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§ 226.1 General provisions

This Part contains the requirements for testing and maintaining the accuracy of gas meters and related devices used either for customer billing applications or to measure gas that affects a utility revenue stream required to be reported to the Commission.

§ 226.2 Definitions

The following definitions shall apply wherever the defined terms are used in Parts 226, 227, and 228 of this Title:

(a) Accessory. Any meter reading device, which is mechanically attached to a meter and could affect its accuracy, used to display or transmit meter information to a remote location or any associated meter correction device, either remote or attached, used to adjust the reading of a meter index.

(b) Bell prover. A test-standard using a calibrated cylindrical container or bell in which a quantity of air is collected using oil as a sealing medium. The bell prover is connected to a meter under test and the quantity of air that passes through the meter, as measured by the meter, is compared with the change in the quantity of air within the bell to determine the meter's accuracy.

(c) Certification. The verification of a test-standard's accuracy by this commission, by its designee, or by commission approved procedures, conducted with standards or equipment that trace their accuracy to the National Institute of Standards and Technology.

(d) Correction device. An accessory used to adjust the measured volume to a volume at standard conditions.

(e) Cubic foot bottle. A specially constructed and calibrated bottle that can measure exactly one cubic foot of air. The calibration of the bottle is certified by the National Institute of Standards and Technology.

(f) (1) Cubic foot, metered. The quantity of gas that occupies one cubic foot when under pressure and temperature conditions existing in the meter.

(2) Cubic foot, standard. The quantity of gas that under a pressure of 14.73 pounds per square inch absolute and at a temperature of 60 degrees F occupies a volume of one cubic foot.

(g) Differential test. A comparison of the difference in pressure readings between the inlet and outlet of a rotary meter at a gas flow rate within the meter's rated capacity range, with those supplied by the manufacturer or taken at installation.

(h) Fixed pressure factor measurement. A correction method system, used only in conjunction with pressure regulated installations, that employs a billing multiplier to adjust the measured volume of gas delivered to standard pressure conditions.

(i) Flow rate tests.

(1) Check-rate test. A meter test conducted with a flow rate at the lower end of the meter's rated capacity range.

(2) Open-rate test. A meter test conducted with a flow rate at the higher end of the meter's rated capacity range.

(j) Gas meter. Any device used to measure the units of gas passing through it.

(1) Domestic meter. A gas meter with a rated capacity of 500 CFH or less.

(2) Large volume meter. A gas meter with a rated capacity over 500 CFH.

(k) Meter accuracy. The degree to which a meter correctly measures the units of gas passing through it, determined by comparing the registration on the meter with that registered by a test-standard.

(1) Percent proof. The volume indicated by the test-standard divided by the volume indicated by the meter x 100.

(2) Percent accuracy. The volume indicated by the meter divided by the volume indicated by the test-standard x 100.

(l) Meter class. A designation for different ranges of meter rated capacities.

(m) Meter index. The meter mechanism that displays the quantity of gas that has been delivered through the meter.

(n) Meter tests.

(1) In-test. A test of a meter made soon after its removal from a customer's premises or at said premises and prior to any disassembly or adjustment.

(2) Out-test. A test of a meter made prior to its use at a customer's premises.

(o) Non-working reference standard. A certified reference meter or other device used to check the accuracy of a test-standard.

(p) Prover. A type of test-standard for measuring the accuracy of gas meters.

(q) Rangeability. The manufacturer's stated ratio of maximum flow rate to minimum flow rate for a given meter.

(r) Rated capacity.

(1) Diaphragm type meters. The rated capacity of a diaphragm type gas meter is the approximate number of cubic feet per hour of 0.60 specific gravity gas (air = 1.00), at standard conditions, that the meter is designed to pass when the average differential pressure between the inlet and outlet of the meter is 0.5 inch of water column.

(2) Other types of meters. The rated capacity of other types of gas meters will be the nameplate capacity specified for that particular type of meter or as otherwise specified in the commission's order approving it.

(s) Sampling. A statistically valid method of obtaining a representative quantity of meters from a homogenous lot or group.

