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#### § 229.1 Definitions

(a) The term heating value per cubic foot shall be defined as being identical to that of total calorific value provided by the current relevant code of the American Society for Testing and Materials. It may be expressed on a wet or dry basis and so labeled. The factor for converting heating value per cubic foot on the wet basis to the dry basis at 60 degrees Fahrenheit, and the same pressure base conditions, is 1.0177. Except where noted, the wet basis of measurement is inferred in the remainder of this Part.

(b) One therm is equal to 100,000 British thermal units.

(c) Therm billing is defined as a method of billing consumers, for the actual amount of energy used, in units of therms.

#### § 229.2 Average heating value

(a) Average heating value for all gas distributed in each municipality or part thereof on a volumetric basis shall have a continuous:

(1) monthly average heating value of not less than 1,000 British thermal units per cubic foot or that amount specified by the company in its tariff schedule;

(2) three-day average heating value of not less than 980 British thermal units per cubic foot or 98 percent of that amount specified by the company in its tariff schedule.

(b) Where therm billing is employed, subdivision (a) of this section does not apply.

#### § 229.3 Equipment and testing procedures

Each company shall provide each of its testing stations required by subdivisions (a) through (d) of section 229.50 of this Part with equipment fully complying and standardized, maintained, adjusted and calibrated in full compliance with procedures acceptable to this commission.

#### § 229.4 Required tests

(a) Unless tests are made as provided for under subdivision (c) of this section, each company shall install a recording calorimeter at each of its testing stations required by subdivisions (a) through (d) of section 229.50 of this Part, the installation of said recording calorimeter to be subject to acceptance by this commission. Each recording calorimeter shall be maintained and operated by each company in such a manner as to continuously record the heating value of all distributed gas. Each recording calorimeter shall be calibrated weekly with a certified standard gas with a heating value that was determined by comparison with that of a standard methane, accurate to within 1.0 British thermal unit per cubic foot, certified by the National Bureau of Standards.

(b) The results of the calibration shall be recorded. Each said recording calorimeter shall be adjusted if it is determined to be in error.

(c) Other methods of determining heating value of distributed gas may be used providing they have been approved by this commission before they are used.

#### § 229.5 Records

(a) Each company shall compute and record both daily and monthly the average heating value of the distributed gas tested at each of its testing stations as required by subdivisions (a) through (d) of section 229.50 of this Part and as determined by the tests required by section 229.4 of this Part. For every testing station where a recording calorimeter is maintained and operated, a continuous record of the heating value of the distributed gas, as determined by the recording calorimeter, shall be maintained and the corrected averaged heating value of the distributed gas shall be computed and recorded both daily and monthly from the continuous record, except that for each day that the corrected maximum heating value exceeds the corrected minimum heating value by two or more percent of the latter, the corrected average, minimum and maximum heating value of the distributed gas shall be computed and recorded from the continuous record. A copy of each heating value record shall be maintained at its originating testing stations.

(b) Where therm billing is employed, all records of calibration and tests made to determine the accuracy of the therm billing factor shall be maintained by the company.

#### § 229.10 Hydrogen sulfide

(a) Allowable concentration. The gas distributed by each company shall contain no quantity of hydrogen sulfide greater than that permitted by subdivision (b) of this section.

(b) Equipment and testing procedure. (1) Each company shall provide each of its testing stations required by section 229.50 of this Part with equipment for the qualitative determination of the hydrogen sulfide content of gas fully complying with the provisions of this Part. In each instance of evidence of or doubt or difference of opinion regarding the presence of hydrogen sulfide in the distributed gas, or where directed by this commission, the company shall provide said testing stations with equipment for the quantitative determination of the hydrogen sulfide content of gas fully complying and maintained in full compliance with the provisions of paragraphs 65 through 87 of the relevant effective code of the American Petroleum Institute, the presently effective code being entitled "Recommended Practice for Measuring, Sampling, and Testing Natural Gas (RP 50A, Third Edition)" (the presently effective code hereinafter referred to as APIRP 50 A).

(2) Each company shall make all of the determinations of the hydrogen sulfide content of the distributed gas required by subdivision (c) of this section in full compliance with the following procedure and record the results thereof:

A strip of white filter paper moistened with a fresh solution containing five percent by weight of lead acetate shall be exposed to the distributed gas for one minute in a previously purged apparatus, fully complying and maintained in full compliance with the form recommended therefor by the second edition of Circular 48 of the National Bureau of Standards entitled "Standard Methods of Gas Testing" (hereinafter referred to as NBS C 48), through which the gas flows at a rate of approximately five cubic feet per hour. The gas shall not directly impinge upon the test strip during the test. At the end of the stated time, the test strip thus exposed shall be compared with a second test strip similarly prepared but not exposed to the gas. If the exposed strip is ascertained to be not noticeably darker than the comparison strip, the gas shall be considered to be free of hydrogen sulfide. If the exposed strip is ascertained to be noticeably darker than the comparison strip or if there is any doubt or difference of opinion regarding the color of the exposed strip, the gas shall be quantitatively tested for hydrogen sulfide in full compliance with the provisions of APIRP 50 A.

