

STATE OF MICHIGAN  
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

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In the matter, on the Commission's own	)	
motion, to amend the rules governing the	)	Case No. U-20608
technical standards for gas service.	)	
_____	)	

At the January 23, 2020 meeting of the Michigan Public Service Commission in Lansing,  
Michigan.

PRESENT: Hon. Sally A. Talberg, Chairman  
Hon. Daniel C. Scripps, Commissioner  
Hon. Tremaine L. Phillips, Commissioner

**ORDER**

On July 16, 2019, the Commission sought permission from the Michigan Office of Administrative Hearings and Rules (MOAHR) to amend the rules governing the technical standards for gas service. MOAHR approved the request on July 18, 2019, 2019-061 LR. The Commission submitted the draft rules to MOAHR and the Legislative Service Bureau for informal approvals, which were granted on August 9 and August 12, 2019, respectively. The Regulatory Impact Statement was submitted to MOAHR on August 30, 2019, and it was approved on September 6, 2019.

On October 17, 2019, the Commission issued an order providing the public with an opportunity to comment on the proposed rules (October 17 order). A public hearing was held on November 13, 2019. No one provided comments at the hearing. On December 4, 2019, the

Commission received written comments from the Michigan Department of the Attorney General (Attorney General), the Retail Energy Supply Association (RESA), and DTE Gas Company (DTE Gas), and jointly filed written comments from Consumers Energy Company, DTE Energy Company, and Michigan Gas Utilities Corporation (Joint Commenters). The Commission also received written comments from Aaron Adamczyk which were submitted to MOAHR on August 5, 2019.

On December 19, 2019, the Commission issued an order (December 19 order) extending the deadline for public comment based, in part, upon the Joint Commenters' concern with the proposed adoption of the American Petroleum Institute (API) Standard 1164 (API standard) as the applicable security standard. The Commission noted that the standard was available at the Commission's office for interested parties to review which would provide additional clarity and opportunity for public comment upon the adoption of the API standard.

On January 8, 2020, the Citizens Utility Board of Michigan (CUB) filed comments. On January 9, 2020, the Attorney General and the Joint Commenters filed additional comments.

In her comments, the Attorney General states that the proposed amendment to subsection (2) of R 460.2362 (Rule 62) appears to shorten the possible timeframe of meter inaccuracy claiming, "it still creates the potential for a long and arbitrary time period." Attorney General's comments, p. 2. She contends that, given the widespread use of advanced metering technologies, which ratepayers have paid a substantial amount of money to install, the meter history should be readily available and able to provide an accurate picture of how the meter is registering over time. The Attorney General states that, if the meter history is unable to pinpoint the period of inaccuracy, the assumed period of inaccuracy should be limited to "no more than the period of time that refunds

and rebillings may be paid to or recovered from ratepayers under the provisions governing refunds and rebillings.” *Id.*

CUB also comments that Rule 62, as amended, “would not adequately recognize the substantial investments already made by utilities in advanced metering infrastructure in order to provide remedies for metering inaccuracies.” CUB’s comments, p. 2.

In response to the Attorney General’s comments on the widespread use of advanced metering technologies, the Commission notes that, although advanced metering technologies are prevalent across the state, all meters have not been updated with the new technology. Therefore, the rules must account for both traditional meters and modern meters. Moreover, advanced metering technologies are not infallible, and the Commission disagrees with the assertion that the proposed amendment continues to create an arbitrary time period. Rather, the addition of “or tested” may shorten the timeframe of the assumed inaccuracy. Similarly, the Commission rejects the assertion by CUB that the amendment does not recognize the investments made by the utilities in advanced metering infrastructure.

Regarding the Attorney General’s proposed adoption of a limitation to the assumed period of inaccuracy, the primary concern appears to be regarding the timeframe for which utilities can issue retroactive bills to customers, which is more fully discussed below. However, the Commission notes that the timeframe established under Rule 62(2) does not affect the timeframes for retroactive billing set forth in Mich Admin Code, R 460.115 of the Consumer Standards and Billing Practices for Electric and Natural Gas Service (Rule 15). Therefore, the Commission declines to adopt the proposed limitation without additional support.

Regarding R 460.2353(2), the Attorney General comments that the six-month timeframe for utilities to repair or replace an overregistering meter is unnecessarily long and unreasonable. She

contends that an inaccurate meter should be repaired or replaced immediately, but proposes that the rule be updated to reflect a three-month period which she claims “is more than sufficient time to repair or replace an inaccurate meter.” Attorney General’s comments, p. 3.

The six-month timeframe for the replacement of an overregistering meter was developed through the workgroup process with interested stakeholders and is found to be reasonable. Without additional explanation or justification, the Commission is unable to fully evaluate the Attorney General’s proposed change and, therefore, finds that it should be rejected.

The Attorney General also comments on Rule 15, as referenced in Rule 62. She states that a utility should be required to absorb the costs of underregistering meters given they are controlled by the company and that the utility should only be permitted to retroactively bill ratepayers if it can “demonstrate that a customer caused the error by damaging the meter, tampering with a meter or have accessed a meter without authorization.” Attorney General’s comments, p. 3. In the alternative, she proposes that any retroactive billing should be limited to “3-months or the last time the meter was installed or tested, whichever is shortest.” *Id.* With regard to retroactive refunds, the Attorney General comments that the 12-month period should remain unchanged, citing the company’s ability to monitor meters and resolve problems. In her additional comments, she also notes that Rule 62 is inconsistent with Rule 15 because “the period of inaccuracy and therefore the adjustment may be longer than 12-months and under subrule 62(2) that period may be significantly longer, however [Rule 15] limits the refunds recoverable by ratepayers to just the 12-month period preceding discovery of a metering error.” Attorney General’s additional comments, p. 2. The Attorney General notes that some customers may have refunds cut-off or reduced if the amendment takes effect.

In its comments, CUB indicates its support for the Attorney General's arguments regarding retroactive billing. *See*, CUB's comments, p. 2.

The Commission notes the Attorney General's and CUB's comments, however Rule 15 is not part of the rule set at issue in this matter. Therefore, the Commission is unable to modify the timeframe for retroactive billing as set forth in that rule. Moreover, Rule 15 governs service provided by both electric and natural gas utilities and the Commission declines to set a separate standard for gas utilities in the gas technical standards. The Commission further finds that the amended rules are not inconsistent with Rule 15. The 12-month limitation contained in Rule 15 is reasonable and prudent and balances the interests of the customer and the utility as it is a limitation on both retroactive billing and refunds. Moreover, the proposed amendment does not affect the limitation set forth in Rule 15. Therefore, the Commission rejects the Attorney General's comments regarding Rule 62.

The Attorney General also comments on subsection (d)(i) of R 460.2351 (Rule 51), stating that customers should be able to request that the company test their meter once per year at no cost to the customer to allow ratepayers "to be proactive in protecting themselves from the negative consequences of meter inaccuracies." Attorney General's comments, p. 3.

The Commission notes that the rules already provide for customer-requested testing. Requiring utilities to test meters once per year upon customer request could substantially increase the utility's overall cost of service thereby requiring an increase in rates. The Commission finds that without additional explanation it is unable to fully evaluate the proposed change and, therefore, finds that it should be rejected.

In her additional comments, the Attorney General notes that "the proposed rules would rescind R460.2363 [Rule 63] which deals with refunds resulting from metering inaccuracies presumably

relying on [Rule 15] to address that issue.” Attorney General’s additional comments, p. 1. She further indicates that Rule 15 does not adequately address everything that is currently contained in Rule 63. Specifically, the Attorney General notes that Rule 15 does not address refunds to previous ratepayers and to “cut-off refunds to such customers is not only unfair, it potentially provides the utilities with an unearned windfall.” *Id.*, p. 2. Therefore, she recommends that Rule 63(1) not be rescinded because “[i]t provides a necessary element to ensure as much as possible that ratepayers overcharged by inaccurate meters receive just compensation.” *Id.*, p. 3.

CUB also comments on Rule 63, as well as R 460.2361 (Rule 61), and R 460.2364 (Rule 64), contending that these rules should not be rescinded. CUB states that Rule 64 is specifically referred to in Mich Admin Code, R 460.116 (Rule 16) of the Commission’s Consumer Standards and Billing Practices and that Rules 61 and 63 “provide the standards for determining an inaccurate bill and the period for determining when an inaccurate bill would be considered.” CUB’s comments, p. 1.

The Commission has considered the Attorney General’s and CUB’s comments and agrees, in part, with regard to Rule 63. The Commission agrees with the Attorney General’s comment that Rule 63 specifically provides language addressing refunds to previous ratepayers which is not addressed in the current Rule 15. However, the Commission declines to retain the entirety of Rule 63(1) as proposed as it references additional rules being rescinded and finds that the amended rules should be revised as follows:

~~(4) Refunds shall be made to the 2 most recent customers who received service through the meter found to be registering inaccurately. If the utility has not adopted the requirements of R 460.2352, the period that is used for determining the amount to be refunded shall not be more than 12 months. If the utility has adopted the requirements of R 460.2352, the period that is used for determining the amount to be refunded shall be the period of inaccurate meter registration that is determined pursuant to the provisions of R 460.2362(1) to (2).~~ In the case of a previous customer who is no longer a customer of the utility, a notice of the amount of the

refund shall be mailed to his or her last known address and the utility shall, upon demand made within 3 months, refund the amount.