(t) Sonic nozzle prover. A test-standard for testing gas meters using nozzles calibrated to indicate the time required for the passage of one cubic foot of air at their corresponding sonic flow rates. The sonic nozzle prover is connected to the meter under test. The time necessary to pass a given number of cubic feet on the meter is compared with the time indicated on the nozzle.

(u) Supercompressibility. Deviation of a gas from the ideal gas laws.

(v) Standard conditions. The standard base conditions of pressure and temperature to which natural gas volumes are referenced.

(w) Strapping. A method of checking a bell prover by determining the relations between displaced volume and linear movement of a bell prover by means of measuring scale length, bell circumference, and displacement. The calibration of all measuring equipment used to take these measurements must be traceable to the National Institute of Standards and Technology.

(x) Test-standard. Any certified device used for determining the accuracy of a meter or accessory.

(y) Transfer prover. A test-standard for testing gas meters consisting of a master meter, an electronic control panel, pressure and temperature correcting gauges, a blower, flow control valves, and exhaust silencers. The test is conducted by connecting the transfer prover with the meter under test. The quantity of air indicated on the meter under test is compared with the quantity of air measured on the transfer prover.

(z) Utility. Includes all gas corporations as defined in the Public Service Law.

Gas meters and accessories shall conform to the following:

(a) Approved type. Meters and accessories shall be of types approved by this commission in accordance with Part 227 of this Title.

(b) Meter identification. Each meter purchased after August 19, 1995 shall bear the following information in a permanent form on the meter before installation:

Name of utility or logo

Manufacturer's name or trademark

Meter serial number

Type designation/Model Number

Meter class and/or rated capacity

Year of manufacture

Indication if remanufactured

Maximum allowable operating pressure (MAOP) If a gas meter is temperature compensating, a durable red indicator shall be visible on the meter stating that the meter is "temperature compensating".

(c) Correction device identification. Each meter correction device purchased after August 19, 1995 shall bear the following information in a durable form: Name of utility or logo (if correction device remotely located from meter)

Manufacturer's name or trademark

Equipment serial number

Type Designation/Model Number

Year of Manufacture

(d) Labeling. Each gas meter found to conform to this commission's requirements shall have affixed to it a label or tag indicating the year of its most recent out-test. Each meter which has been repaired shall have the type of repair indicated. This repair identification may be indicated on the label or with other adequate marking.

(e) In lieu of the requirements in subdivisions (b) and (d) above, indication of remanufacture and type of repair need not be labeled on the meter if such is maintained by the utility in readily available computerized meter history records.

(f) Tampering devices. Each gas meter placed in service after August 19, 1995, to the extent possible, shall have devices or incorporate processes to indicate evidence of tampering.

§ 226.4 Testing facilities -- general

(a) Minimum facilities. Each utility shall have meter testing facilities that are adequately maintained, are provided with suitable equipment and kept in proper condition for testing gas meters and auxiliary devices, and include at least one bell prover with a capacity not under five cubic feet.

(b) Notification. Each utility shall keep the Department staff informed of the location of each test facility where its meters and accessories are tested, any change in the facility which may affect the accuracy of its testing, and the number, type, and the most recent certification date of each test-standard at that location.

(c) Temperature. Each meter test location shall be maintained to minimize temperature fluctuations and assure temperature equilibrium between the room air, the testing equipment including the prover(s), the sealing medium in each bell prover and the air or other testing medium supplied to each bell prover and the meters under test. Any temperature variation shall be limited to 1 degrees F or less between the items listed above.

(d) Temperature test conditions for testing temperature compensating gas meters:

(1) Ambient temperature. The ambient temperature test condition is the existing temperature that the gas meter is exposed to at the time of a meter test. With utility shop testing, the ambient temperature is the normal proving room temperature.

(2) Average winter temperature. The average winter temperature test is an approved gas meter test condition that represents the average temperature environment that an outdoor gas meter is expected to be exposed to during the winter. This temperature is specified as 20 degrees F for all utilities.

(3) Extreme temperature. The extreme temperature test condition for winter and summer are specified gas meter test conditions of 0 degrees F and 100 degrees F, respectively.

