

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the matter of the application of)
Laclede Gas Company for a variance)
waiver from the provisions of)
4 CSR 240-10.030(19).)

Case No. *GO-95-320*

VERIFIED APPLICATION FOR VARIANCE

Comes Now Laclede Gas Company ("Laclede") and in support of its Verified Application for Variance ("Application") from the provisions of 4 CSR 240-10.030(19) of the Rules of the Missouri Public Service Commission (the "Commission"), respectfully states that:

1. Laclede is a corporation organized and existing under the laws of the State of Missouri with its principal office located at 720 Olive Street, St. Louis, Missouri. Laclede is a public utility engaged in the local sale, distribution and transportation of natural gas in the City of St. Louis, Missouri and the Missouri Counties of St. Louis, St. Charles, Jefferson, Ste. Genevieve, St. Francois, Madison, Iron, Butler and Franklin.

2. The names, titles, and mailing addresses of the persons who should be served with communications to Laclede concerning this Application and all future matters in this proceeding are:

J. Gerald Hofer
Vice President - Operations
Laclede Gas Company
3950 Forest Park Boulevard
St. Louis, Missouri 63101
(314) 658-5470

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MISSOURI
PUBLIC SERVICE COMMISSION

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3. Laclede seeks a variance from the requirement imposed by 4 CSR 240-10.030(19) (the "Rule") that each gas service meter installed shall be periodically removed, inspected and tested at least once every 120 months or more often. The Rule expressly authorizes the Commission to issue an order prescribing a period different from that set forth above.

4. As more fully described herein, Laclede seeks an order modifying the manner in which the number and identity of meters to be removed and tested by Laclede is determined. Implementation of the program will assure compliance with the provisions of 4 CSR 240-10.030(18) regarding the accuracy requirements for meters.

5. Laclede's current meter removal and testing program was implemented upon adoption of the provisions of the Rule and consists of removing, inspecting and testing each meter on a rolling basis at least once every one hundred and twenty (120) months (the "Current Program"). It should be noted that the purpose of the Current Program is not safety-related nor to replace meters which continue to be usable, but

instead to ensure that the meters remaining in service continue to comply with the accuracy requirements of 4 CSR 240-10.030(18). As part of the Laclede management audit undertaken in Case No. GO-85-63, the Staff of the Commission recommended, among other things, that Laclede investigate sample meter testing. A meter sampling investigation was then conducted in 1989, and as a result of such investigation it was concluded at that time that no direct cost benefits would result from adopting sample based meter testing. However, it was further indicated that as Laclede acquired more data on its meter population, an additional investigation might be warranted within the next five (5) years.

6. Since the Current Program was adopted, Laclede has:

- (a) instituted a program to retire older meter groups, including tin case, iron case, steel case and certain older aluminum case meters, that have historically exhibited a greater propensity to develop measurement problems; and
- (b) emphasized the acquisition of new meters with increased reliability and accuracy. For the 10 year period from 1975 through 1984, Laclede purchased 107,500 new meters, and for the most recent 10 years from 1985 through 1994, Laclede purchased over 267,000 new meters, for a 20 year total of over 374,500 meters purchased. Inasmuch as Laclede's total inventory of meters is over 665,000, currently 56% of its total meter population is less than 20 years old. As a result of this effort, Laclede has been able to increase significantly the proportion of its meters that utilize

materials and technology that have an extended life. This has, in turn, substantially increased the period of time over which certain groups of Laclede's meters will measure accurately. Under these circumstances, the Rule as presently observed through the Current Program leads to unnecessary meter removal and testing. In light of the enhanced performance of many of its meters, Laclede has recently conducted a review of its Current Program to determine if it can increase the amount of time before change-outs for certain meter groups are scheduled, without sacrificing Laclede's ability to meet the accuracy requirements of 4 CSR 240-10.030(18). As a result of its review, Laclede has concluded that the Current Program has, in fact, resulted in more meters being scheduled for removal than are actually necessary to comply with the Commission's accuracy requirements, at considerable unnecessary costs, as well as unnecessary inconvenience to Laclede's customers.