~~–(2) If the amount of the refund due an existing or previous customer as the result of meter overregistration is equal to, or more than, an average of 10 cents per month for the period that is used for determining the amount to be refunded, the full amount of the refund shall be made, except that a refund that is less than \$1.00 need not be made to an existing customer and a refund that is less than \$2.00 need not be made to a previous customer who is no longer a customer of the utility.~~

With regard to Rule 61, CUB did not provide a rationale for its recommendation. Therefore, the Commission is unable to fully evaluate the proposed change and declines to adopt the recommendation to retain Rule 61. The Commission also finds that there is no specific reference to Rule 64 in Rule 16 as indicated by CUB and CUB has failed to support that Rule 64 should not be rescinded. Therefore, the Commission rejects CUB’s recommendation regarding Rule 64.

RESA comments that the rules governing the technical standards for gas service do not apply to alternative gas suppliers (AGSs) by definition. RESA notes that R 460.2324 (Rule 24), as drafted, applies to a “gas provider,” which could be interpreted as applying to an AGS and “recommends that the new rule be revised to make clear that it applies only to gas utilities.” RESA’s comments, p. 2. RESA states that it is unnecessary to include AGSs in the cybersecurity rule because they “do not maintain or operate critical energy infrastructure” and “there are not the same cyber-security implications for AGSs and their customers as there are for distribution utilities.” *Id.* Further, RESA asserts that AGSs must comply with Michigan’s Identity Theft Protection Act, Public Act 452 of 2004, which requires AGSs to provide notice to customers affected by security breaches. RESA contends that AGS customers are not captive, therefore “AGSs are incentivized to ensure that sensitive customer data is protected because failure to protect such data could lead to the loss of customers.” *Id.*, pp. 2-3.

The Commission agrees with RESA that Rule 24 should be modified. As noted by RESA, the rules governing the technical standards of gas service do not apply to AGSs and Rule 24, as

proposed, could be interpreted as applying to AGSs, which is not appropriate. Pursuant to R 460.2302, the rules governing the technical standards of gas service “apply to a gas utility that operates within the state of Michigan and that is subject to the jurisdiction of the commission.” The Commission notes the intent of Rule 24 was not to expand the gas technical standards to AGSs. Therefore, the Commission finds that the definition of the term “gas provider” should be removed and each use of the term “gas provider” should be replaced with the term “utility” which is already defined in subsection (p) of R 460.2301.

The Joint Commenters recommend that the Commission reject the API standard as the applicable security standard due to the lack of availability and clear understanding. Specifically, they indicate that the API standard “is not generally available without registration and payment to API for copies” which impairs the ability of the public to comment. Joint Commenters’ comment, p. 1. The Joint Commenters also note that the API standard has not been subjected to a full review in order to understand the operational impacts and costs, including the impact on rates. In their additional comments, the Joint Commenters state that “[i]t is well known in the industry that API has been in the process of a significant rewrite of the standard that is almost complete” and that the scope of the rewrite of these versions is so vast “that significant changes will be required by each utility in order to comply.” Joint Commenters’ additional comments, p. 2. Therefore, the Joint Commenters recommend that the Commission keep the current standard in place until the updated standard is in effect in mid-2021 or allow “waivers for utilities on the API Standard requirement until the adoption of Version 3 to avoid a second round of costs being incurred.” *Id.*

As noted in the proposed rules, “[t]he commission also has copies of the publications available for inspection . . . at its offices . . .” and the public comment period was extended to provide an additional opportunity for public review and comment. The Commission, therefore, disagrees that



public comment was limited by the availability of the API standard. Further, it is not possible to know the exact impact on costs when implementing any new standard. Cybersecurity incidents are an emerging threat to the safety and reliability of gas service and there are no current provisions, rules, or laws that address cybersecurity incidents for gas utilities in Michigan. The Commission finds that adopting a cybersecurity standard is necessary to address the emerging cybersecurity threats to Michigan's gas system. The API standard is an industry specific security standard and is directly applicable to natural gas utilities. The Commission finds that the benefit to customers is substantial and that the adoption of the API standard by reference is reasonable and appropriate. The Commission finds it is not reasonable or prudent to wait upon the approval of Version 3 of the API standard. Nevertheless, a utility may file a waiver request, as provided in subsection (5) of R 460.2302 (Rule 2), to be evaluated by the Commission on a case-by-case basis.

The Joint Commenters also identify other issues that may need revision. Specifically, they note that subsection (3) of R 460.2381 (Rule 81) states: "Gas that is distributed by a utility to a customer must not contain more than 2% carbon dioxide and 5 parts per million oxygen." However, the Joint Commenters believe the intent was for it to read "must not contain more than 2% carbon dioxide **or** 5 parts per million oxygen." Joint Commenters' comments, p. 2.

The Commission agrees with the Joint Commenters that Rule 81 needs revision. The suggested revision to Rule 81(3) is reasonable and prudent and the rule has been modified to state "must not contain more than 2% carbon dioxide **or** 5 parts per million oxygen."

The Joint Commenters also state that subsection (e)(i) of Rule 51 "is intended to address meters with capacity of less than 500 cubic feet per hour" and should be modified to state "[p]ositive displacement diaphragm-type meters that have capacities ~~of~~ **under** 500 cubic feet per hour . . . ." Joint Commenters' comments, p. 2. Similarly, DTE Gas comments that "of" should

be modified to state “less than” on page 1 of its comments. In their additional comments, the Joint Commenters recommend an additional modification to Rule 51, to be consistent with the Technical Standards for Electric Service. They propose adding the following additional language to the end of subsection (a): “A utility may rely on the certification of accuracy by the manufacturer on all new meters.” Joint Commenters’ additional comments, p. 3. The Joint Commenters also suggest adding “unless retired due to obsolescence” to subsection (b) to read as follows: “A meter or an associated metering device, or both, ~~shall~~**must** be tested after it is removed from service **unless retired due to obsolescence. Such**These tests ~~shall~~**must** be made before the meter or associated metering device is adjusted, repaired, or retired.” *Id.*

The Commission again agrees with the Joint Commenters and DTE Gas that Rule 51(e)(i) should be revised. The Commission notes the Joint Commenters’ proposal but finds that DTE Gas’s proposed revision is consistent with other rules. Therefore, the rule should be amended as follows: “[p]ositive displacement diaphragm-type meters that have capacities **less than** 500 cubic feet per hour . . . .”

The Commission declines to adopt the additional modifications as proposed by the Joint Commenters. The Joint Commenters have not presented sufficient rationale to demonstrate what a manufacturer certification of accuracy entails, and the Commission is not persuaded that all manufacturers utilize adequate testing measures or what standard of accuracy the individual manufacturers would be certifying. Therefore, the proposed addition to Rule 51(a) is rejected. Similarly, the Commission declines to incorporate the proposed addition of “unless retired due to obsolescence” to Rule 51(b). The Commission finds that it is appropriate to test obsolete meters given the potential for meter failure and billing inaccuracies due to such failures. As noted

previously, Rule 2(5) provides that utilities may request a waiver from this rule set which can be reviewed by the Commission on a case-by-case basis.

Finally, the Joint Commenters note that in subsection (2)(d) of R 460.2351a (Rule 51a), the “standard was updated in 2008 and should be revised to refer to ANSI/ASQ Z1.4-2008 (R2013).” Joint Commenters’ comments, p. 2. This subsection is also addressed by Mr. Adamczyk’s comments; however, he proposed that Rule 51a(2)(d) should be revised to state “ANSI/ASQ Z1.4-2003 (R2018)” rather than the suggested revision made by the Joint Commenters.

The Commission has reviewed each comment and finds that it erred in listing the reaffirmed year in Rule 51a(2)(d). Mr. Adamczyk’s comment correctly reflects the appropriate reference and, therefore, Rule 51a(2)(d) is amended to state, in pertinent part, “ANSI/ASQ Z1.4-2003 (R2018).”

DTE Gas also comments on R 460.2371 (Rule 71), including noting that the terms “meter reading factor,” “approved billing period,” and “site readiness” should be defined and that the following language should be added: **“In addition, for service agreements with builder associations who request multiple service installations, agreed installation date and site readiness by individual service address is required.”** DTE Gas’s comments, p. 2.

The Commission finds that the term “approved billing period” is not utilized in the technical standards for gas service, and the addition of a definition for this term is unnecessary. The Commission also declines to add additional definitions for “site readiness” and “meter reading factor” at this time. The Commission finds that site readiness can vary based upon the individual site and setting specific standards in the rules is overly prescriptive. The utilities will be able to outline specific requirements in their applications. Further, the Commission finds that the term “meter reading factor” is self-explanatory and does not require a definition in the rule set.

Similarly, the additional language proposed by DTE Gas for Rule 71 is unnecessary and the Commission declines to adopt the additional language.

Additionally, DTE Gas comments that Rule 81 should be modified to state: “Gas that is distributed by a utility to a customer must not contain more than ~~0.3~~ **0.25** grains of hydrogen sulfide ~~or~~ **and** more than ~~20~~ **5** grains of total sulfur per 100 cubic feet, including the sulfur in any hydrogen sulfide.” DTE Gas’s comments, p. 2.

The Commission finds that DTE Gas failed to provide any justification for the proposed change to Rule 81, and as a result, the Commission is unable to fully evaluate the proposed change. Absent additional supporting rationale, the Commission declines to modify the standards set forth in Rule 81.

Mr. Adamczyk proposed many changes, noting his changes in bolded blue text in the proposed rule set. The majority of Mr. Adamczyk’s modifications are stylistic in nature. Specifically, he suggests modifying the use of “all of” to “all” and “pursuant to” to “under” in multiple instances. The Commission notes that Mr. Adamczyk provided no explanation or justification for the proposed changes and, therefore, the Commission is unable to evaluate the proposed changes. In addition, many of the suggested edits would create inconsistency between the Commission’s rule sets and, therefore, the Commission finds that they should be rejected.