(e) Tests and inspections. All meter testing facilities shall be available for inspection, certification and reasonable use by the department staff.

§ 226.5 Test-standards

(a) All meter test-standards shall be of types approved by this commission in accordance with Part 227 of this Title or, if not required to be approved in accordance with Part 227, whose accuracy is traceable to the National Institute of Standards and Technology. Certification will be conducted by this commission, by its designee, or by commission approved procedures conducted with standards or equipment that trace their accuracy to the National Institute of Standards and Technology.

(b) Test-standard certification frequency.

(1) Bell provers shall be certified initially and at least once every two years.

(2) Transfer provers shall be certified initially and at least once every two years. This certification requirement may be extended to once every five years provided that an annual comparison test between the transfer prover meter and a non-working reference standard agree to within +/- 0.25 percent proof at no less than 16 points between 10 and 120 percent of the rated capacity of the transfer prover.

(3) Sonic nozzle provers shall be certified initially and at least once every two years. This certification requirement may be extended to once every five years provided that an annual comparison test between the sonic nozzle prover and a non-working reference standard agree to within +/- 0.25 percent proof of the most recently certified sonic nozzle calibration proof.

(4) A non-working reference standard meter shall be certified initially and at least once every five years. Its accuracy should be established at no less than 16 points between 10 and 120 percent of its rated capacity.

(5) Temperature and pressure test-standards shall be certified initially and at least once every five years.

(6) Auxiliary equipment. Any type of auxiliary equipment connected to a test-standard shall be installed and tested in accordance with manufacturers' instructions or in a manner acceptable to the commission or its designee.

(c) Additional meter test-standard requirements.

(1) The capacity of the meter test-standard shall meet the open rate test requirements of the meter being tested.

(2) Each certified meter test-standard shall be provided with a certificate bearing the serial number, date of certification, correction factor(s) and test limitations, if any.

(3) Each meter test-standard shall be recertified after being damaged, repaired, adjusted or disassembled where such could in any way affect its previous accuracy calibration. Also, each bell prover shall be recertified if moved.

(4) Only meter test-standards with an error of less than +/- 0.25 percent shall be used without applying a correction factor.

(5) Each bell prover shall be adjusted to a static pressure in the order of 1.5 inches of water column above or below atmospheric pressure.

(6) Each transfer prover or sonic nozzle test-standard shall be adjusted to the same pressure and temperature or corrected for any pressure and temperature difference between it and the meter under test.

(7) Each meter test-standard shall be tested for connection-fitting tightness prior to its use.

(8) A nonvolatile sealing medium meeting the applicable specifications of the American National Standards Institute (ANSI) standard set forth in section 227(c) of this Title shall be used in all bell provers.

§ 226.6 Gas meters and accessories - test flow rates, out-test accuracy standards and test requirements

Gas meters and related accessories utilized by a utility shall conform to the following out-test accuracy standards and test requirements at the specified flow rates. Only meters determined to be free of leaks and found upon test to comply with the following, where the test results are expressed to the nearest 0.1 percent proof, shall be labelled as out-tested and placed in service at a customer's premises:

(a) Test flow rates.

(1) The check rate test for diaphragm, rotary and turbine meters is conducted at a flow rate not less than 10 percent nor more than 40 percent of rated capacity.

(2) The open rate test is conducted at a flow rate as follows:

(i) Diaphragm meters - not less than 80 percent nor more than 120 percent of rated capacity.

(ii) Rotary and turbine meters - not less than 60 nor more than 100 percent of the rated capacity.

(b) Out-test accuracy standards.

(1) Non-temperature compensating diaphragm, rotary and turbine gas meters. At the check and open rates, the percent proof shall be not less than 99.0 percent nor more than 101.0 percent. For diaphragm meters the open rate test result shall not differ from the check rate result by more than one percent.

(2) Temperature compensating diaphragm, rotary and turbine gas meters.

(i) Ambient temperature test. At the check and open rates, the percent proof shall be not less than 99.0 percent nor more than 101.0 percent. For diaphragm meters the open rate test result shall not differ from the check rate result by more than one percent.

