

A record shall be kept of the pressure at some point on each system at all times.

(b) At least once each year the pressure variation shall be determined throughout each separate distribution system.

(2) All pressure charts which have been made shall be filed by the utility for at least 6 years and shall be sufficiently complete and so arranged that compliance with the individual requirements of section PSC 134.23 and system pressures can be determined easily.

History: Cr. Register, February, 1959, No. 38, eff. 3-1-59.

PSC 134.25 Calorimeter equipment. (1) Unless specifically directed otherwise a calorimeter shall be maintained at each gas producing or mixing plant whether the plant is in continuous operation or used only for standby or peak shaving purposes. The calorimeter shall be used to check the operation of the plant and shall measure the heating value of the gas going to the gas lines.

(2) Unless specifically directed otherwise calorimeters shall be maintained in operation in locations where the heating value of the gas can be measured from each different supplier.

(3) Unless specifically directed otherwise a calorimeter shall be maintained and used to measure the heating value of the gas actually sold to customers in those cases where mixed gases are used.

(4) Tests of heating value of the gas shall be made daily whenever gas is supplied at the calorimeter location unless specifically directed otherwise by the commission. The original records of the tests shall be dated, labeled and kept on file for 6 years. A copy of the daily average heating value of gas sold to customers shall be sent the commission each calendar month.

(5) The calorimeter equipment shall be maintained so as to give results within + or - 1%. Recording calorimeters used to test or control the production, or mixing of gas, or measure the heating value of purchased gas shall be tested with a gas of known heating value at least 3 times a year. Recording calorimeters used only with standby or peak shaving production plants shall be tested with a gas of known heating value at least 2 times a year. Nonrecording calorimeter equipment such as the Junkers shall be tested with a gas of known heating value at least once a year, or tested against another calorimeter of known accuracy at least once a year.

History: Cr. Register, February, 1959, No. 38, eff. 3-1-59.

PSC 134.26 Meter testing and testing equipment. (1) Each public utility giving gas service is responsible for the accuracy of equipment used to measure service to its customers and all gas supplied by the utility shall be metered unless specific exemption is obtained from the public service commission. The utility shall own and maintain the equipment and facilities necessary for accurately testing the various types and sizes of meters used by the utility for the measurement of gas, shall make the tests required by these rules, shall maintain the measuring devices, and maintain their accuracy; unless arrangements are made to have the work done by others who have properly equipped laboratories, are approved by the commission and arrangements are also made to have equipment and procedures checked by the public service commission. A test by the manufacturer of a metering device is not acceptable unless witnessed by a utility representative.

(2) Each public utility giving gas service shall own and maintain except as provided in section PSC 134.26(1) an industry approved meter prover of a capacity of not less than 5 cubic feet. The meter prover shall be complete with all accessories needed for accurate meter testing, shall be suitably located for meter testing, and shall be protected from drafts and excessive temperature changes. The equipment shall be maintained in good condition and correct adjustment and be capable of determining the accuracy of service meters to within one-half of one per cent.

(3) Each public utility giving gas service through rotary displacement meters, shall (a) own and maintain, except as provided in section PSC 134.26(1), a flow or volumetric meter of suitable capacity, together with necessary accessories, and it shall maintain such equipment in proper adjustment so that it will be capable of determining the accuracy of rotary type displacement meters to within one-half of one per cent; or (b) have a record of tests of each rotary type displacement meter made by an acceptable laboratory or manufacturer witnessed by a representative of the utility. The record should show that the test included a check of the recording device.

(4) Each public utility giving gas service through orifice type meters shall own and maintain, except as provided in PSC 134.26(1), instruments for checking the diameter of the orifice, a water column for testing the pressure differential recorder, and a mercury column or a dead weight gauge tester for testing the static pressure recorder so that the utility will be capable of determining the accuracy of these orifices and recorders to within one-half of one per cent.

(5) Instruments and equipment used for testing shall be checked at least once each 3 years against a standard.

History: Cr. Register, February, 1959, No. 38, eff. 3-1-59.

PSC 134.27 Meter accuracies. All meters shall be set as close to 100% accurate as possible. Diaphragm meters shall be considered correct for service if the results of the multiple tests called for agree within 1% and no test shows an error of more than 1% fast or slow. Rotary displacement meters shall be considered correct for service when tested at approximately 10% of rated flow with accuracy between 2% slow and 2% fast and at approximately 100% flow with accuracy between 1% slow and 1% fast. In orifice type meters, the deviations in the diameter of the orifice shall not exceed the following:

PRACTICAL TOLERANCES FOR ORIFICE DIAMETERS

Orifice Size	Tolerance Plus or Minus	Orifice Size	Tolerance Plus or Minus
.2500	.0008"	1.2500	.0014"
.3750	.0008"	1.5000	.0017"
.5000	.0008"	1.7500	.0020"
.6250	.0008"	2.0000 to 5.0000	.0025"
.7500	.0009"	over 5.0000	.0005" per inch of diameter
.8750	.0010"		
1.0000	.0012"		

In orifice type meters the sharpness of the orifice edge shall be maintained in such a condition that the upstream edge of the orifice shall not appreciably reflect a beam of light when viewed without magnification. No meter which is mechanically defective shall be placed in

service or allowed to remain in service after such defect has been discovered. The inlet and outlet of diaphragm type meters shall be capped when not connected in service.