(c) Required tests. Each company shall make and record the results of one daily test of the hydrogen sulfide content of the distributed gas on each of not less than five days per calendar week at each of its testing stations required by subdivisions (a) through (d) of section 229.50 of this Part, except that, where there is evidence of the presence of hydrogen sulfide in said gas, three such tests shall be made daily at intervals of not less than three hours until said tests indicate the continued absence of hydrogen sulfide in the gas for a period of at least one week. At a testing station testing distributed gas obtained from a company's standby source, said company need not make a test of the hydrogen sulfide content of said gas during any day that the gas is obtained from said standby source for a total of less than one hour.

#### § 229.11 Total sulfur

(a) Allowable concentration. The gas distributed by each company shall contain not more than 30 grains of total sulfur per 100 cubic feet of gas volume measured at a temperature of 60 degrees Fahrenheit and an absolute pressure of 30 inches of mercury column.

(b) Equipment, testing procedure and required tests. (1) In each instance of evidence of or doubt or difference of opinion regarding the presence of total sulfur in the distributed gas, or where directed by this commission, each company shall:

(i) provide its testing stations required by subdivisions (a) through (d) of section 229.50 of this Part with equipment for the quantitative determination of the total sulfur content of gas fully complying and maintained in full compliance with any one of the foms\* recommended therefor by NBS C 48, or with the provisions of the relevant effective code of the American Society for Testing and Materials, the presently effective code being entitled "Standard Method of Test for Total Sulfur in Fuel Gases (D 1072-56)", and including a calibrated integrating dry displacement meter whose index may be read to 0.001 cubic foot; \* So in original. "foms" should be "forms"

(ii) make all of the quantitative determinations of the total sulfur content of the distributed gas that may be required by this commission likewise in full compliance with either code; and

(iii) quantitatively determine and record the total sulfur content of the distributed gas at its testing stations required by subdivisions (a) through (d) of section 229.50 of this Part as directed by this commission.

(2) Where said company is periodically supplied with reports regarding the total sulfur content of said gas, the information in said reports shall be filed with this commission at the time of the filing of the monthly reports required by section 229.61 of this Part. Said reports shall also include suitable identifying data, such as the source of each gas sample tested, the date that it was taken, the date, method and location of test, etc., and sufficient information to demonstrate that each sample is representative of the gas delivered to the company.

#### § 229.12 Ammonia

(a) Allowable concentration. The gas distributed by each company shall contain not more than five grains of ammonia per 100 cubic feet of gas volume measured at a temperature of 60 degrees Fahrenheit and an absolute pressure of 30 inches of mercury column.

(b) Equipment, testing procedure and required tests. In each instance of evidence of or doubt or difference of opinion regarding the presence of ammonia in the distributed gas, each company may be required to make suitable tests therefor with suitable equipment and a suitable testing procedure at its testing stations required by subdivisions (a) through (d) of section 229.50 of this Part as directed by this commission.

#### § 229.20 Equipment and testing procedure

Within 30 days of the effective date hereof, each company distributing natural gas shall advise this commission, by a letter signed by a responsible official of the company, of the manner in which the specific gravity of said gas is determined at or before each respective source of the gas. Each company's statement shall include the locations where said determinations are made, the name of the transmission corporation or company making said determinations at each location, information indicating that the samples tested in said determinations at each location are representative of the gas distributed by the company, the types of specific gravity equipment used in said determinations at each location and a summary of the procedure employed at each location for making said determinations and verifying their accuracy.

(a) Determination for metering purposes. (1) Where a company distributes natural gas that has had its specific gravity determined by the relevant transmission corporation in a manner adequate for orifice and other types of velocity metering at a testing station fully complying with the provisions of subdivision (b) of section 229.50, and section 229.51, with its total chemical composition unchanged from the location of specific gravity determination to the location of consumption, specific gravity equipment need not be installed in its testing station testing said gas provided that said company is periodically supplied with reports regarding the specific gravity of the gas. Said reports shall also include suitable identifying data such as the source of each gas sample tested, the date that it was taken, the date, method and loca-

tion of test, etc. and sufficient information to demonstrate that each sample is representative of the gas delivered to the company, that its specific gravity has been determined in a manner adequate for orifice and other types of velocity metering and that the equipment used to determine the specific gravity of the gas is periodically adjusted and calibrated in accordance with the provisions of subdivision (a) of section 229.21.