(ii) Average winter temperature test. At the check and open rates, the percent proof shall be not less than 99.0 percent nor more than 102.0 percent. For diaphragm meters the open rate test result shall not differ from the check rate result by more than one percent.

(3) Orifice meters. The overall cumulative error of the metering system shall be not greater than +/- 1 percent throughout its operating range.

(4) Meters with correction devices. The percent proof, at test conditions, shall be not less than 99.0 percent nor more than 101.0 percent.

(c) Out-test requirements.

(1) Non-temperature compensating gas meters.

(i) Each non-temperature compensating meter shall be out-tested prior to its installation.

(ii) In lieu of the test requirements in subparagraph (i) of this paragraph, new non-temperature compensating meters may be out-tested on an approved sampling basis by the utility if the manufacturer's test equipment has been certified in accordance with section 226.5 of this Part and the manufacturer has certified that each meter has been tested prior to delivery.

(2) Temperature compensating gas meters.

(i) Each temperature compensating meter shall be out-tested at both the ambient and average winter temperature test conditions.

(ii) In lieu-of the test requirements in subparagraph (i) of this paragraph, new temperature compensating meters may be out-tested on an approved sampling basis at the ambient and average winter temperature conditions by the utility, if the manufacturer's test equipment has been certified in accordance with section 226.5 of this Part and the manufacturer has certified that each meter has been tested prior to delivery.

(iii) In lieu of the test requirements in subparagraph (i) of this paragraph, temperature compensating meters being returned to service after maintenance shall be out-tested at ambient temperature conditions provided that a commission approved sample of such meters is also tested at the average winter temperature conditions.

(3) Correction devices.

(i) Each correction device shall be tested and calibrated prior to installation at various pressures and/or temperature conditions representative of the device's range(s) (including the conditions expected to prevail at the sites where it may be placed in service), or upon installation at the pressure and temperature conditions at the site.

(ii) After being placed in service, the correction device shall be either monitored through a review of meter reading records at least once every six months to determine proper operation or be tested at least once every two years as set forth in subparagraph (i) of this paragraph.

§ 226.7 Gas meters - customer installations

(a) Pressure and temperature corrections. At each meter location where the metered volume of gas is corrected to standard conditions, the correction shall be made by use of an appropriate approved type meter and/or correction device. For this purpose, standard conditions shall be 14.73 pounds per square inch absolute and 60 degrees Fahrenheit. All meter installations measuring at delivery pressures in excess of 30 pounds per square inch gauge shall have their measurement recordings corrected for supercompressibility or assure the same accuracy as specified for meters with correction devices in section 226.6(b) (4).

(b) Installation of temperature correcting equipment. At each outdoor meter location or location where the meter is exposed to temperatures equivalent to an outdoor environment, an appropriate approved type meter or accessory that corrects the metered volume of gas to a standard temperature of 60 degrees Fahrenheit, as prescribed in subdivision (a) of this section, shall be installed.

(c) A meter with an index reading other than zero may be placed in service, provided that meter and billing records are kept in a manner permitting verification of the readings as of the time of removal from the prior premises and installation at the succeeding premises.

(d) Operating pressure.

(1) Gas meters shall not be used at an operating pressure that exceeds the manufacturer's maximum allowable operating pressure for the meter.

(2) Rebuilt or repaired tinned case meters shall not be used at a pressure greater than 50 percent of the pressure used to test the meter after rebuilding.

§ 226.8 Domestic meters - in-test programs

(a) Domestic meter in-test program. After installation, all domestic meters shall receive an in-test at least once every seven years, except as otherwise provided in subdivisions (b) and (c) of this section. In-tests of meters shall be made at ambient temperature conditions at the same open and check test flow rates as used for out-tests specified in subdivision (a) of section 226.6. Where possible, all in-tests shall be performed within 60 working days after removal from customers' premises.

(b) Alternate domestic meter in-test program.