History: Cr. Register, February, 1959, No. 38, eff. 3-1-59; am. intro. par. Register, November, 1962, No. 83, eff. 12-1-62.

PSC 134.28 Meter testing. (1) Each meter test of a diaphragm type meter with a capacity of 2,400 cubic feet per hour or less shall consist of one proving at a rate of flow one-fifth or less of the rated capacity of that meter and one proving at a rate of flow at or greater than the rated capacity of the meter. The capacity of the meter for test purposes shall be the capacity at one-half inch water column differential pressure.

(2) Each meter test of a diaphragm type meter having a capacity greater than 2,400 cubic feet per hour shall consist of one proving at a rate of flow one-fifth or less of the rated capacity of that meter and one proving at a rate of flow not less than 2,500 cubic feet per hour, but not less than twice the minimum test flow. The capacity of the meter for test purposes shall be the capacity at one-half inch water column differential pressure.

(3) Rotary meters shall be tested at two loads with the minimum load at 10% of rating by the use of a portable or volumetric meter or other approved proving devices, or be given a differential test. In the latter case an original test record shall be set up immediately after installation; future differential test results shall be recorded and compared with the original test record.

(4) A test of an orifice meter shall consist of tests of the recording gauges, and the removal, inspection and measurement of the orifice.

History: Cr. Register, February, 1959, No. 38, eff. 3-1-59; am. (3), Register, November, 1962, No. 83, eff. 12-1-62.

PSC 134.29 Installation test. No meter shall be used to meter gas consumption for billing purposes unless it was tested and found correct, as defined in section PSC 134.27 not longer than 6 months previous to its use. The first test on a meter or a retest after a major overhaul shall include a check of the registering device and linkages.

History: Cr. Register, February, 1959, No. 38, eff. 3-1-59.

PSC 134.30 Periodic testing and maintenance. Each utility shall test its meters according to the following schedule except as provided in section PSC 134.26(1). Where pressure regulators, volume corrective devices, or other measuring devices are used on the service or used in conjunction with the meters, they shall be tested on the same schedule as the meters.

(1) All diaphragm meters that are measuring dry gas and have non-absorptive-type diaphragms or were re-diaphragmed since the introduction of dry gas shall be removed from service, tested, adjusted, repaired if necessary, and retested if reused every 96 months if the meter capacity is 2,400 cubic feet per hour or less at ½-inch water column and every 48 months if the capacity is greater than 2,400 cubic feet.

(2) All diaphragm meters that are measuring dry gas that do not have non-absorptive-type diaphragms and have not been re-diaphragmed since the introduction of dry gas shall be removed from service, tested, adjusted, re-diaphragmed and retested within 48

months of the introduction of dry gas if the meter capacity is 2,400 cubic feet per hour at $\frac{1}{2}$ -inch water column and within 24 months if the capacity is greater than 2,400 cubic feet.

(3) All diaphragm meters that measure other than dry gas shall be removed from service, tested, adjusted, repaired, if necessary, and retested if reused every 96 months if the meter capacity is 2,400 cubic feet per hour or less at $\frac{1}{2}$ -inch water column and every 48 months if the capacity is greater than 2,400 cubic feet.

(4) Rotary meters shall be given a differential test at least once every 24 months. When the test differential pressure differs from the original test record by more than one inch water column pressure, the meter shall be cleaned and/or repaired.

(5) Orifice meters shall have their differential and static recording gauges tested at least once each month, the diameter and condition of the orifice checked at least once a year. The specific gravity of the gas shall be checked as required in section PSC 134.21(4), and any temperature recording devices tested annually.

History: Cr. Register, February, 1959, No. 38, eff. 3-1-59; am. (4), Register, 1962, No. 83, eff. 12-1-62.

PSC 134.31 Request and referee tests. (1) Each utility furnishing gas service shall make a test of the accuracy of any gas meter upon request of the customer, provided the customer does not request such test more frequently than once in 6 months. A report giving the results of each request test shall be made to the customer and the complete, original record shall be kept on file in the office of the utility.

(2) Any gas meter may be tested by a commission inspector upon written application of the customer. For such test, a fee shall be forwarded to the commission by the customer with the application. The amount of this fee shall be refunded to the customer by the utility if the meter is found to be more than 3% fast. The amount of the fee that is to be remitted for such tests shall be \$2 for each consumption meter that has a rated capacity not exceeding 1,000 cubic feet per hour; for larger consumption meters, demand meters, etc., the test fee shall be the actual expense of the test.

History: Cr. Register, February, 1959, No. 38, eff. 3-1-59.