

DEPARTMENT OF CONSUMER AND INDUSTRY SERVICES

PUBLIC SERVICE COMMISSION

TECHNICAL STANDARDS FOR GAS SERVICE

(By authority conferred on the public service commission by section 6 of Act No. 3 of the Public Acts of 1939, as amended, and section 2 of Act No. 165 of the Public Acts of 1969, being SS460.6 and 483.152 of the Michigan Compiled Laws)

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.
- (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 the following:
 - (i) For billing purposes, a standard cubic foot of gas is that quantity of dry gas which, 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, 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 or business, excluding other gas utilities, that purchases gas or transportation services, or both, on the utility's system.
- (f) "Hazardous condition" means any condition which the utility determines poses an immediate and serious threat to the health, safety, or welfare of a customer or the general public and which 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 of a utility that is used in measuring a quantity of gas.
 - (i) "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.
- (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 land or real estate, including buildings and other appurtenances thereon.
- (l) "Potentially hazardous condition" means any condition which the utility determines has the potential to become a hazardous condition, but which does not require immediate action. All of the following are examples of potentially hazardous conditions:
 - (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 460.14001 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.

(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 is interchangeable and compatible with natural gas and which is manufactured from carbon and hydrogen-bearing materials.

(p) "Utility" means a person, firm, corporation, cooperative, association, or agency which is subject to the jurisdiction of the commission and which delivers or distributes and sells gas to the public for heating, power, or other residential, commercial, or industrial purposes.

History: 1979 AC; 1993 AACS.

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

Rule 2. (1) These rules apply to a gas utility which operates within the state of Michigan and which 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 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 constitute an integral part of the utility's rate book.

History: 1979 AC; 1993 AACS.

R 460.2303 Rescission.

Rule 3. R 460.891 to R 460.914, R 460.916, R 460.919, R 460.920, R 460.926, and R 460.927 of the Michigan Administrative Code, appearing on pages 6094 to 6102, and 6104 of the 1954 volume of the Code, and pages 1070 and 1071 of the 1958 Annual Supplement to the Code, are rescinded.

History: 1979 AC.

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 be preserved by the utility for a period of time specified in R 460.2501 et seq. of the Michigan Administrative Code. If a time period is not specified in these rules or in R 460.2501 et seq., records shall be preserved by the utility for not less than 1 year after the records are completed.

History: 1979 AC; 1993 AACS.

R 460.2322 Location of records.

Rule 22. Copies of all records required by these rules shall be kept within the boundaries of this state or at the administrative headquarters of the utility, and shall be available at all reasonable times for examination by an authorized representative of the commission.

History: 1979 AC.

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 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 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.

History: 1979 AC; 1993 AACS.

PART 3. SERVICE REQUIREMENTS

R 460.2331 Sale of gas.

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

(2) The utility shall provide the characteristics 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, all meters which are to operate at ambient outdoor conditions and which are installed after the effective date of this subrule shall be installed 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 be assumed to be supplied and metered at 0.25 pounds per square inch gauge. The low-pressure system shall be operated so that the gauge pressure at the outlet of the meter shall 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 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 be corrected to standard billing conditions as defined in R 460.2301(d)(i).

(b) Gas volume corrections for temperature shall be made in accordance with Charles' law. Gas volume corrections for pressure shall be made in accordance with Boyle's law. Gas volume corrections for supercompressibility shall be made in accordance with either of the following publications of the American gas association (AGA), both of which are adopted by reference in 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," (1962) (A.G.A. Catalog No. L00340). . \$35.00.

(ii) "Compressibility and Supercompressibility for Natural Gas and Other Hydrocarbon Gases, Transmission Measurement Committee Report No. 8," (1992) (A.G.A. Catalog No. \$80.00 (\$40.00 for AGA members).

(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 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 be calibrated using the actual atmospheric pressure or a reasonable estimate thereof.

History: 1979 AC; 1993 AACS.

R 460.2332 Permanent service line rules.

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

History: 1979 AC; 1993 AACS.

R 460.2333 Main extension rules.

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

History: 1979 AC; 1993 AACS.

R 460.2334 Temporary service.

Rule 34. If a utility renders temporary service to a customer for a period not exceeding 2 years or for the duration of a particular construction project using such temporary service, in addition to the charges for gas used during such service, the utility may require the customer to bear all of the cost of installing, removing, and providing equipment of facilities for such temporary service, less the salvage value of any equipment or facilities retained by the utility at the conclusion of the temporary service.

History: 1979 AC.

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 pursuant to the provisions of R 460.2371 to R 460.2374.

(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 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 on its entire system or in major divisions or operating districts thereof. The records shall 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, and shall periodically make an analysis of the records for the purpose of determining steps to be taken to prevent the recurrence of such interruptions.

History: 1979 AC; 1993 AACS.

PART 4. ENGINEERING

R 460.2341 Gas facilities; construction and installation.