(1) Initial notification. In lieu of the schedule of testing set forth in subdivision (a) of this section, any utility may apply to Department staff for approval to adopt the alternate domestic meter in-test program described in this subdivision. The initial application for approval and any subsequent revisions shall include full formulation of said program complying with paragraphs (2) through (9) of this subdivision.

(2) Categories and test groups. All meters in use shall be segregated into categories based on delivered volume and grouped into test groups based upon performance.

(i) All meters shall be first grouped into Category A. Any utility having more than 100,000 domestic meters in service may further separate those meters servicing minimum bill customers into Category B and those registering 360

CCF or less in the preceding calendar year into Category C. A minimum bill customer shall be any customer whose average monthly consumption registered on the meter during the preceding calendar year did not exceed the minimum consumption indicated in the initial block of the utility's rate schedule for residential customers.

(ii) The meters in each category shall be grouped into test groups as follows:

TEST GROUPS	CALCULATED ANNUAL TEST RATE (%)
0	2.00
1	4.00-4.99
2	5.00-5.99
3	6.00-7.99
4	8.00 and above
5	Approved Retirement Program

Test group 5 shall be composed of all meters included in an approved retirement program. In the event that a utility has more than one retirement program in progress each program will be clearly identified and reported on separate forms. The total number of meters required for test within test groups one, two, three and five in any category shall be determined on the basis of the combined calculated test rate of all meter types within the group. Each type of meter within test group four shall be tested at its calculated test rate in accordance with Table 1 of Appendix 7-A of this Title, *infra*.

(iii) Meter types within each test group shall be identifiable by manufacturer and size. In addition, each participating utility shall maintain test data segregated by manufacturer, case, size, and age group to assist in the analysis of meter performance.

(3) Meters in use shall be segregated into age groups in one year increments as follows: "Age Group 1" will include meters last tested within 0 - 12 months, "Age Group 2" will include meters last tested within 13 - 24 months, etc.

(4) Minimum overall test rate. Except as provided in paragraph (6) of this subdivision, the required annual test rate will be used to determine the minimum number of meters to be tested from each test group for each approved utility in an ensuing calendar year and shall be based upon meter performance at the check rate during the preceding calendar year. For example, the performance of meters at each approved utility in calendar year 1993 will determine the test rate for each meter test group and the number of meters required to be tested at the utility in calendar year 1995.

(i) Category A. Each approved utility shall test its domestic meters as follows:

(a) Except as provided for in subparagraph (iv) of this paragraph, the required annual rate of test for each meter type shall not be less than four percent. The annual rate of test shall be determined by using a base of 4.0 percent of such meters in service where 100 percent of the meters are within +/- 2.0 percent of 100 percent proof. For each one percent of the meters found over 2.0 percent slow, the test rate shall increase 0.133 percent. For each one percent of the meters found over 2.0 percent fast, the test rate shall increase 0.267 percent.

(b) The required annual rate of test for a meter type in an ensuing year shall be based on the preceding year's check rate performance of those meters last tested eight or more years prior. For those meter types in Category A where the utility submits data indicating that more than 50 percent of the in-service meters were last tested within the previous eight years, the required annual rate of test for a meter type in the ensuing calendar year shall be based on the performance of meters in all age groups tested in the preceding calendar year.

(c) Where the calculated test rate is between 8 and 14 percent, the test rate shall be determined from Table 1 of Appendix 7-A of this Title, *infra*.

(d) Where the calculated test rate exceeds 14 percent in Table 1 of Appendix 7-A of this Title, *infra*, the following test rate shall apply: test rate = $2x+y-36$, where x = percentage of meters fast and y = percentage of meters slow.

(ii) Category B. Each approved utility may include meters servicing minimum bill customers separately in Category B and test them as follows:

(a) The minimum number of Category B meters to be tested on an annual basis shall be two percent of the utility's total number of minimum bill meters in service. In addition, on an annual basis, two percent of the total number of such meters in service shall be inspected for physical integrity and labeled on the customer's premises by qualified personnel. The meters inspected and labeled shall be those in service 10 or more years, the majority to be selected from those longest in service. In lieu of the number required for inspection, an equal number in service 10 or more years may be tested.