7. Laclede proposes to replace in part its Current Program to achieve greater efficiencies consistent with the Commission's accuracy requirement. The general terms of the gas meter testing program proposed by Laclede herein (the "Proposed Program") are briefly described in the remainder of this Paragraph 7. Laclede would, on an annual basis, randomly sample each meter group included in the Proposed Program beginning when ten (10) years have elapsed from when the meter was set. The meters sampled would be tested for accuracy within plus or minus 2% of 100% accuracy at the open

and check rate in accordance with the "Intest Accuracy" determination specified in Section I.E of Schedule I hereto (the "Accuracy Test"), and the test results would be recorded. If the "Accuracy Rate" as defined in Schedule I.A for a group of sampled meters is 90% or greater, then that sampled meter group would be considered to be passing for annual sample purposes. If a sampled meter group experiences an "Accuracy Rate" during an annual sample of less than ninety percent (90%), that meter group would then be scheduled for change-out over the period of years prescribed by Table I of Schedule 1. Any meter group scheduled for change-out would continue to be sampled annually and such schedule would be modified, accelerated or decelerated, according to the "Accuracy Rate" obtained during the most recent annual sample. All of the remaining meters in that group would be subject to removal from the field as dictated by the annual sample "Accuracy Rates" for such group, and those removed would be tested for accuracy, and adjusted, repaired or disposed of where necessary, based upon the results of the individualized Accuracy Test for that particular meter. The Proposed Program, which is the subject of this Verified Application for Variance, is described in detail in Schedule 1, attached hereto and incorporated herein by reference.

8. The Proposed Program can be implemented with a reduction in the scope of the Current Program, and without compromising Laclede's ability to meet the measurement

standards set forth in 4 CSR 240-10.1030(18). Approval of this Application would therefore be in the public interest.

WHEREFORE, Laclede Gas Company requests that the Commission issue its Order granting Laclede a variance from the provisions of 4 CSR 240-10.030(19), in accordance with the foregoing Application, and the Proposed Program described herein.

Respectfully submitted,



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STATE OF MISSOURI)
) SS.
CITY OF ST. LOUIS)

J. Gerald Hofer, being first duly sworn, on his oath and in his capacity as Vice President of Operations for Laclede Gas Company, states that he: (1) is authorized to execute on behalf of Laclede Gas Company this Verified Application for Variance; and (2) has knowledge of the matters stated in such Application and that said matters are true to the best of his knowledge, information and belief.

J. Gerald Hofer
J. Gerald Hofer

Subscribed and sworn to before me this 17th day of April, 1995.

Adelle M. Follmer
Notary Public

F. M. Follmer
Notary Public, State of Missouri
Commissioned in Franklin County

My commission expires:

June 11, 1996

CERTIFICATE OF SERVICE

Gerald T. McNeive, Jr., Associate General Counsel for Laclede Gas Company, hereby certifies that the foregoing Verified Application for Variance has been duly served upon the Office of the Public Counsel by placing a copy thereof in the United States mail, postage prepaid, on this 17th day of April, 1995.

Gerald T. McNeive, Jr.
Gerald T. McNeive, Jr.

**PROPOSED
LACLEDE GAS COMPANY
METER TESTING PROGRAM**

I. DEFINITIONS:

- A. Accuracy Rate (AR)** - the percentage of a group of meters sampled for accuracy and found to register within the accuracy limits of plus or minus 2% of 100% accuracy, where test results are rounded to the nearest whole number (0.5 and greater to be rounded up).
- B. Annual Sample** - a random sample taken each year from a group of meters based on guidelines set forth in Military Standard MIL-STD 105D for inspection by attributes using General Inspection Level II (See Table II).
- C. Check Flow** - the flow rate at 20% to 40% of the meter's rated capacity.
- D. Group** - meters of a particular type, make, size, and years in service.
- E. Intest Accuracy** - the accuracy of a meter determined during its flow test following removal from operation and before repair or adjustment. It is the sum of the open flow accuracy plus the check flow accuracy divided by two (2).
- F. Make** - the manufacturer of the meter.
- G. Meter** - a positive displacement type gas meter.
- H. Open Flow** - the flow rate at 80% to 120% of the meter's rated capacity.
- I. Percent Accuracy** - the ratio comparison of the registered volume of a meter under test to the registered volume of a standard.
- J. Random** - a statistical method that ensures that any member of a population has the same probability of occurring (being selected) as any other member.
- K. Set Year** - the calendar year during which a meter was installed for a customer.
- L. Size** - the size of the meter as specified by the manufacturer.
- M. Turbine Meter** - a meter measuring mass flow rate by means of a vaned turbine.
- N. Type** - aluminum case, iron case, steel case, tin case, or other meter housing materials.
- O. Year of Purchase** - The calendar year in which a meter was purchased from a manufacturer.
- P. Years In Service** - the number of years between the year a meter was set and the year it was removed.

