision, and pursuant to 807 KAR 5:022, Section 8, Duke Energy Kentucky requests the Commission to approve its adoption of the SSMT Plan described in Exhibit 2, in lieu of the periodic testing that would otherwise be prescribed for Category 1 and 2 Meters. The Company is requesting authorization to implement the SSMT Plan for six years after Commission approval, which will allow the Company to gather five full years of data before any subsequent filing. Based on the data obtained during the first five years of the proposed SSMT Plan, the Company will make a future filing for extension of the approved meter test plan and/or approval of any proposed modifications.

10. The proposed SSMT Plan will be applicable to positive displacement diaphragm meters with a rated capacity up to and including 1,500 CFH (Category 1 and 2 Meters). The proposed SSMT Plan would be used in lieu of the periodic meter tests prescribed by 807 KAR 5:022, Section 3(4)(a).

11. Specifically and as detailed further in Exhibit 2, Duke Energy Kentucky proposes that: (1) control groups of meters with a rated capacity up to 500 CFH will be sample-tested in their fifth, tenth, and fifteenth years following their intest date, and then subsequently sample-tested annually; and (2) control groups of meters with a rated capacity

greater than 500 CFH and up to and including 1,500 CFH will be sample-tested in their fourth and sixth years after their instest date, and then subsequently sample-tested annually.

12. Positive displacement diaphragm meters with a rated capacity greater than 1,500 CFH shall continue to be tested at the frequency required by 807 KAR 5:022, Section 3(4)(a) and shall not be included in the proposed SSMT Plan.

13. The proposed sample-testing durations for the control groups are as or more frequent than the minimum test frequencies for Category 1 and 2 Meters in 807 KAR 5:022, Section 3(4)(a). Accordingly, this Application is not a request to extend duration of testing and therefore there is no requirement to make any demonstration via sample testing.

14. Duke Energy Kentucky's proposed SSMT Plan employs sampling techniques in the evaluation of gas meter performance and is specifically designed to provide a high level of accuracy in the measurement of natural gas to Duke Energy Kentucky's customers while controlling metering cost. The primary purpose of this program is the detection and early removal of any group of meters that does not meet prescribed performance standards. The regular testing intervals required by the proposed SSMT Plan will allow Duke Energy Kentucky to track and report trends among meters with similar qualities (model, manufacturer, year of purchase, etc.) and take action to replace meter control groups before they fall out of compliance utilizing the widely recognized sampling standard of Military Standard (Mil-Std) 105E, *Sampling Procedures and Tables for Inspection by Attributes*, which has been superseded by American National Standards Institute (ANSI) Z1.4, *Sampling Procedures and Tables for Inspection by Attributes*. This plan of sampling, testing, and replacement will provide Duke Energy Kentucky with a reasonably high level of confidence that the remaining meters fall within

the compliance of the accuracy standards and can therefore operate with an extended lifecycle.

15. SSMT Plan - Annual Report Contents: If the SSMT Plan is approved, Duke Energy Kentucky proposes to submit an annual report in this docket that includes:

- the identification of control groups
- the test results for each control group
- evaluation of analysis of the data;
- plans for corrective action, if any; and
- capital cost savings resulting from any reduction in meter replacements.

16. The benefits of the SSMT Plan include long-term metering accuracy, and capital savings going forward.

IV. CONCLUSION

17. For the reasons set forth above, the Company believes the adoption of its proposed SSMT Plan is in the best interest of Duke Energy Kentucky and its Kentucky customers, and there is good cause to approve it.

WHEREFORE, Duke Energy Kentucky respectfully requests that the Commission approve the Company to adopt the SSMT Plan for six years, as described in Exhibit 2 in lieu of the periodic meter sampling requirements of 807 KAR 5:022, Section 3(4)(a), pursuant to 807 KAR 5:022, Section 3(4)(c) and Section 8.