(b) The utility shall submit an annual summary report of those meters removed for fault and found to be faulty. Each reason for removal shall be segregated and reported separately, and will include the following: leak, does not pass gas, does not register, and meters found on inspection to be unserviceable.

(iii) Category C. With the exclusion of those meters qualifying for the option provided in Category B, each approved utility may include meters registering 360 CCF or less in the preceding calendar year separately in Category C and test them as follows:

(a) Except as provided for in subparagraph (iv) of this paragraph, the annual rate of test for each meter type in an ensuing year shall be determined by using a base of 3.5 percent of the qualifying meters in service where 100 percent of the meters in the preceding year are within + 2.0 percent of 100 percent proof. For each one percent of the meters found over 2.0 percent slow, the test rate shall increase 0.067 percent. For each one percent of the meters found over 2.0 percent fast, the test rate shall increase 0.133 percent.

(b) Where the calculated annual test rate is between 5.5 and 8.5 percent, the test rate shall be determined from Table 2 of Appendix 7-A of this Title, *infra*.

(c) Where the calculated annual test rate exceeds 8.5 percent in Table 2 of Appendix 7-A of this Title, *infra*, the following test rate shall apply: test rate = $2x+y-41.5$, where x = percentage of meters fast and y = percentage of meters slow.

(iv) For meter types where 98 percent upon in-test are found to be within +/- 1.5 percent of 100 percent proof in a preceding year, the test rate for the ensuing year shall be 2.0 percent of those type meters in service.

(5) The meters tested shall be from all age groups, the majority to be selected from those longest in service.

(6) The required meter tests for Categories A and B shall include a minimum of one percent or 100 meters, whichever is less, for each age group in service. In addition, a sufficient number of meters shall be selected from the oldest age groups to comply with paragraph (4) of this subdivision.

(7) Meters removed from service for reasons other than the requirements set forth in paragraphs (4) and (6) of this subdivision may be included for compliance therewith, provided that:

(i) The number of meters removed for fault or found faulty that may be credited against the test requirements for any meter type shall not exceed the number of the meters tested and found to be in sound condition; and

(ii) Meters that are removed and found to be inoperative or leaking shall be reported as such.

(8) Upon submission of a program satisfactory to the department staff, as described in subdivision (c) of this section, any utility may retire, or accelerate the repair of, any group of meters identifiable by make, type, or any other factor which affects performance. The number of meters that are removed in excess of the number that is required may be credited to those meters with a history of superior test rates. The number credited to each test group shall be limited to quantities which will assure a 2-percent sample of the superior performing meters.

(9) Any utility that does not meet its annual test requirements, in any test group, shall schedule such deficits in the following year's test requirements. Where a utility has exceeded its test requirements in any test group, such meters may be credited toward any deficits in the current year requirements, providing that the credits are applied to those meters with a history of superior test rates. A maximum of 2 percent or 200 meters, whichever is less, in any test group, may be credited towards the following year's test requirements.

(c) Retirement program. If a utility files with the department staff a satisfactory retirement program for any group of meters identifiable by make, type or any other factor which affects performance, the annual testing requirements of said type meter may be made as follows for the program's duration as set forth in the filing:

PERIOD OF RETIREMENT PROGRAM, YEARS	MINIMUM PERCENT OF RETIRED METERS TO BE TESTED PER YEAR
Not more than 15	20.0
Not more than 10	15.0
Not more than 5	10.0
Not more than 2	0.0

§ 226.9 Large volume meters - in-test programs

(a) Large volume meter in-test program. After installation, all large volume meters shall receive an in-test at least once every seven years, except as otherwise provided in subdivisions (b) and (c) of this section. In-tests of meters shall be made at ambient temperature conditions at the same open and check test flow rates as used for out-tests specified in section 226.6 (a) of this Part. Where possible, each in-test shall be performed within 60 working days after removal from a customer's premises.

(b) Alternate large volume meter in-test program.

(1) Initial notification. In lieu of the schedule of testing set forth in subdivision (a) of this section, any utility may apply to department staff for approval to adopt the alternate large volume meter in-test program described in this subdivision. The initial application for approval and any subsequent revisions shall include full formulation of said program complying with paragraphs (2) through (8) of this subdivision.