As noted in the December 19 order, Mr. Adamczyk proposed many revisions to the references to standards reflected in the rules. As indicated above, the Commission finds that Mr. Adamczyk’s suggested correction to Rule 51a(2)(d) should be adopted. Mr. Adamczyk’s comments were attached to the December 19 order for review by interested parties. No additional comments or objections were received regarding Mr. Adamczyk’s comments. Many of the standards referenced in the amended rules as proposed by the Commission are 10 to 20 years old.

Given the existence of updated standards, the Commission finds that modifying the references in the amended rules to the most current standard is reasonable and prudent as they most appropriately reflect current technologies and concerns. Therefore, the Commission has modified each reference to the updated standard as suggested by Mr. Adamczyk in the attached proposed rule set.

THEREFORE, IT IS ORDERED that:

A. The technical standards for gas service, attached as Exhibit A, are approved and shall be submitted to the Legislative Service Bureau and the Michigan Office of Administrative Hearings and Rules for their formal approvals.

B. Upon formal approval of the attached technical standards for gas service by the Legislative Service Bureau and the Michigan Office of Administrative Hearings and Rules, they shall be transmitted to the Joint Committee on Administrative Rules.

The Commission reserves jurisdiction and may issue further orders as necessary.

MICHIGAN PUBLIC SERVICE COMMISSION

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Sally A. Talberg, Chairman

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Daniel C. Scripps, Commissioner

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Tremaine L. Phillips, Commissioner

By its action of January 23, 2020.

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Lisa Felice, Executive Secretary

DEPARTMENT OF ~~LABOR AND ECONOMIC GROWTH~~ LICENSING AND  
REGULATORY AFFAIRS

PUBLIC SERVICE COMMISSION

TECHNICAL STANDARDS FOR GAS SERVICE

Filed with the secretary of state on

These rules become effective immediately upon filing with the secretary of state unless adopted under sections 33, 44, or 45a(6) of the administrative procedures act of 1969, 1969 PA 306, MCL 24.233, 24.244, or 24.245a. Rules adopted under these sections become effective 7 days after filing with the secretary of state.

(By authority conferred on the public service commission by sections **4 and 6 of 1939 PA 3**, ~~Act No. 3 of the Public Acts of 1939~~ **MCL 460.4 and 460.6**, ~~as amended, and section 2 of Act No. 165 of the Public Acts of 1969~~ **PA 165**, ~~being SS460.6 and 483.152 of the Michigan Compiled Laws~~ **MCL 483.152**, **section 5 of 1919 PA 419**, **MCL 460.55**, **sections 3, 9, and 231 of the executive organization act of 1965**, **1965 PA 380**, **MCL 16.103, 16.109, and 16.331**, **and section 2(12) of 1909 PA 300**, **MCL 462.2(12)**, **and Executive Reorganization Order Nos. 1996-2, 2003-1, 2008-4, and 2011-4**, **MCL 445.2001, 445.2011, 445.2025, and 445.2030**)

R 460.2301, R 460.2302, R 460.2321, R 460.2323, R 460.2331, R 460.2332, R 460.2333, R 460.2335, R 460.2341, R 460.2351, R 460.2353, R 460.2354, R 460.2355, R 460.2362, R 460.2363, R 460.2371, R 460.2373, R 460.2381, R 460.2382, and R 460.2383 of the Michigan Administrative Code are amended, R 460.2324, R 460.2344, R 460.2345, and R 460.2351a are added, and R 460.2342, R 460.2352, R 460.2361, R 460.2364, and R 460.2374 are rescinded, as follows:

PART 1. GENERAL PROVISIONS

R 460.2301 Definitions.

Rule 1. As used in these rules:

(a) ~~“Acceptable to the commission” or “Approved by the commission” or “authorized by the commission”~~ means that a commission order has been ~~obtained~~ **issued**.

(b) “British thermal unit” means the quantity of heat that must be added to 1 avoirdupois pound of pure water to raise its temperature from 58.5 degrees Fahrenheit to 59.5 degrees Fahrenheit under standard pressure. Standard pressure is 30 inches mercury at 32 degrees Fahrenheit or 14.73 pounds per square inch absolute and with acceleration due to gravity equal to 32.174 feet per second per second.

(c) “Commission” means the Michigan public service commission.

(d) “Cubic foot of gas” means **either of** the following:

(i) For billing purposes, a standard cubic foot of gas is that quantity of dry gas ~~which, that,~~ at a temperature of 60 degrees Fahrenheit and an absolute pressure of 14.65 pounds per

square inch, occupies 1 cubic foot. The commission may, however, approve a different absolute pressure base.

(ii) For testing purposes, such as testing for heating value, a standard cubic foot of gas is that quantity of gas ~~which~~, **that**, when saturated with water vapor at a temperature of 60 degrees Fahrenheit and an absolute pressure of 14.73 pounds per square inch, occupies 1 cubic foot.

(e) "Customer" means an individual, **firm, association, or corporation**~~business~~, excluding other gas utilities, **or any agency of the federal, state, county, or municipal government** that purchases **or otherwise receives** gas or transportation services, or both, on the utility's system.

(f) "Hazardous condition" means any condition ~~which~~ **that** the utility determines poses an immediate and serious threat to the health, safety, or welfare of a customer or the general public and ~~which~~ **that** requires immediate action.

(g) ~~"Liquefied petroleum gas-air mixture" means a gas that is produced by mixing an appropriate quantity of air with propane vapor, butane vapor, or a mixture of such vapors.~~

~~(h) "Meter" means, unless otherwise qualified, a device owned by a utility that is used in measuring a quantity of gas.~~

~~(ih) "Meter accuracy" means the volume that is measured by a meter as a percent of the actual volume that flowed through the meter as measured by a working standard.~~

**(i) "Meter error" means a failure to accurately measure and record all of the natural gas used that is required by the applicable rate or rates.**

(j) "Mixed gas" means a gas that is produced by mixing natural gas with any of the following:

- (i) Air.
- (ii) Inert gas.
- (iii) Liquefied petroleum gas.
- (iv) ~~Liquefied petroleum gas-air mixture.~~
- ~~(v) Other flammable gas.~~
- ~~(vi) Substitute natural gas.~~

(k) "Premises" means **an individual piece of land or real estate that is not separated by public roads, streets, or alleys**, including buildings and other appurtenances ~~thereon on that land or real estate.~~

(l) "Potentially hazardous condition" means any condition ~~which~~ **that** the utility determines has the potential to become a hazardous condition, but ~~which~~ **that** does not require immediate action. ~~All of the following are examples of potentially hazardous conditions, including, but not limited to, any of the following:~~

(i) Customer failure to permit the utility to perform inspections and maintenance on the utility's facilities in or on the customer's premises.

(ii) Customer alterations or modifications of the utility's facilities located in or on the customer's premises.

(iii) Customer construction of a structure or appurtenance near or over the main, service line piping, or meter set assembly so that the utility's facilities are not in compliance with the provisions of ~~R 460.1400~~**R 460.20101 to R 460.20606 of the Michigan gas safety standards** ~~et seq. of the Michigan Administrative Code~~ or the utility's standards.



- (iv) Customer failure to correct or replace gas utilization equipment or gas fuel line piping that has been previously identified and classified as potentially hazardous by the utility.
- (m) "Rate book" means the assembled rate schedules, rules, regulations, and standard forms of the utility as filed with the commission **and available on the commission's website.**
- (n) "Required access" means access that is necessary to conduct any of the following:
  - (i) Routine inspections and maintenance.
  - (ii) Meter readings of gas usage.
  - (iii) Scheduled replacement, repairs, relocation, or disconnection of branch service lines or other changes with respect to service lines and meter assembly piping.
- (o) "Substitute natural gas" means gas ~~which that~~ is interchangeable and compatible with natural gas and ~~which that~~ is manufactured from carbon and hydrogen-bearing materials.
- (p) "Utility" means a person, firm, corporation, cooperative, association, or agency ~~which that~~ is subject to the jurisdiction of the commission and ~~which that~~ delivers or distributes and sells gas to the public for heating, power, or other residential, commercial, or industrial purposes.

R 460.2302 Application, intention, and interpretation of rules; utility rules and regulations.

Rule 2. (1) These rules apply to a gas utility ~~which that~~ operates within the state of Michigan and ~~which that~~ is subject to the jurisdiction of the commission.

(2) These rules are intended to promote safe and adequate gas service to the public, to provide technical standards for uniform and reasonable practices by gas utilities, to encourage efficiency and economy, and to establish a basis for determining the reasonableness of such demands as may be made by the public upon gas utilities.

(3) Questions that concern the application or interpretation of these rules and disagreements with respect to any service rules and regulations that are promulgated by a gas utility shall be referred to the commission for a ruling.

(4) A utility shall adopt reasonable rules and regulations, subject to commission approval, governing its relations with customers. The rules and regulations ~~shall~~**must** not be inconsistent with these rules and any other rules of the commission ~~as may be promulgated from time to time.~~ A utility's rules and regulations ~~shall~~**must** constitute an integral part of the utility's rate book.

**(5) Upon written request of a customer, utility, or on its own motion, the commission may waive any requirements of these rules when it determines the waiver will further the effective and efficient administration of these rules and is in the public interest.**

## PART 2. RECORDS, REPORTS, AND OTHER INFORMATION

R 460.2321 Retention of records.

Rule 21. All records that are required to be made or maintained pursuant to these rules ~~shall~~**must** be preserved by the utility for a period of time specified in R 460.2501 ~~et seq. of the Michigan Administrative Code to R 460.2582.~~ If a time period is not specified in these rules or in R 460.2501 ~~et seq. to R 460.2582,~~ **all records shall****must** be preserved by the utility for, ~~not less than~~**at a minimum,** 1 year after the records are completed.