Respectfully submitted,

DUKE ENERGY KENTUCKY, INC.

/s/Larisa M. Vaysman

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CERTIFICATE OF SERVICE

This is to certify that the foregoing electronic filing is a true and accurate copy of the document in paper medium; that the electronic filing was transmitted to the Commission on June 11, 2026 that there are currently no parties that the Commission has excused from participation by electronic means in this proceeding; and that submitting the original filing to the Commission in paper medium is no longer required as it has been granted a permanent deviation.⁶

/s/Larisa M. Vaysman
_____ *Counsel for Duke Energy Kentucky, Inc.*

⁶ *In the Matter of Electronic Emergency Docket Related to the Novel Coronavirus COVID-19*, Case No. 2020-00085, Order (Ky. P.S.C. July 22, 2021).

Commonwealth of Kentucky
Michael G. Adams, Secretary of State

Michael G. Adams
Secretary of State
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Certificate of Existence

Authentication number: 369882
Visit <https://web.sos.ky.gov/ftshow/certvalidate.aspx> to authenticate this certificate.

I, Michael G. Adams, Secretary of State of the Commonwealth of Kentucky, do hereby certify that according to the records in the Office of the Secretary of State,

DUKE ENERGY KENTUCKY, INC.

DUKE ENERGY KENTUCKY, INC. is a corporation duly incorporated and existing under KRS Chapter 14A and KRS Chapter 271B, whose date of incorporation is March 20, 1901 and whose period of duration is perpetual.

I further certify that all fees and penalties owed to the Secretary of State have been paid; that Articles of Dissolution have not been filed; that the most recent annual report required by KRS 14A.6-010 has been delivered to the Secretary of State; and is therefore in good standing.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal at Frankfort, Kentucky, this 5th day of June, 2026, in the 235th year of the Commonwealth.



Michael G. Adams

Michael G. Adams
Secretary of State
Commonwealth of Kentucky
369882/0052929

Scientific Sample Meter Test Plan Details

Introduction and Purpose:

Duke Energy Kentucky's purpose in using a scientific sample meter test plan (SSMT Plan) is to implement a meter testing program that provides confidence that its positive displacement diaphragm gas meters operating in Kentucky accurately measure the natural gas usage of its customers, while extending the lifespan of the meters in operation. The goals of this program are:

- a) Continue to provide accurate metering to Duke's customers;
- b) Continue to satisfy the requirements of the Kentucky Public Service Commission (Commission) and all applicable statutes and regulations;
- c) Extend the operable lifecycle of Duke's positive displacement diaphragm meters by demonstrating their accuracy on a routine basis via sampling; and
- d) Reduce the total number of meter tests needed to verify the accuracy of the Company's meters.

As elaborated in more detail below, Duke Energy Kentucky proposes to:

1. Categorize meters into control groups of like model, manufacturer, and date of interest;
2. Test a sample of each identified control group with pass/fail criteria to determine if the control group is likely accurate or inaccurate; and
3. Replace rejected control groups within a short period of time to maintain overall accuracy of the entire meter population.

If approved, this SSMT Plan is expected to reduce testing frequency and thereby extend effective meter lifecycle, while maintaining confidence that the Company's meters remain accurate.

Current Testing Requirements:

807 KAR 5:022, Section 3(4)(a) requires that testing occur at a minimum of:

- Every ten (10) years for positive displacement meters with a rated capacity up to and including 500 CFH;¹

¹ 807 KAR 5:022, Section 3(4)(a)(1).