(2) Test groups. Test groups shall be formed in accordance with sections 226.8(b)(2)(ii), (iii) and (3) of this Part.

(3) Each approved utility shall test its large volume meters as follows:

(i) Except as provided in paragraph (5) of this subdivision, the required annual test rate will be used to determine the minimum number of meters to be tested from each test group for each approved utility in an ensuing calendar year and shall be based on meter performance at the check rate during the three preceding calendar years. For example, the performance of meters in the calendar years 1991-1993 shall determine the test rate for the meters in the calendar year 1995. The required annual test rate for each meter type shall be 4 percent of such meters in service where 100 percent of the meters are within +2.0 percent of 100 percent proof. For each 1 percent of the meters found over 2.0 percent slow, the test rate shall increase 0.133 percent. For each 1 percent of the meters found over 2.0 percent fast, the test rate shall increase 0.267 percent.

(ii) Where the calculated test rate is between 8 and 14 percent, the test rate shall be determined from Table 1 of Appendix 7-A of this Title, *infra*.

(iii) Where the calculated test rate exceeds 14 percent in Table 1 of Appendix 7-A of this Title, *infra*, the following test rate shall apply: test rate = $2x+y-36$, where x = percentage of meters fast and y = percentage of meters slow.

(4) The meters tested shall be from all age groups, the majority to be selected from those longest in service since last test.

(5) Meters tested for reasons other than the requirements set forth in paragraphs (3) and (4) of this subdivision may be included for compliance therewith, provided that:

(i) The number of meters removed for fault, or found faulty, that may be credited against the test requirements for any meter type shall not exceed the number of meters tested and found to be in sound conditions; and

(ii) Meters found to be inoperative or leaking shall be reported as such.

(6) No annual rate of test shall decrease from the required annual rate of the preceding year by a factor greater than 3 percent per year during each of the first 2 years of participation in the alternate large volume accuracy maintenance in-test program.

(7) Upon submission of a program satisfactory to the department staff, as described in subdivision (c) of this section, any utility may retire or accelerate the repair of any group of meters identifiable by make, type or any other factor which affects performance. The number of meters that are removed in excess of the number that is required may be credited to those meters with a history of superior test rates. The number credited to each test group shall be limited to quantities which will assure a 2 percent sample of the superior test rate meters. Meters to be retired shall be in-tested at the rate specified in subdivision (c) of this section. In-test results for retirement and accelerated repair programs shall be reported separately.

(8) Any utility that does not meet its annual test requirements, in any test group, shall schedule such deficits in the following year's test requirements. Where a utility has exceeded its test requirements in any test group, such meters may be credited toward any deficits in current year requirements, providing that the credits are applied to meters with a history of superior performance. A maximum of 2 percent or 200 meters, whichever is less, in any test group may be cre-

dated toward the following year's test requirements, provided that they are credited to those meters having superior test rates.

(9) Rotary meter differential testing. In lieu of paragraph (5) of this subdivision, a utility may elect to differential test rotary type meters as an indicator of meter condition. An increase of 50% in the pressure differential reading between the inlet and outlet of the meter from readings supplied by the manufacturer or readings taken at the time of the meter's installation will require maintenance to the meter to bring it back into specification or the performance of an in-test. Differential tests shall be done at least once every 10 years or at one half the meter's scheduled in-test interval, whichever is greater.

(c) Retirement program. If a utility files with the department staff a satisfactory retirement program for any group of meters identifiable by make, type or any factor which affects performance, the annual testing requirements of said type meter may be made as follows for the program's duration set forth in the filing:

PERIOD OF RETIREMENT PROGRAM, YEARS	MINIMUM PERCENT OF RETIRED METERS TO BE TESTED PER YEAR
Not more than 15	20.0
Not more than 10	15.0
Not more than 5	10.0
Not more than 2	0.0

§ 226.10 Orifice meters - general conditions and accuracy maintenance requirements

(a) General conditions. Orifice meters shall be installed to comply with American Gas Association Report No. 3, Orifice Metering of Natural Gas and Other Related Hydrocarbon Fluids, Third Edition, Part 1 General Equations and Uncertainty Guidelines (1990), Part 2 Specification and Installation Requirements (1991), Part 3 Natural Gas Applications (1992), and Part 4 Background, Development, Implementation Procedure, and Subroutine Documentation for Empirical Flange-Tapped Discharge Coefficient Equation (1992), available from American Gas Association, 1515 Wilson Boulevard, Arlington, Virginia 22209-2470.