R 460.2323 Reports and records generally.

Rule 23. (1) Volumetric data that is contained in any report ~~which is filed with the commission~~ **shall** ~~must~~ define the pressure, temperature, and water saturation upon which the data is based.

(2) In addition to reports or records that are required to be filed with the commission pursuant to these rules, a utility shall provide the commission with a current list of the name, title, address, ~~and~~ telephone number, **and email address** of the person who should be contacted in connection with all of the following:

- (a) General management duties.
- (b) Customer complaints that relate to operations.
- (c) Construction, maintenance, operations, and emergencies during office and nonoffice hours for each major operating headquarters.
- (d) Meter tests and repairs.

#### **R 460.2324 Security reporting.**

**Rule 24. (1) To inform the commission regarding matters that may affect the security or safety of persons or property, whether public or private, a utility must do both of the following:**

**(a) Provide a written or oral annual report, individually or jointly with other utilities, to designated members of the commission staff regarding the utility's cybersecurity program and related risk planning. This report on the threat assessment and preparedness strategy must contain all of the following information:**

**(i) An overview of the program describing the utility's approach to cybersecurity awareness and protection.**

**(ii) A description of cybersecurity awareness training efforts for the utility's staff members, specialized cybersecurity training for cybersecurity personnel, and participation by the utility's cybersecurity staff in emergency preparedness exercises in the previous calendar year.**

**(iii) An organizational diagram of the utility's cybersecurity organization, including positions and contact information for primary and secondary cybersecurity emergency contacts.**

**(iv) A description of the utility's communications plan regarding unauthorized actions that result in loss of service, financial harm, or breach of sensitive business or customer data, including the utility's plan for notifying the commission and customers.**

**(v) A redacted summary of any unauthorized actions that resulted in material loss of service, financial harm, or breach of sensitive business or customer data, including the parties that were notified of the unauthorized action and any remedial actions undertaken.**

**(vi) A description of the risk assessment tools and methods used to evaluate, prioritize, and improve cybersecurity capabilities, including work completed pursuant to R 460.2345.**

**(vii) General information about current emergency response plans regarding cybersecurity incidents, domestic preparedness strategies, threat assessments, and vulnerability assessments.**

**(b) In addition to the information required under subdivision (a) of this subrule, an investor-owned public utility must include in its annual report to the Michigan public service commission an overview of major investments in cybersecurity during the**

previous calendar year and plans and rationale for major investments in cybersecurity anticipated for the next calendar year.

(2) As soon as reasonably practicable and prior to any public notification, a utility must orally report the confirmation of a cybersecurity incident to a designated member of the commission staff and to the Michigan fusion center, unless prohibited by law or court order or instructed otherwise by official law enforcement personnel, if any of the following occurred:

(a) A person intentionally interrupted the production, transmission, or distribution of natural gas.

(b) A person extorted money or other things of value from the utility through a cybersecurity attack.

(c) A person caused a denial of service in excess of 12 hours.

(d) A security breach, as defined by section 3(b) of the identity theft protection act, 2004 PA 452, MCL 445.63(b), prior to public and customer notification.

(e) At the utility's discretion, any other cybersecurity incident, attack, or threat that the utility deems notable, unusual, or significant.

(3) As used in subrule (2) of this rule, "person" means any individual, firm, corporation, educational institution, financial institution, governmental entity, or legal or other entity.

(4) As used in subrule (2)(c) of this rule, "denial of service" means, for a utility, a successful attempt to prevent a legitimate user from accessing electronic information made accessible by the utility or by another party on the behalf of the utility.

### PART 3. SERVICE REQUIREMENTS

R 460.2331 Sale of gas.

Rule 31. (1) All gas that is sold by a utility ~~shall~~ **must** be on the basis of meter measurement, unless otherwise ~~authorized~~ **approved** by the commission.

(2) The utility shall provide the ~~characteristics~~ **terms and conditions** of service available to prospective customers upon request.

(3) If gas is supplied and metered to a customer at a nominal delivery pressure of 0.25 pounds per square inch gauge, then, for billing purposes, both of the following provisions apply:

(a) The gas volume that is registered by the meter is assumed to be measured at standard billing conditions as defined in R 460.2301(d)(i), regardless of the actual temperature of the gas or actual atmospheric pressure. ~~However, a~~ **All meters which that** are to operate at ambient outdoor conditions ~~and which are installed after the effective date of this subrule shall must be installed~~ **equipped** with a temperature-compensating device.

(b) If the billing pressure base is 14.65 pounds per square inch absolute, then the atmospheric pressure is assumed to be 14.4 pounds per square inch absolute. If the commission has approved a different billing pressure base, then the assumed atmospheric pressure is equal to the difference between such absolute billing pressure base and 0.25 pounds per square inch.

(4) If gas is supplied to a customer through a low-pressure distribution system such that a service regulator is not used before metering, then, for billing purposes, the gas ~~shall~~ **must** be assumed to be supplied and metered at 0.25 pounds per square inch gauge. The low-pressure

system ~~shall~~**must** be operated so that the gauge pressure at the outlet of the meter ~~shall~~**must** be maintained within a range of 3 inches water column minimum to a maximum of 14 inches water column. However, delivery to the customer may be as high as 18 inches water column if the pressure to the ~~appliances~~**gas utilization equipment** is regulated to not more than 14 inches water column. A utility may implement different standards for operating its low-pressure system if those standards are approved by the commission.

(5) If gas is supplied and metered to a customer at a nominal delivery pressure of more than 0.25 pounds per square inch gauge, then, for billing purposes, all of the following provisions apply:

(a) The gas volume that is measured by the meter ~~shall~~**must** be corrected to standard billing conditions as defined in R 460.2301(d)(i).

(b) Gas volume corrections for temperature ~~shall~~**must** be made ~~in accordance with~~**pursuant to** Charles' law. Gas volume corrections for pressure ~~shall~~**must** be made ~~in accordance with~~**pursuant to** Boyle's law. Gas volume corrections for supercompressibility ~~shall~~**must** be made ~~in accordance with~~**pursuant to** either of the following publications ~~of the American gas association (AGA), both of which are adopted by reference in R 460.2344 these rules and may be purchased at the cost specified as of the time of adoption of these rules (which is subject to change) from the American Gas Association, 1515 Wilson Boulevard, Arlington, VA 22209, (703) 841-8558, or from the Michigan Public Service Commission, 6545 Mercantile Way, P.O. Box 30221, Lansing, MI 48909:~~

(i) "Manual for the Determination of Supercompressibility Factors, ~~for Natural Gas, Project NX-19," PRCI Project NX-19~~"(1962) (A.G.A. Catalog No. L00340). ~~.. \$35.00. as adopted by reference in R 460.2344.~~

(ii) "American Gas Association (AGA) Report No. 8, Part 1, "Thermodynamic Properties of Compressibility and Supercompressibility for Natural Gas and Other Related Hydrocarbon Gases, Transmission Measurement Committee Report No. 8," (1992) (A.G.A. Catalog No. .... \$80.00 (\$40.00 for AGA members) **DETAIL and GROSS Equations of State.**" (2017) AGA Catalog No. XQ1704-1 as adopted by reference in R 460.2344.

(c) If the pressure at which the gas is metered is established on a gauge basis rather than an absolute basis, then the absolute pressure at which the gas is metered ~~shall~~**must** be inferred by summing the gauge pressure and either the actual atmospheric pressure or a reasonable estimate thereof or an atmospheric pressure that is filed with, and approved by, the commission.

(d) If a pressure-compensating device is used with the meter, the device ~~shall~~**must** be calibrated using the actual atmospheric pressure or a reasonable estimate thereof.

#### R 460.2332 ~~Permanent~~ Service line ~~rule~~**tariffs.**

Rule 32. Within 30 days after a company commences operating as a gas utility, the utility shall file its service line ~~installation rule~~**tariffs** for commission approval. ~~Such rules and regulations~~**These tariffs shall** constitute an integral part of the utility's rate book.

#### R 460.2333 Main extension ~~rule~~**tariffs.**

Rule 33. Within 30 days after a company commences operating as a gas utility, the utility shall file its main extension ~~rule~~**tariffs** for commission approval. ~~Such rules and regulations~~**These tariffs shall** constitute an integral part of the utility's rate book.

R 460.2335 Interruptions of service.

Rule 35. (1) This rule does not apply to service interruptions that result from a utility's implementation of the provisions of R 460.2101 et seq. of the Michigan Administrative Code or a utility's shutoff of service **due to nonpayment of bills, unauthorized use of gas service, or** pursuant to the provisions of R 460.2371 ~~to and~~ R 460.2374 **2373**.

(2) A utility shall make a reasonable effort to prevent interruptions of service and, when such interruptions occur, shall endeavor to reestablish service with the shortest possible delay consistent with the safety of its customers, its employees and others engaged in work for the utility, and the general public. If service is necessarily interrupted for the purpose of working on the distribution system or plant equipment, it ~~shall~~**must** be done at a time that causes the least inconvenience to customers, and those customers who may be seriously affected shall be notified in advance.

(3) If the supply of gas diminishes to the point where continuous service to customers is threatened, the utility may limit or shut off service to its customers pursuant to curtailment procedures approved by the commission.

(4) A utility shall keep records of ~~major interruptions of service~~ **reportable outages** on its entire system or in major divisions or operating districts ~~thereof of its system~~. The records ~~shall~~**must** include a statement of the time, duration, and cause of the interruption. A utility shall report interruptions of service, as required by R 460.14001 et seq. of the Michigan Administrative Code **460.20101 to R 460.20606** and shall periodically make an analysis of the records ~~for the purpose of determining~~ **to determine** steps to be taken to prevent the recurrence of ~~such~~ **these** interruptions.