- Duke has received an extension to test meters in this category every 15 years.²
- Every five (5) years for positive displacement meters with a rated capacity above 500 CFH, up to and including 1,500 CFH;³ and,
- Every year for positive displacement meters with a rated capacity greater than 1,500 CFH.⁴

Duke Energy Kentucky currently performs periodic testing on its positive displacement diaphragm meters installed in Kentucky in accordance with this regulation, except insofar as it tests positive displacement meters with a rated capacity up to and including 500 CFH every fifteen (15) years, pursuant to an extension approved in Case No. 2018-00261.⁵

Duke Energy Kentucky currently tests all meters to the accuracy required by 807 KAR 5:022 Section 3(2)(a)(2) which requires a meter accuracy of less than two (2) percent error when tested at 20% and 100% of the meter's rated capacity at five-tenths inch water column differential. Any meter proof test beyond +/- 2% (fast or slow), is considered a failed meter. All meters are removed from service following testing. If meters of a specific type, manufacturer, or year are found to be in error at a rate that either the Company or the Commission finds to be excessive, those meters are tested with an additional frequency.

Duke proposes to adopt the below SSMT Plan that is fully developed and based on widely recognized for quality control standards to test in-service gas meters. Details of the SSMT Plan are taken from ANSI/ASQ Z1.4 (previously known as Military Standard 105E), *Sampling Procedures and Tables for Inspection by Attributes*.

² *In the Matter of the Electronic Application of Duke Energy Kentucky, Inc. for Authority to 1) Adjust Natural Gas Rates, 2) Approval of a Decoupling Mechanism, 3) Approval of New Tariffs, 4) and for All Other Required Approvals, Waivers, and Relief*, Case No. 2018-00261, Order, p. 23 (Ky. P.S.C. Mar. 27, 2019) ("Based upon the above-referenced testimony and study that were submitted, the Commission grants Duke Kentucky's requested waiver pursuant to KRS 278.210 and 807 KAR 5:022 Section 3(4)(a) to amend its natural gas meter testing schedule for positive displacement meters rated capacity up to and including 500 cubic feet per hour from a ten-year testing parameter to a fifteen-year schedule.").

³ 807 KAR 5:022, Section 3(4)(a)(2).

⁴ 807 KAR 5:022, Section 3(4)(a)(3).

⁵ *In the Matter of the Electronic Application of Duke Energy Kentucky, Inc. for Authority to 1) Adjust Natural Gas Rates, 2) Approval of a Decoupling Mechanism, 3) Approval of New Tariffs, 4) and for All Other Required Approvals, Waivers, and Relief*, Case No. 2018-00261, Order, p. 23 (Ky. P.S.C. Mar. 27, 2019) ("Based upon the above-referenced testimony and study that were submitted, the Commission grants Duke Kentucky's requested waiver pursuant to KRS 278.210 and 807 KAR 5:022 Section 3(4)(a) to amend its natural gas meter testing schedule for positive displacement meters rated capacity up to and including 500 cubic feet per hour from a ten-year testing parameter to a fifteen-year schedule.").

SSMT Plan - Proposed Testing Frequency:

Meter testing frequency will be dependent upon meter size:

- Meter control groups up to 500 CFH will be sample-tested in their 5th, 10th, and 15th years following their in-test date, after which they will be sample-tested annually.
- Meter control groups greater than 500 CFH and up to 1,500 CFH will be sample-tested in their 4th and 6th years following their in-test date, after which they will be sample-tested annually.

SSMT Plan - Meter Categorization/Control Group:

Control Groups for each of the two (2) positive displacement gas meter categories mentioned above will be created. Each control group will be between one (1) and ten thousand (10,000) gas meters. Meter control groups will be determined based on model and year of in-test. New control groups will be determined at the end of each year from those in-tested during the year.

SSMT Plan - Sampling Pass and Fail Criteria:

A random sample will be pulled and tested from the previously mentioned control group. The sample size will be dependent on the: 1) population size and 2) sample size code letters for single sample plan, normal inspection level II, found in ANSI Z1.4.