Rule 41. Gas facilities of a utility shall be constructed and installed in accordance with accepted engineering practices in the gas industry to ensure, to the extent reasonably practicable, continuity of service, uniformity in the quality of service provided, and the safety of persons and property.

History: 1979 AC.

R 460.2342 Standards of accepted engineering practice.

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 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).

(ii) "NFPA Standard 59, Storage and Handling of Liquefied Petroleum Gases at Utility Gas Plants," (1992) \$18.75 (\$17.00 for NFPA members).

(iii) "NFPA Standard 59A, Production, Storage and Handling of Liquefied Natural Gas (LNG)," (1990) \$18.75 (\$17.00 for NFPA members).

(d) The following American society for testing and materials (ASTM) 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 ASTM, 1916 Race Street, Philadelphia, Pennsylvania 19103-1187, (215) 299-5585, or from the Michigan Public Service Commission, 6545 Mercantile Way, P.O. Box 30221, Lansing, MI 48909:

(i) ASTM specification D-1826 "Calorific Value of Gases in Natural Gas Range by Continuous Recording Calorimeter," (D1826-88) \$15.00.

(ii) ASTM specification D-1945 "Method for Analysis of Natural Gas by Gas Chromatography," (D1945-91) \$18.00.

(iii) ASTM specification D-3588 "Method for Calculating Calorific Value and Specific Gravity (Relative Density of Gaseous Fuels)," (D3588-91) \$15.00. Many of ASTM's publications are now stored at University Microfilm International, 300 N. Zeeb Road, Ann Arbor, Michigan 48106, (313) 761-4700.

(e) General rules of the construction code commission, which may be ordered from the Construction Code Commission, Michigan Department of Labor, State Secondary Complex, 7150 Harris Drive, Lansing, MI 48926, (517) 322-1701.

History: 1979 AC; 1993 AACS.

R 460.2343 Rescinded.

History: 1979 AC; 1993 AACS.

PART 5. INSPECTION OF METERS

R 460.2351 Meters and associated metering devices; inspections and tests.

Rule 51. Inspections and tests of meters and associated metering devices shall 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 be inspected and tested before being placed in service, and the error shall 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 be tested after it is removed from service. Such tests shall 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 be leak-tested before being returned to service, subject to the following requirements:

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

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

(A) An internal pressure test of 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 the commission.

(iii) During the pressure test, the meter shall 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 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 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 be made to the customer by the utility. The report shall state the results of the test. A record of the test shall 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 be conducted according to the following schedule, unless otherwise authorized by the commission:

(i) Positive displacement diaphragm-type meters that have capacities of 500 cubic feet per hour and under 10 years.

(ii) Positive displacement diaphragm-type meters that have capacities over 500 cubic feet per hour 7 years.

(iii) Other meter types, such as proportional, rotary, and turbine, may be tested in place when possible 2 years.

(iv) Orifice meters 6 months.

(v) Gas instruments, such as base volume, base pressure, and base temperature-correcting devices, shall 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.

(vi) Test bottles, 1 cubic foot 10 years.

(vii) Deadweight testers 10 years.

(viii) Certified test meters 10 years.

(ix) Meter testing systems shall be calibrated when first installed and after alterations, damages, or repairs that might affect accuracy. To assure that the accuracy of a meter testing system is maintained on a

continuous basis, a daily leakage test shall be made and a weekly accuracy test with a comparison meter of known accuracy shall 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 be determined and necessary corrections shall be made before the system is reused. The comparison meter shall be checked at an interval of 1 month.

History: 1979 AC; 1993 AACS.

R 460.2352 Diaphragm-type meters; meter tests; reports.

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 (e) 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.

History: 1979 AC; 1984 AACS; 1993 AACS.

R 460.2353 Retirement of meters.

Rule 53. Meters shall 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.

History: 1979 AC.

R 460.2354 Accuracy of metering equipment; tests; standards.

Rule 54. (1) The utility shall use the applicable provisions of the standards listed in R 460.2342 as criteria of accepted practice in testing meters.

(2) Metering equipment shall be tested by comparison with the standards that are referenced in R 460.2342.

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

(4) Every diaphragm-type gas meter shall 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 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 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 (which is adopted by reference in R 460.2342(b)(ii)), or by more than plus or minus 10 minutes in 24 hours under field conditions.

History: 1979 AC; 1993 AACS.

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 be open for inspection by authorized representatives of the commission at all reasonable times. A utility may secure authority 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 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 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 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 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 be maintained in good condition and in correct adjustment so that it shall be 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 be checked by comparison with a secondary standard. Both of the following provisions shall be complied with:

(a) At least once every 5 years, bell and flow provers shall be checked with a 1-cubic foot bottle or shall 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 be traceable to the national institute of standards and technology.

(b) At least once every 10 years, rotary displacement transfer provers shall be checked with a standard that has its calibration traceable to the national institute of standards and technology or shall be checked by any other suitable test that is approved by the commission.