#### PART 4. ENGINEERING

R 460.2341 Gas facilities; construction and installation.

Rule 41. (1) Gas facilities of a utility ~~shall~~ **must** be constructed and installed ~~in accordance with~~ **pursuant to** accepted engineering practices in the gas industry **and R 460.20101 to R 460.20606** to ensure, to the extent reasonably practicable, continuity of service, uniformity in the quality of service provided, and the safety of persons and property.

(2) **All new meters must conform to 1 of the following standards adopted by reference in R 460.2344:**

(a) American National Standards Institute (ANSI) B109.1-2019 for Diaphragm-Type Gas Displacement Meters (Under 500 Cubic Feet per Hour Capacity).

(b) ANSI B109.2-2000 (R2008) for Diaphragm-Type Gas Displacement Meters (500 Cubic Feet per Hour Capacity and Over).

(c) ANSI B109.3-2019 for Rotary Type Gas Displacement Meters.

(d) AGA Report No. 3, Orifice Metering of Natural Gas Part 2: Specifications and Installation Requirements.

(e) AGA Report No. 7, Measurement of Gas by Turbine Meter.

(f) AGA Report No. 9, Measurement of Gas by Multipath Ultrasonic Meters.

(g) AGA Report No. 11, Measurement of Natural Gas by Coriolis Meter, Second Edition.

R 460.2342 Standards of accepted engineering practice **Rescinded**.

Rule 42. ~~Unless otherwise specified by the commission, a utility shall use the publications listed below as standards of accepted practice:~~

~~—(a) The current edition of the Michigan gas safety code, R 460.14001 et seq. of the Michigan Administrative Code, which may be ordered from the Michigan Public Service Commission, 6545 Mercantile Way, P.O. Box 30221, Lansing, MI 48909.~~

~~—(b) The following American national standards institute (ANSI) publications, which are adopted by reference in these rules and which may be purchased at the specified cost as of the time of adoption of these rules (which is subject to change) from the American National Standards Institute, 1430 Broadway, New York, New York 10018, (212) 642-4900, or from the American Gas Association (AGA), 1515 Wilson Boulevard, Arlington, VA 22209, (703) 841-8558, or from the Michigan Public Service Commission, 6545 Mercantile Way, P.O. Box 30221, Lansing, MI 48909:~~

~~—(i) ANSI/API 2530, “Orifice Metering of Natural Gas and Other Related Hydrocarbon, A.G.A. Report No. 3,” as follows:~~

~~—(A) Part I, “General Equations and Uncertainty Guidelines,” (1990) (A.G.A. Catalog No. XQ9017) \$55.00 from ANSI or \$50.00 from AGA (\$40.00 for AGA members).~~

~~—(B) Part II, “Specification and Installation Requirements,” (1991) (A.G.A. Catalog No. XQ9104) \$55.00 from ANSI or \$50.00 from AGA (\$40.00 for AGA members)~~

~~—(C) Part III, “Natural Gas Applications,” (1992) (A.G.A. Catalog No. XQ9210) \$65.00 from ANSI or \$50.00 from AGA (\$40.00 for AGA members)~~

~~—(D) Part IV, “Background Development, Implementation Procedures, and Sub Routine Documentation for Empirical Flange Tapped Discharged Coefficient Equation,” (1992) (A.G.A. Catalog No. XQ9211) \$50.00 from AGA (\$40.00 for AGA members). (ii) ANSI B109.1, “Diaphragm Type—Gas Displacement Meters, Under 500 Cubic Feet per Hour Capacity,” (1992) (A.G.A. Catalog No. X69218) \$20.00 from ANSI or \$20.00 from AGA (\$10.00 for AGA members).~~

~~—(iii) ANSI B109.2, “Diaphragm Type—Gas Displacement Meters, 500 Cubic Feet per Hour Capacity and Over,” (1992) (A.G.A. Catalog No. X69219) \$20.00 from ANSI or \$20.00 from AGA (\$10.00 for AGA members).~~

~~—(iv) ANSI B109.3, “Gas Displacement Meters, Rotary Type,” (1992) (A.G.A. Catalog No. X69220) \$20.00 from ANSI or \$20.00 from AGA (\$10.00 for AGA members).~~

~~—(v) ANSI Z223.1 National Fuel Gas Code—1992 edition, which may also be purchased from the American Society of Mechanical Engineers, 345 East 47th Street, New York, NY 10017, (212) 705-7722, or from the National Fire Protection Association (NFPA), P.O. Box 9146, Quincy, MA 02269, (800) 344-3555 \$24.50 (\$22.00 for NFPA members).~~

~~—(c) The following national fire protection association standards, which are adopted by reference in these rules and which may be purchased at the specified cost as of the time of adoption by reference in these rules and which may be purchased at the specified cost as of the time of adoption of these rules (which is subject to change) from the National Fire Protection Association, P.O. Box 9146, Quincy, MA 02269, (800) 344-3555, or from the Michigan Public Service Commission, 6545 Mercantile Way, P.O. Box 30221, Lansing, MI 48909:~~

~~—(i) “NFPA Standard 58, Storage and Handling of Liquefied Petroleum Gases,” (1992) \$24.50 (\$22.00 for NFPA members).~~

#### **R 460.2344 Adoption of standards by reference.**

**Rule 44. (1) The publications and standards listed in this rule are adopted by reference and are a part of these rules. Publications identified as published by a specific**

organization are available from the organization at the address specified in this rule. All prices are current at the time of the adoption of these rules. The commission also has copies of the publications available for inspection and distribution at its offices located at 7109 W. Saginaw Highway, Lansing, Michigan 48917 at a cost of 10 cents per page unless otherwise specified in this rule.

(2) The numbers in parentheses following the publications adopted by reference indicate the applicable editions.

(a) The current edition of the Michigan gas safety standards, which is available online at [www.michigan.gov/mpsc](http://www.michigan.gov/mpsc) or may be ordered from the Michigan public service commission. \$61.49.

(b) The following publications of the American Gas Association (AGA), available from the American Gas Association, 400 North Capitol Street, NW, Suite 450, Washington, DC 20001, 202-824-7000, [www.aga.org](http://www.aga.org):

(i) "Manual for the Determination of Supercompressibility Factors, PRCI Project NX-19," (1970) AGA Catalog No. L00340. \$149.00.

(ii) AGA Report No. 8, Part 1, "Thermodynamic Properties of Natural Gas and Related Gases, DETAIL and GROSS Equations of State." (2017) AGA Catalog No. XQ1704-1. \$320.00.

(iii) AGA Report No. 3, "Orifice Metering of Natural Gas Part 1: General Equations and Uncertainty Guidelines." (2013, includes errata) AGA Catalog No. XQ1201. \$168.00.

(iv) AGA Report No. 3, Part 2, "Orifice Metering of Natural Gas and Other Related Hydrocarbon Fluids – Concentric, Square-edged Orifice Meters, Specifications and Installation Requirements." (2017, includes errata) AGA Catalog No. XQ1601. \$168.00.

(v) AGA Report No. 3, "Orifice Metering of Natural Gas Part 3: Natural Gas Applications." (2013) AGA Catalog No. XQ1304. \$148.00.

(vi) AGA Report No. 3, "Orifice Metering of Natural Gas Part 4: Background, Development, Implementation Procedures." (1992) AGA Catalog No. XQ9211. \$148.00.

(vii) American National Standards Institute (ANSI) B109.1-2019, "Diaphragm-Type Gas Displacement Meters, Under 500 Cubic Feet per Hour Capacity." AGA Catalog No. X61902. \$110.00.

(viii) ANSI B109.2-2000 (R2008), "Diaphragm-Type Gas Displacement Meters, 500 Cubic Feet per Hour Capacity and Over." AGA Catalog No. XQ0009. \$110.00.

(ix) ANSI B109.3-2019, "Rotary Type Gas Displacement Meters." (2000) AGA Catalog No. XM1901. \$110.00.

(x) AGA Report No. 7, "Measurement of Gas by Turbine Meter." (2006) AGA Catalog No. XQ0601. \$352.00.

(xi) AGA Report No. 9, "Measurement of Gas by Multigraph Ultrasonic Meters." (2017) AGA Catalog No. XQ1705. \$400.00.

(xii) AGA Report No. 11, "Measurement of Natural Gas by Coriolis Meter, Second Edition." (2013) AGA Catalog No. XQ1301. \$440.00.

(xiii) National Fuel Gas Code. (2018) AGA Catalog No. Z223118. \$60.00.

(c) The following publications of the American Society for Testing and Materials (ASTM) International available from ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA, 19428, 610-832-9585, [www.astm.org](http://www.astm.org):

(i) ASTM D1826-94, “Standard Test Method for Calorific (Heating) Value of Gases in Natural Gas Range by Continuous Recording Calorimeter.” (2017) ASTM Catalog No. D-1826. \$46.00.

(ii) ASTM D1945-14, “Standard Test Method for Analysis of Natural Gas by Gas Chromatography.” ASTM Catalog No. D-1945. \$52.00.

(iii) ASTM D3588-98, “Standard Practice for Calculating Heating Value, Compressibility Factor, and Relative Density of Gaseous Fuels.” (2017) ASTM Catalog No. D-3588. \$46.00.

(d) The following publications of the American Society for Quality (ASQ) available from American Society for Quality, PO Box 3005, Milwaukee, WI 53201, 800-248-1946, [www.asq.org](http://www.asq.org):

(i) ANSI/ASQ Z1.9-2003 (R2018), “Sampling Procedures and Tables for Inspection by Variables for Percent Nonconforming.” \$149.00.