(b) Test and inspection programs.

(1) The differential, static pressure and temperature recording gauges, integrating mechanism, and other pertinent components shall be tested annually.

(2) Periodic inspections of meter tubes and orifice plates, no less frequent than annually, shall be scheduled to insure compliance with original installation specifications.

§ 226.11 Fixed pressure factor measurement installations - general conditions and installation and accuracy maintenance requirements

For customers receiving gas at pressures higher than the normal delivery pressure, the utility may apply to department staff for approval to utilize the fixed pressure factor measurement method of determining corrected actual gas usage. The fixed pressure factor measurement method, where a constant elevated pressure is supplied to a meter, is a means of correcting volume indicated on the meter index to base pressure conditions as specified in the utility's tariff schedule.

(a) Fixed pressure factor measurement methodology. Where fixed pressure factor measurement is used, the amount of gas consumption shall be multiplied either mechanically or by a calculated factor derived from the following formula:

$$\text{Billing Multiplier} = \frac{(P_b + P_m)}{P_b}$$

Where P_b is the average barometric pressure for the utility's service area(s), measured in PSI. P_m is the delivery or metering pressure measured in PSIG and P_b is the base condition pressure defined in the utility's tariff schedule.

(b) Correction for average barometric pressure. Where the average barometric pressure varies by more than 0.10 PSIA within the utility's franchise territory, the average barometric pressure for that geographic location shall be calculated based on that location's elevation above sea level.

(c) Fixed pressure measurement installation requirements. At each installation where fixed pressure factor measurement is utilized, the following installation requirements must be met:

(1) The outlet set pressure to the customer's meter will be maintained under operating conditions to within +/- 1.0 percent of the absolute set pressure.

(2) Each pressure regulator shall be protected in a manner that would clearly indicate any unauthorized tampering with the outlet pressure adjustment screw.

(3) All fixed pressure factor measurement installations shall be clearly identified with the pressure regulation outlet set pressure and the billing multiplier.

(d) Fixed pressure factor accuracy maintenance requirements. The utility shall, at each fixed pressure factor measurement installation, verify the pressure regulation outlet set pressure initially and at periodic intervals, no less frequent than annually, thereafter. No fixed pressure factor measurement installation shall be installed or left in service where the resulting overall measurement proof is less than 99.0 percent nor more than 101.0 percent.

(e) Fixed pressure factor measurement records. The utility shall maintain records of all active fixed pressure factor measurement installations and the results of any maintenance performed at each installation.

§ 226.12 Periodic reports and records

(a) Periodic reports.

(1) In-tests made pursuant to sections 226.8 and 226.9 of this Part shall be reported quarterly. Each such report shall be filed with this commission not later than 30 days following the end of the respective reporting period on sheets similar to Form B for domestic meters and Form E for large meters of Appendix 7-A of this Title, *infra*.

(2) The annual summary report of domestic and large gas meters in-tested during the preceding year or years shall be filed with the commission not later than 60 days following the end of the respective reporting period on sheets similar to Forms C, D, and F of Appendix 7-A of this Title, *infra*. The reports are to be submitted identifying manufacturer, case, and size and any other factor which affects performance.

(3) Each utility shall keep a record of inspections, repairs and tests made to all correction devices. Such records will be made available to the commission or its designee upon request.

(4) Where a utility elects to transmit the above required data through electronic or computer discs, it must first obtain approval from the department staff that the system will be compatible with data processing equipment available to staff.

(b) Records. Each utility shall maintain records as stipulated in Part 292 and Appendix 4-A, *infra* of this Title.