II. GENERAL:

- A. With the exception of those meters removed from service specifically for known leakage, damage, tampering, noise, or non-registration, and meters that have been selected for retirement, all meters removed from service shall be tested for intest accuracy at check flow and at open flow prior to any adjustment or repair.
- B. Meters passing intest accuracy within plus or minus 1% at both check flow and open flow rates and not requiring repair may be returned to service without further adjustment.
- C. Meters requiring adjustment or repair shall be adjusted to within plus or minus 1% of 100% accuracy at the open flow and check flow rates before being returned to service.
- D. Records shall be maintained for each group of meters, showing the overall intest accuracy of each group for each calendar year. This intest accuracy data should be organized into three (3) accuracy categories, with each expressed as a percentage of the group of meters, as follows:
 - 1. More than 2% above 100% accuracy (fast).
 - 2. From 2% above 100% accuracy to 2% below 100% accuracy.
 - 3. More than 2% below 100% accuracy (slow).

The accuracy data shall be maintained by number of years in service, by year of purchase, and by total meters tested in the group. When calculating the above accuracy categories, all fractions shall be rounded to the nearest whole number (0.5 and greater to be rounded up).

III. PERIODIC TEST REQUIREMENTS:

- A. Except for tin case, iron case, steel case, and certain older aluminum case meters, an annual sample will be selected each year for each meter group starting ten (10) years after the set year. The sample size will be determined in accordance with Table II. The sample will be selected at random. An additional 5% of the meters needed for an annual sample will be selected to compensate for meters that are damaged, inaccessible, leaking, or for other reasons should not be included in a sample.
- B. The AR will be calculated for each sample. Pursuant to this evaluation, Table I shall be used to determine whether the group of meters will be subject to a changeout program the next year. When the AR for a group is 89% or below in the previous year, additional meters from the group will be removed so that the total meters removed for the year, including the statistical sample, will result in the changeout rates as determined in Table I.
- C. The number of meters in a group that are required to be tested in any one year may be reduced by meters that have been brought in and intested for other reasons (building demolition, special request, size, etc.). The credit received for meters that have been removed for other reasons shall be limited to 20% of the meters that had been required to

be tested. The intest results of the meters credited as part of the sample will be included with the results from the random sample to determine the AR for the group of meters.

- D.** If, within a group of meters, a particular lot can be identified from evaluation of test results which indicates an untimely performance degradation due to possible manufacturer's defect and is clearly not a condition brought on by age as compared to the other members of the group, the following action will be taken:
1. The particular lot will be further sampled as appropriate to verify the above indications.
 2. If confirmed, an accelerated removal program of this particular meter lot will be implemented.
 3. In this instance the lot should not be included in the determination of the overall AR of the meter group, so the intest accuracy data will be excluded from the analysis.
- E.** For each group, the maximum statistical sampling period will be set at thirty (30) years.
- F.** Tin case, iron case, steel case, and certain older aluminum case meters are not included and will be removed, inspected, and tested at least once every one hundred twenty (120) months to ensure proper operation.
- G.** Turbine meters shall be tested at least once every one hundred twenty (120) months to ensure proper operation.

TABLE I***Performance Driven Changeout Table***

Accuracy Rate	Rate of Changeout For a Meter Group
90 - 100	Annual Sample (See Table II)
80 - 89	Changeout Over 5 Years
70 - 79	Changeout Over 3 Years
60 - 69	Changeout Over 2 Years
59 or less	Changeout In 1 Year

TABLE II***Annual Sampling Plan***

This table reflects the guidelines set forth by Military Standard MIL-STD 105D for Inspection by Attributes using:

**General Inspection Level II
Single Sampling Plan for Normal Inspection**

Size of Meter Group	Required Sample Size
2 - 8	2
9 - 15	3
16 - 25	5
26 - 50	8
51 - 90	13
91 - 150	20
151 - 280	32
281 - 500	50
501 - 1200	80
1201 - 3200	125
3201 - 10000	200
10001 - 35000	315
35001 - 150000	500