(ii) ANSI/ASQ Z1.4-2003 (R2018), “Sampling Procedures and Tables for Inspection by Attributes.” \$159.00.

(e) American Petroleum Institute (API) Standard 1164 Ed. 2 (2009/R2016), “Pipeline SCADA Security,” available from API Publishing Services, 1220 L Street, NW, Washington DC 20005. \$146.00.

#### **R 460.2345 Security standards.**

**Rule 45.** Unless otherwise approved by the commission, all utilities utilizing supervisory control and data acquisition systems shall implement API Standard 1164 Ed. 2 (2009/R2016), as adopted by reference in R 460.2344.

### **PART 5. INSPECTION OF METERS METERING EQUIPMENT INSPECTIONS AND TESTS**

R 460.2351 Meters and associated metering devices; inspections; ~~and tests;~~ **and records.**

Rule 51. Inspections and tests of meters and associated metering devices ~~shall~~**must** be made by, or on behalf of, each utility as follows:

(a) A meter or an associated metering device that is not included as a part of the meter, or both, ~~shall~~**must** be inspected and tested before being placed in service, and the error ~~shall~~**must not** be not more than 1.0%. ~~In place of this requirement, methods of sample testing that are acceptable to the commission may be used.~~

(b) A meter or an associated metering device, or both, ~~shall~~**must** be tested after it is removed from service. ~~Such~~**These** tests ~~shall~~**must** be made before the meter or associated metering device is adjusted, repaired, or retired.

(c) A repaired meter or a meter that is removed from service ~~shall~~**must** be leak-tested before being returned to service, subject to the following requirements:

(i) If tested in the field, a meter ~~shall~~**must** be tested at the actual meter operating pressure of the system.

(ii) If tested in the shop, a meter ~~shall~~**must** be subjected to an internal pressure test of, **at a minimum, not less than** 3.0 pounds per square inch gauge pressure. ~~and, in~~ **In** addition, any meter that will operate above 3.0 pounds per square inch gauge pressure ~~shall~~**must** be so marked on the meter and ~~shall~~**must** be subjected to 1 of the following tests:



(A) An internal pressure test of, **at a minimum, not less than** the manufacturer's rated operating pressure.

(B) An internal pressure test at 10% above the maximum operating pressure to which the meter could be subjected.

(C) Any suitable test that is ~~acceptable to~~ **approved by** the commission.

(iii) During the pressure test, the meter ~~shall~~ **must** be checked for leaks by 1 of the following tests:

(A) Immersion test.

(B) Soap test.

(C) Pressure drop test of a type that is ~~acceptable to~~ **approved by** the commission.

(d) As part of its rate book, a utility shall file, for commission approval, a statement of its policy with regard to testing meter accuracy upon a customer's request. In the absence of a filed policy approved by the commission, the utility shall adhere to both of the following provisions:

(i) A utility shall test meter accuracy upon the request of a customer if the customer does not request a test more than once every 2 years and if the customer agrees to accept the results of the test as the basis for determining the difference claimed. A charge ~~shall~~ **must** not be made to the customer for the first test in any 5-year period, but if subsequent tests during the same period, for the same customer, show the meter to be within the allowable limits of accuracy, the utility may charge the customer an amount for subsequent tests which is uniform and which does not exceed the utility's direct cost thereof, plus a reasonable charge for administrative overhead. The customer may be present at the test if he or she makes a request before the test.

(ii) A written report ~~shall~~ **must** be made to the customer by the utility. The report ~~shall~~ **must** state the results of the test. A record of the test ~~shall~~ **must** be kept by the utility.

(e) A utility shall make periodic tests of meters, associated devices, and instruments to ensure their accuracy. The tests ~~shall~~ **must** be conducted according to the following schedule, unless otherwise ~~authorized~~ **approved** by the commission. **A utility may test meters more frequently than provided in the following schedule without commission approval:**

(i) Positive displacement diaphragm-type meters that have capacities of **less than 500 cubic feet per hour and under 10 years, not to exceed 123 months.**

(ii) Positive displacement diaphragm-type meters that have capacities over 500 cubic feet per hour ~~7 years~~, **not to exceed 87 months.**

(iii) **Rotary meters that have capacities of less than 15,000 cubic feet per hour, which may be tested in place, not to exceed 51 months.**

(iv) **Rotary meters that have capacities of 15,000 cubic feet per hour or more, which may be tested in place, not to exceed 27 months.**

(v) Other meter types, such as ~~proportional, rotary, and turbine,~~ **Coriolis, 4-Path or greater ultrasonic, or other metering technology, which** may be tested in place when possible ~~2 years~~, **not to exceed 27 months.**

(vi) ~~Orifice meters 6 months,~~ **2 times per year with intervals not to exceed 7.5 months.**

(vii) Gas instruments, such as base volume, base pressure, and base temperature-correcting devices, ~~shall~~ **must** be ~~removed and~~ checked for calibration at intervals that correspond to the schedule for their associated meters ~~and shall be checked for calibration in place at intervals of not more than 2 years.~~ **The testing interval must not exceed 51 months.**

(viii) ~~Test bottles, 1 cubic foot 10 years~~ **deadweight testers, certified test meters, not to exceed 123 months.**

~~(vii) Deadweight testers 10 years.~~

~~(viii) Certified test meters 10 years.~~

(ix) Meter testing systems ~~shall~~**must** be calibrated when first installed and after alterations, damages, or repairs that might affect accuracy. To ~~assure~~ **ensure** that the accuracy of a meter testing system is maintained on a continuous basis, a daily leakage test ~~shall~~**must** be made and a weekly accuracy test with a comparison meter of known accuracy ~~shall~~**must** be made. If the test results differ by more than plus or minus 0.5% from the comparison meter, the cause of the error ~~shall~~**must** be determined and necessary corrections ~~shall~~**must** be made before the system is reused. The comparison meter ~~shall~~**must** be checked at an interval of 1 year **not to exceed 13 months.**

**(f) Utilities shall maintain records of meters that have been tested during the preceding calendar year and shall make this information available to the commission upon request. The record must contain all of the following information for each meter tested:**

**(i) Set year.**

**(ii) Type of case.**

**(iii) Manufacturer.**

**(iv) Customer class, either commercial and industrial or residential.**

**(v) Results of the meter test.**

**(vi) Whether the meter was retired and if so the reasons for the retirement.**

**R 460.2351a Statistical quality sampling program for diaphragm-type meters.**

**Rule 51a. (1) A utility shall comply with the provisions of R 460.2351, except that a utility that receives approval from the commission may adopt the requirements of this rule for statistical sampling and quality control of in-service diaphragm meters. Statistical sampling and quality control must be supervised by an individual trained in statistical sampling techniques.**

**(2) A utility may use any of the following statistical quality control programs for meter testing, as adopted by reference in R 460.2344:**

**(a) ANSI B109.1-2019, "Diaphragm-Type Gas Displacement Meters, Under 500 Cubic Feet per Hour Capacity."**

**(b) ANSI B109.2-2000 (R2008), "Diaphragm-Type Gas Displacement Meters, 500 Cubic Feet per Hour Capacity and Over."**

**(c) ANSI/ASQ Z1.9-2003 (R2018), "Sampling Procedures and Tables for Inspection by Variables for Percent Nonconforming."**

**(d) ANSI/ASQ Z1.4-2003 (R2018), "Sampling Procedures and Tables for Inspection by Attributes."**

**(3) A utility may use an alternative statistical quality sampling program if approved by the commission. An application to use an alternative program must include all of the following information:**

**(a) A description of the sampling program that must include all of the following:**

**(i) The type or types of meters subject to the sampling plan.**

**(ii) The frequency of testing.**

**(iii) The procedures to be used for the sampling.**

- (iv) The meter test method to be used.
- (v) The accuracy of the testing and of the sampling plan.
- (b) An explanation of the reason or reasons for the requested sampling plan.
- (c) An analysis that demonstrates that, with respect to assuring the accuracy of the meters tested, the requested sampling program is at least as effective as the standards listed in subrule (2) of this rule.

(4) Meters for quality control sampling must be separated into homogenous groups by year set and may be further separated by manufacturer, capacity rating, model, case type, diaphragm material, year manufactured, or other distinguishing characteristics. When 1 or more groups established are believed to be too small for practical quality control sampling, they may be combined with another group of similar operating characteristics to establish a larger sampling base. Combined groups must have sample size and acceptance-rejection numbers based on the combined total of meters. Samples must be drawn by a random method that ensures each meter in the group has an equal chance of being selected.

(5) All meter groups, or combined meter groups, must be subject to acceptance or rejection on the basis of the statistical results unless it becomes obvious that the rejected meters are predominantly from 1 identifiable subgroup which may be shown by test data to have been affected by location, age, or other common factors. If this result should occur, the identifiable subgroup may be separated and the remaining meters treated as a new combined group with appropriate sample size and acceptance-rejection numbers.

(6) A meter removed from a customer's premises and tested as part of any business practice not related to the statistical quality control program must be included only in the program's sample if the meter is randomly selected according to subrule (4) of this rule.

(7) Not later than March 1 of each year, utilities shall file a report of the meters that have been tested during the preceding calendar year. The report must include separate sections addressing results for meters tested as part of the statistical quality control program and meters tested as part of routine meter removals or exchanges. The report must detail both of the following:

- (a) All of the following meter characteristics:
  - (i) Set year.
  - (ii) Type of case.
  - (iii) Manufacturer.
  - (iv) Type of diaphragm.
  - (v) Revenue classification, either commercial and industrial or residential.
- (b) The number of meters in each meter class tested and found within the norm and within each 1% variance from norm between 94% accuracy and 106% accuracy. Meters that are slower than 94% and faster than 106% must each be grouped separately. Meters that are determined to be nonregistering must be reported to either have been repaired, tested, and returned to the field, or retired.