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

(6) Each standard shall have a certificate or calibration card which shall be duly signed and dated and which shall 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.

History: 1979 AC; 1993 AACS.

R 460.2356 Pressure measurement standards.

Rule 56. (1) For its working pressure measurement standards, a utility shall have manometers, laboratory-quality indicating pressure gauges, field-type deadweight pressure gauges, or any other instruments that have an accuracy error of not more than 1/2 of 1% of full scale, which shall be used to test the indicating and recording pressure gauges that are used in determining the pressure on the utility's system.

(2) For its secondary pressure measurement standards, a utility shall own, or have access to, a pressure-testing instrument that has an accuracy error of not more than 1/10 of 1% of full scale, which shall be used to verify the accuracy of its working pressure measurement standards. An instrument that is used as a secondary pressure measurement standard shall be maintained in an accurate condition.

History: 1979 AC; 1993 AACS.

R 460.2357 Records; meter tests.

Rule 57. (1) A utility shall maintain records of the last 2 tests made on any meter. The record of the meter test made at the time of the meter's retirement shall be maintained for a minimum of 3 years.

(2) Test records shall include the following information:

(a) The date and reason for the test.

(b) The index reading of the meter at the time of removal from the customer's premises.

(c) The meter accuracy "as found."

(3) If the test of the meter is made by using a test meter, transfer prover, or flow prover, the utility shall retain, as test records, all data taken at the time of the test in complete form to permit the checking of the test methods and the calculations.

History: 1979 AC; 1993 AACS.

R 460.2358 Records; meter and associated metering device data.

Rule 58. A utility shall maintain records of the following data, where applicable, for each meter or associated metering device, or both, until retirement:

(a) Descriptive data, manufacturer, identification number, type, capacity, multiplier, and constants.

(b) The dates of installation and removal from service, together with the location of current and previous installation.

History: 1979 AC.

PART 6. BILL ADJUSTMENT; METER ACCURACY

R 460.2361 Bill adjustment; meter accuracy.

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.

History: 1979 AC; 1993 AACS.

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 be the starting point for calculating an adjustment pursuant to the provisions of R 460.2361.

(2) If the date that the period of inaccurate meter registration began cannot be determined, it shall 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.

(3) The adjustment shall 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 be used.

History: 1979 AC; 1993 AACS.

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.

History: 1979 AC; 1993 AACS.

R 460.2364 Rebilling.

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.

History: 1979 AC; 1993 AACS.

R 460.2365 Consumption data records.

Rule 65. Records of all consumption data and other data necessary for the administration of adjustment of bills shall be maintained for a minimum period of 36 months.

History: 1979 AC.

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.

Rule 71. (1) A utility shall not establish gas service to a customer's premises until the utility has done both of the following:

(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 utility liable for the installation, maintenance, or use of piping or appliances that are owned by the customer, nor shall the utility be held liable for any continuing duty of inspection of piping or appliances.

(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 be kept by the utility of all cases where refusal to establish service is made. The record shall 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.

History: 1979 AC; 1993 AACS.

R 460.2372 Gas facilities hazard.

Rule 72. When a utility acquires knowledge that a customer's action has caused a hazardous condition to exist with respect to a gas facility, the utility shall initiate the following action depending on the facility that is involved:

(a) For a utility's facilities, the utility shall correct the condition at the expense of the customer or shut off service to the customer.

(b) For a customer's facilities, the utility shall correct the condition at the expense of the customer, if such action is authorized by the utility's service policy and if the customer consents. Otherwise, the utility shall shut off service to the customer until the condition has been corrected.

History: 1979 AC; 1993 AACS.

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.

(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.

History: 1979 AC; 1993 AACS.

R 460.2374 Customer notification of shutoff of service.

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.

History: 1993 AACS.

PART 8. GAS QUALITY

R 460.2381 Gas purity.

Rule 81. (1) Gas that is distributed by a utility to a customer shall 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 not contain flammable liquids in quantities that interfere with the normal operation of the customer's equipment.

History: 1979 AC; 1993 AACS.

R 460.2382 Heating value; authorized variations.

Rule 82. (1) The heating value of substitute natural gas and mixed gas shall be considered as being under the control of the utility. The average heating value on 1 day shall 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 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.

History: 1979 AC; 1993 AACS.

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 gas it distributes. Heating value test records shall be preserved for not less than 6 years. A utility shall utilize either the industry standards that are adopted by reference in R 460.2342(d) or other standards that are approved by the commission for heating value determination methods.

(2) Heating value measuring equipment shall 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 meet the industry standards that are adopted by reference in R 460.2342(d) or shall otherwise be approved by the commission. Recording equipment shall be tested not less than annually.

(4) The utility shall determine the heating value of substitute natural gas and mixed gas not less than 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.

History: 1979 AC; 1993 AACS.

R 460.2384 Rescinded.

History: 1979 AC; 1993 AACS.