The table below is based on an Acceptable Quality Level (AQL) of 6.5 and an accuracy level of ± 2.0 percent:

CONTROL GROUP SIZE	SAMPLE SIZE (1)	ACCEPT (AC)	REJECT (RE)
2 – 8	2	0	1
9 – 15	3	0	1
16 – 25	5	0	1
26 – 50	8	1	2
51 - 90	13	2	3
91 – 150	20	3	4
151 - 280	32	5	6
281 – 500	50	7	8
501 – 1,200	80	10	11
1,201 – 3,200	125	14	15
3,201 – 10,000	200	21	22

TABLE 1 – SINGLE SAMPLING PLAN FOR NORMAL INSPECTION

Meters shall be tested and categorized into three (3) accuracy categories:

- 1) More than 2% below 100% accuracy (slow);
- 2) From 2% above to 2% below 100% accuracy; and,
- 3) More than 2% above 100% accuracy (fast).

A meter will be considered to have “failed” if it is either -2% (slow) or +2% (fast) and will be considered to have “passed” if it is greater than -2% (slow) and less than +2% (fast), in accordance with 807 KAR 5:022 Section 3(2)(a)(2).

A control group will be rejected if the number of failed meters reaches the “reject” quantity listed in Table 1. A control group will be considered acceptable when all meters in the sample have been tested and the number of failed meters within the sample does not exceed the “accept” quantity listed in Table 1.

The accepted control group will remain in service until all of the meters within that group have been removed by way of sampling, early removal, or has reached the 35 year end of life duration for meters up to and including 500 CFH and 10 years for meters greater than 500 CFH up to and including 1,500 CFH.

Every reasonable effort will be made to remove meters that reach end of life no matter how well they tested. Sampled meters will follow current testing practices as mentioned in “Current Testing Requirements” and be removed from service once tested.

In the absence of any obstructions to meter access, Duke Energy Kentucky will remove the rejected control group within 18 months of the completion of control group testing.⁶

If isolation of a subgroup from a rejected control group can be identified and separated by way of similar identifiable characteristics, the rejected subgroup will be removed within 12 months of the completion of control group testing. If Duke can prove the original control group now meets accuracy standards after removing the rejected subgroup, the remaining meters shall remain in service. If the subgroup cannot be identified, every reasonable effort will be made to remove the entire control group from service.

Control groups with a population less than the sample size will be tested and removed dependent on meter capacity. Meters in this category with a capacity up to and

⁶ The Commission has previously approved a scientific sample meter test plan for another utility with this timing for removal. See *In the Matter of the Application of Columbia Gas of Kentucky, Inc. for Approval of a Statistical Sample Meter Test Plan for Residential, Industrial, and Commercial Class Meters Pursuant to 807 KAR 5:022, Section 8(5)(c)*, Case No. 1996-00010, Order, Appendix, p. 3 (May 14, 1996).

including 500 CFH will be tested and removed on the current 15-year periodic test and on the 5-year periodic test for greater than 500 and including 1,500 CFH.

For populations that exceed the ten thousand (10,000) control group size found in Table 1, every reasonable effort will be made to find a subgroup that would reduce the control group size to ten thousand (10,000) or less. If no subgroup is found the sample size will scale up according to Table 1 and a summation of the sample sizes will be applied. For example, if no subgroup could be found for a control group with population size of ten thousand five hundred (10,500) meters, the sample size will be 250 (200 for 3,201 – 10,000 and 50 for 281 – 500) with accept on 28 (7 + 21) and reject on 29 (acc + 1).

SSMT Plan - Future Improvements

Following the completion of the first five years of the SSMT Plan, Duke Energy Kentucky may propose and seek Commission approval for additional modifications, if such are justified based on data obtained during the initial five year period and in line with industry standards.

Annual SSMT Plan Timeline:

Duke proposes to use the following annual timeline:

- January (Test year + 0) – A random list of accounts is generated for testing within the year
- November (Test year + 0) – All meter tests are completed
- December (Test year + 0) – All test data is entered into MMIS
- (Test year + 1) – Annual report is submitted to Commission for the previous year
- June (Test year + 2) – All rejected meter control groups completely replaced