R 460.2352 Diaphragm type meters; meter tests; reports. **Rescinded.**

Rule 52. (1) A utility shall comply with the provisions of R 460.2351, except that a utility that receives approval from the commission may adopt the requirements of this rule.

~~-(2) This rule applies only to diaphragm-type meter categories that have a rated capacity as follows:~~

~~-(a) Category 1—500 cubic feet per hour or less.~~

~~-(b) Category 2—501 cubic feet per hour to 1000 cubic feet per hour.~~

~~-(c) Category 3—1001 cubic feet per hour or more.~~

~~-(3) As used in this rule:~~

~~-(a) “Meter class” means a group or groups of meters as assigned by the utility according to specified meter characteristics, such as TMS (type, make, size), set year, year of manufacture, or other similar characteristics.~~

~~-(b) “Norm” means the acceptable meter accuracy range between 98% and 102%.~~

~~-(c) “Test point,” for a meter, means the numerical equivalent of the accuracy variance from norm, with 1 test point equal to a 1% variance. For example, a meter that is between 104.1% and 105.0% or between 95.0% and 95.9% accurate on test would have 3 test points.~~

~~-(4) The overall annual test rate criteria shall be determined pursuant to all of the following provisions:~~

~~-(a) Determine the average test points per meter for each meter class (Pmc).~~

~~-(b) Multiply the total number of installed meters at year-end in each class by the respective Pmc to determine the total test points for each meter class. The test points for each meter class shall be added to arrive at total overall test points (Pt) for all installed meters specified in subrule (2) of this rule.~~

~~-(c) Divide Pt by the total number of installed meters at year-end to determine the overall average test points per meter.~~

~~-(d) Using the overall average test points per meter determined in subdivision (c) of this subrule, determine the required percentage of total overall test points to be corrected the following year based upon the following table:~~

~~—Percentage of total~~

~~—Overall average test overall test points points per meter (Pt) to be corrected~~

~~—.060 or less 2~~

~~—.061—.09 3~~

~~—.091—.12 4~~

~~—.121—.15 5~~

~~—.151—.18 6~~

~~—.181—.21 7~~

~~—.211—.24 8~~

~~—.241—.27 9~~

~~—.271—.30 10~~

~~—.301—.33 11~~

~~—.331—.35 12~~

~~—.351 or more 15~~

~~-(e) Multiply Pt by the applicable percentage of the points to be corrected as specified in subdivision (d) of this subrule to determine the total minimum test points to be corrected for the following year.~~

~~-(f) The sum of Pmc times the number of meters tested for each meter class for the following year shall meet or exceed the total minimum test points to be corrected as determined in subdivision (e) of this subrule. The mix of meters to be tested shall be at the utility’s discretion, if the requirements of subrules (5) and (6) of this rule are met.~~

~~-(g) With commission approval, a utility may modify the requirements set forth in subdivisions (b) to (f) of this subrule so as to make the required computations based not on the utility's test data from the prior year, but on the utility's test data from a calendar year 1 year earlier.~~

~~-(5) Except for the nonregistering meters, all meters that are removed from customers' premises shall be tested and shall form the basis of determining the total minimum test points to be corrected for the following calendar year in accordance with the provisions of subrule (4) of this rule. If a utility has knowledge that a particular class of meters is not maintaining satisfactory accuracy and cannot be repaired to maintain satisfactory accuracy, the class of meters shall be removed from service and retired.~~

~~-(6) Not less than 2% of the total meters that are originally set in each set year and not less than 2% of the total meters in service in each meter class shall be tested annually, except that a meter need not be removed for testing within the first 4 years after it is set.~~

~~-(7) Not later than March 1 of each year, utilities shall file a report of the meters that have been tested during the preceding calendar year. The report shall detail all of the following information:~~

~~-(a) All of the following meter characteristics:~~

~~-(i) Set year.~~

~~-(ii) Type of case.~~

~~-(iii) Manufacturer.~~

~~-(iv) Type of diaphragm.~~

~~-(v) Revenue classification, either commercial and industrial or residential.~~

~~-(b) The number of meters in each meter class tested and found within the norm and within each 1% variance from norm between 94% accuracy and 106% accuracy. Meters that are slower than 94% and faster than 106% shall each be grouped separately. For a utility that has more than 500,000 customers, the commission may approve a further 1% variance for meters that are slower than 94% and faster than 106%.~~

~~-(c) A comparison of the total test meters that were tested in the preceding year with the standard required pursuant to the provisions of subrule (4) of this rule.~~

~~-(d) Information and data that are needed to compute the total minimum test points to be corrected for the subsequent year in accordance with the provisions of subrule (4)(a) to (c) of this rule.~~

~~-(e) The identity of the meter classes to be used for the subsequent year, including an explanation for any meter class changes.~~

~~-(f) A separate section on meters that were retired during the preceding year that details the information identified in subdivision (a) of this subrule and the reasons for the retirement of the meters.~~

#### R 460.2353 Retirement of meters.

Rule 53. (1) Meters ~~shall~~**must** be retired from service whenever abnormal conditions affecting accuracy cannot be corrected for economic or other reasons. Examples of such conditions are basic defects due to manufacture, design, or excessive damage. Meters may also be retired due to obsolescence, unavailability of repair parts, or other reasons.

(2) **Notwithstanding the provisions of any other rule, meters that are found to be overregistering must be repaired or replaced within 6 months of the discovery of the error unless a different period is approved by the commission.**

R 460.2354 Accuracy of metering equipment; tests; standards.

Rule 54. (1) ~~The A~~ utility shall use the applicable provisions of the standards ~~listed~~**adopted by reference** in R 460.2342**44** as criteria of accepted practice in testing meters.

(2) Metering equipment ~~shall~~**must** be tested by comparison with the standards that are **adopted by reference** in R 460.2342**44**.

(3) A gas service meter that is repaired or removed from service for any cause ~~shall~~**must**, before installation, be tested and adjusted to be correct within 1% fast or 1% slow.

(4) Every diaphragm-type gas meter ~~shall~~**must** be tested before installation and adjusted, if required, to a meter accuracy of 100% plus or minus 1% at a low flow rate and at a high flow rate so that the numerical difference between the meter accuracy at these 2 flow rates is not more than 1 percentage point. A low flow rate is a flow at 20% to 50% of the rated capacity of the meter. A high flow rate is a flow at 80% to 120% of the rated capacity of the meter. The average meter accuracy of a diaphragm-type meter ~~shall~~**must** be defined as 1/2 the sum of the meter accuracy at the low flow test and at the high flow test.

(5) All recording-type meters or associated instruments that have a timing element that serves to record the time at which the measurement occurs for billing purposes ~~shall~~**must** be adjusted at intervals of not more than 2 years so that the timing element is not in error by more than plus or minus 4 minutes in 24 hours, under laboratory conditions, as set forth in ANSI B109.1-2019, “**Diaphragm Type – Gas Displacement Meters, Under 500 Cubic Feet per Hour Capacity**”, which is adopted by reference in R 460.2342(b)(ii)**44**, or by more than plus or minus 10 minutes in 24 hours under field conditions.

R 460.2355 Meter shop; design; meter testing system; standards; handling; calibration cards; calibrated orifices.

Rule 55. (1) A utility shall maintain or designate a meter shop within Michigan for the purpose of inspecting, testing, and repairing meters. The shop ~~shall~~**must** be open for inspection by authorized representatives of the commission at all reasonable times. A utility may ~~secure authority~~**obtain approval** from the commission to have its meters tested outside of Michigan upon showing, to the satisfaction of the commission, that the meter test facilities so utilized are in compliance with these rules. Records of test results ~~shall~~**must** be maintained in Michigan or the administrative headquarters of the utility.

(2) The area within the meter shop that is used for the testing of meters ~~shall~~**must** be designed so that the meters and meter-testing equipment are protected from drafts and excessive changes in temperature. The meters to be tested ~~shall~~**must** be stored in such a manner that the temperature of the meters is substantially the same as the temperature of the prover.

(3) A utility shall own and maintain, or have access to, a meter-testing system (working standard) of an approved type, subject to all of the following provisions:

(a) Means ~~shall~~**must** be provided to maintain the temperature of the liquid in a meter-testing system at substantially the same level as the ambient temperature in the prover area.

(b) The meter-testing system ~~shall~~**must** be maintained in good condition and in correct adjustment so that it ~~shall be~~**is** capable of determining the accuracy of any service meter to plus or minus 0.5%.

(c) A utility may use a properly calibrated test meter or transfer prover or may use a properly designed flow prover for testing meters.

(4) Meter-testing systems (working standards) ~~shall~~**must** be checked by comparison with a secondary standard. Both of the following provisions ~~shall~~**must** be complied with:

(a) At least once every 5 years, bell and flow provers ~~shall~~**must** be checked with a 1-cubic foot bottle or ~~shall~~**must** be calibrated by dimensional measurement or any other test that is approved by the commission. The accuracy of the secondary standard that is used ~~shall~~**must** be traceable to the ~~n~~National ~~i~~Institute of ~~s~~Standards and ~~t~~Technology.

(b) At least once every 10 years, rotary displacement transfer provers ~~shall~~**must** be checked with a standard that has its calibration traceable to the ~~n~~National ~~i~~Institute of ~~s~~Standards and ~~t~~Technology or ~~shall~~**must** be checked by any other suitable test that is approved by the commission.

(5) Extreme care ~~shall~~**must** be exercised in the use and handling of standards to ~~assure~~**ensure** that their accuracy is maintained.

(6) Each standard ~~shall~~**must** have a certificate or calibration card which ~~shall~~**must** be duly signed and dated and which ~~shall~~**must** record the corrections that were required to compensate for errors found on the last test.

(7) A utility shall have properly calibrated orifices to achieve the rates of flow required to test the meters on its system.

## PART 6. BILL ADJUSTMENT; METER ACCURACY

R 460.2361 ~~Bill adjustment; meter accuracy~~**Rescinded.**

~~Rule 61. If a meter is found to be nonregistering or to have an average meter accuracy less than 98% or greater than 102%, an adjustment of bills for the inaccuracy may be made in the case of nonregistration or underregistration and shall be made in the case of overregistration. The adjustment shall be calculated on the basis that the meter is 100% accurate with respect to the testing equipment that is used to make the test.~~

R 460.2362 Determination of adjustment.

Rule 62. (1) If the date that the period of inaccurate meter registration began can be determined, that date ~~shall~~**must** be the starting point for calculating an adjustment pursuant to the provisions of R 460.2361**115**.

(2) If the date that the period of inaccurate meter registration began cannot be determined, it ~~shall~~**must** be assumed that the inaccuracy existed for a period equal to 1/2 of the time elapsed since the meter was last installed ~~on the present premises~~**or tested**.

(3) The adjustment ~~shall~~**must** be made on the basis of actual monthly consumption, if possible. Otherwise, the average monthly consumption that is determined from the most recent 36 months' consumption data ~~shall~~**must** be used.

R 460.2363 Refunds.

Rule 63. ~~(1) Refunds shall be made to the 2 most recent customers who received service through the meter found to be registering inaccurately. If the utility has not adopted the requirements of R 460.2352, the period that is used for determining the amount to be refunded shall not be more than 12 months. If the utility has adopted the requirements of R 460.2352, the period that is used for determining the amount to be refunded shall be the period of inaccurate meter registration that is determined pursuant to the provisions of R 460.2362(1) to (2).~~ In the case of a previous customer who is no longer a customer of the

utility, a notice of the amount of the refund shall be mailed to his or her last known address and the utility shall, upon demand made within 3 months, refund the amount.

~~—(2) If the amount of the refund due an existing or previous customer as the result of meter overregistration is equal to, or more than, an average of 10 cents per month for the period that is used for determining the amount to be refunded, the full amount of the refund shall be made, except that a refund that is less than \$1.00 need not be made to an existing customer and a refund that is less than \$2.00 need not be made to a previous customer who is no longer a customer of the utility.~~

#### R 460.2364 ~~Rebilling~~**Rescinded.**

~~Rule 64. If the amount due the utility as the result of meter nonregistration or underregistration is equal to, or more than, amounts set forth in R 460.2363(2) as minimum refunds, the utility may bill the customer for the amount due, but the period covered by the billing shall not be more than 12 months unless otherwise ordered by the commission. The utility shall offer the customer reasonable payment arrangements for the amount of the billing, taking into account the period covered by the billing. A rebilling policy that is adopted by a utility based on minimum amounts that are more than those set forth in R 460.2363(2) shall be uniformly applied to all customers.~~

### PART 7. SHUTOFF OF SERVICE

R 460.2371 Conditions for establishing gas service; liability; notice and record of inability to establish service; refusal of service to customer using other gaseous fuel; exception; **service quality.**

Rule 71. (1) A utility shall ~~not~~ establish gas service to a customer's premises ~~until the utility has done both of the following:~~**in compliance with the Michigan gas safety standards.**

~~(a) Performed a leakage test using gas at utilization pressure to ensure that the customer's fuel line is gastight.~~

~~(b) Made a determination that the gas odor is detectable.~~

(2) ~~This test shall not be construed to make the~~**The utility shall not be** liable for the installation, maintenance, or use of piping or ~~appliances~~**gas utilization equipment** that ~~are~~**is** owned by the customer, nor ~~shall the utility~~ be held liable for any continuing duty of inspection of piping or ~~appliances~~**equipment.**

(3) If the condition of the customer's fuel line is such that service cannot be established, the utility shall notify the customer, in writing, of the reason or reasons that service was not established.

(4) A record ~~shall~~**must** be kept by the utility of all cases where refusal to establish service is made. The record ~~shall~~**must** provide all of the following information:

(a) The name of the customer.

(b) The address or location of the premises.

(c) The date of the test.

(d) The name of the service person.

(e) All changes or rearrangements recommended.

(5) Except in certain commercial and industrial applications that require a standby fuel that is authorized by the utility, the utility shall have the authority to refuse gas service to a



customer that uses another gaseous fuel, such as liquefied petroleum gas, in the same building.

**(6) A utility shall have a meter reading factor of 85% or more for meters requiring billing reads within the meter reading period pursuant to the approved tariff, including customer reads.**

**(7) If there is an existing main at a requesting address, a utility shall complete 90% or more of its new service installations within 15 business days of customer payment per tariff requirements and site readiness, or by a later date that is mutually agreed upon between the utility and customer.**

R 460.2373 Shutoff of service.

Rule 73. Under any of the following conditions, gas service may be shut off by the utility:

(a) A hazardous condition exists. In this instance, gas service may be shut off without prior notification.

(b) A potentially hazardous condition exists. In this instance, gas service may be shut off ~~upon implementing the customer notification procedures set forth in R 460.2071 et seq. and R 460.2101 et seq. of the Michigan Administrative Code and in the utility's rate book~~ **after providing the customer with written notice of shutoff by first class mail at least 10 days before the shutoff is scheduled to occur.**

(c) Refusal of required access. In this instance, gas service may be shut off ~~upon implementing the customer notification procedures set forth in R 460.2071 et seq. and R 460.2101 et seq. of the Michigan Administrative Code and in the utility's rate book~~ **after providing the customer with written notice of the shutoff by first class mail at least 10 days before the shutoff is scheduled to occur.**

R 460.2374 ~~Customer notification of shutoff of service~~ **Rescinded.**

~~Rule 74. A utility shall include, in its rate book, notification procedures to be utilized in dealing with potentially hazardous conditions and refusal of required access conditions.~~

## PART 8. GAS QUALITY

R 460.2381 Gas purity.

Rule 81. (1) Gas that is distributed by a utility to a customer ~~shall~~ **must** not contain more than 0.3 grains of hydrogen sulfide or more than 20 grains of total sulfur per 100 cubic feet, including the sulfur in any hydrogen sulfide.

(2) Gas that is distributed by a utility to a customer ~~shall~~ **must** not contain flammable liquids in quantities that interfere with the normal operation of the customer's equipment.

**(3) Gas that is distributed by a utility to a customer must not contain more than 2% carbon dioxide or 5 parts per million oxygen.**

**(4) Gas that is distributed by a utility to a customer must not contain water in excess of 7 pounds per million cubic feet.**

R 460.2382 Heating value; authorized variations.

Rule 82. (1) The heating value of substitute natural gas and mixed gas ~~shall~~ **must** be considered as being under the control of the utility. The average heating value on 1 day ~~shall~~ **must** not be more than or less than the standard total heating value range set forth in the

utility's rules. A utility shall not add air to a gas stream if this results in a heating value that is below 1,000 British thermal units per standard cubic foot.

(2) The average monthly heating value of gas that is supplied by a utility shall be 1,025 British thermal units per standard cubic foot, plus or minus 75 British thermal units. A greater variation may be ~~authorized~~**approved** by the commission upon a showing by the utility that the variation will not adversely affect the efficient and satisfactory operation of its customers' ~~appliances~~**gas utilization equipment**.

R 460.2383 Heating value records; location and accuracy of measuring equipment; frequency of heating value determination.

Rule 83. (1) A utility shall maintain records of the heating value of ~~the~~ gas it distributes. Heating value test records ~~shall~~**must** be preserved for ~~not less than~~**a minimum of 6 years**. A utility shall utilize either the industry standards that are adopted by reference in R 460.23424(d) or other standards that are approved by the commission for heating value determination methods.

(2) Heating value measuring equipment ~~shall~~**must** be installed in suitably located testing stations.

(3) The accuracy of all heating value measuring equipment and the method of making heating value tests ~~shall~~**must** meet the industry standards that are adopted by reference in R 460.23424(d) or ~~shall~~**must** otherwise be approved by the commission. Recording equipment ~~shall~~**must** be tested ~~not less than~~**, at a minimum,** annually.

(4) The utility shall determine the heating value of substitute natural gas and mixed gas ~~not less than~~**at a minimum of** twice a day and shall make the tests during the periods of the a.m. and p.m. peak demands.

(5) The utility shall determine the heating value of gas at least once a month. A utility that sells gas subject to a thermal adjustment shall determine the heating value at least once a day.


# PROOF OF SERVICE

STATE OF MICHIGAN )

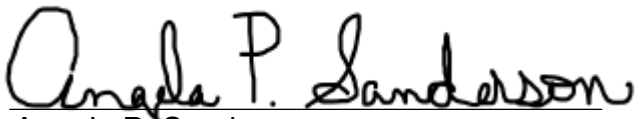
Case No. U-20608

County of Ingham )

Brianna Brown being duly sworn, deposes and says that on January 23, 2020 A.D. she electronically notified the attached list of this **Commission Order via e-mail transmission**, to the persons as shown on the attached service list (Listserv Distribution List).

  
Brianna Brown

Subscribed and sworn to before me  
this 23<sup>rd</sup> day of January 2020.



Angela P. Sanderson  
Notary Public, Shiawassee County, Michigan  
As acting in Eaton County  
My Commission Expires: May 21, 2024

**Service List for Case: U-20608**

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