(2) Where a company distributes gas that has not had its specific gravity determined in a manner adequate for orifice and other types of velocity metering at a testing station fully complying with the provisions of subdivision (b) of section 229.50, and section 229.51 or that does not have its total chemical composition unchanged from the location of specific gravity determination to the location of consumption, part of which is distributed to a consumer with an orifice or other type of velocity meter, said company shall

(i) provide each of its testing stations testing said gas required herein by subdivisions (a) through (d) of section 229.50 with a recording gravitometer fully complying and standardized, maintained, adjusted and calibrated in full compliance with the provisions therefor of the relevant effective code of the American Society for Testing Materials, the presently effective code being entitled "Standard Methods of Test for Specific Gravity of Gaseous Fuels (D 1070-52)" (the presently effective code hereinafter referred to as ASTM D 1070), and the recommendations therefor of pages 76 through 95 of Miscellaneous Publication M 177 of the National Bureau of Standards entitled "Tests of Instruments for the Determination, Indication, or Recording of the Specific Gravities of Gases" (hereinafter referred to as NBS M 177) and

(ii) operate said recording gravitometer likewise in full compliance with said codes.

(b) Automatic and manual determination. In each instance not described herein by subdivision (a), each company shall

(1) provide each of its testing stations required herein by subdivisions (a) through (d) of section 229.50 with specific gravity equipment fully complying and standardized, maintained, adjusted and calibrated in full compliance with the relevant provisions therefor of ASTM D 1070 and/or the relevant recommendations therefor of NBS M 177 and those of the manufacturer's instructions therefor that do not conflict with either ASTM D 1070 or NBS M 177 and

(2) operate said specific gravity equipment likewise in full compliance with said codes.

#### § 229.21 Required tests

(a) Determination for metering purposes. Where a company is required by the provisions of subdivision (a) of section 229.20 herein to provide any of its testing stations required herein by subdivisions (a) through (d) of section 229.50 with a recording gravitometer for the purpose of determining the specific gravity of the distributed gas in a manner adequate for orifice and other types of velocity metering, said company shall continuously record the specific gravity of the distributed gas therewith. Each said recording gravitometer shall be calibrated once each calendar month at intervals of not more than 35 days and the results recorded. Each said recording gravitometer shall be adjusted if it is determined to be in error.

(b) Automatic determination. Where the tests set forth in subdivision (a) are not required, the company shall determine the specific gravity of the distributed gas either in compliance with subdivision (c) herein or continuously determine the specific gravity of the distributed gas with automatic specific gravity equipment at the testing stations required herein by subdivisions (a) through (d) of section 229.50 in compliance with this rule. Where the automatic specific gravity equipment is of an indicating type, the specific gravity of the distributed gas shall be read and recorded daily therefrom. In all instances, automatic specific gravity equipment shall be calibrated once each alternate calendar month at intervals of not more than 70 days and the results recorded.

(c) Manual determination. Unless tests are made in conformity with subdivisions (a) or (b) herein, each company shall determine and record the specific gravity of the distributed gas with manual specific gravity equipment at the testing stations required herein by subdivisions (a) through (d) of section 229.50 except that at a testing station testing gas obtained from a stand-by source, said tests need not be made during any day that gas be obtained from said stand-by source for a total of less than one hour.

#### § 229.22 Records

The average specific gravity of the distributed gas tested at each of its testing stations required herein by subdivisions (a) through (d) of section 229.50, as determined by the tests required herein by section 229.21, shall be computed and recorded for each day and each calendar month by each company. In each instance of a testing station where a recording gravitometer is maintained and operated, a continuous record of the specific gravity of the distributed gas, as determined by said recording gravitometer, shall be maintained and the corrected average specific gravity of the distributed gas be computed and recorded for each day and each calendar month from said continuous record except that for each day that the corrected maximum specific gravity exceeds the corrected minimum specific gravity by two or more per cent of the latter, the corrected average, maximum and minimum specific gravity of the distributed gas be computed and recorded from said continuous record. A copy of each specific gravity record shall be maintained at its originating testing station.

#### § 229.30 Equipment

Each company shall provide each of its testing stations required herein by subdivisions (a) through (d) of section 229.50 with appropriate equipment for the determination of the partial chemical composition (percentages of carbon dioxide, illuminants, oxygen and carbon monoxide) of gas.

#### § 229.31 Required tests and testing procedure

(a) Where a company is periodically supplied with reports regarding the chemical composition of the natural gas purchased from a transmission corporation, the information in said reports shall be filed with this commission at the time of the filing of the monthly reports required herein by section 229.61. Said reports shall also include suitable identifying data such as the source of each gas sample tested, the date that it was taken, the date, method and location of test, etc. and sufficient information to demonstrate that each sample is representative of the gas delivered to the company.

(b) In all other instances, each company shall make and record the results of determinations of the chemical composition of the distributed gas at each of its testing stations required herein by subdivisions (a) through (d) of section 229.50 at such intervals and using such methods as may be acceptable to or required by this commission.

#### § 229.40 Combustible additives

Within 30 days of the effective date hereof, each company shall advise this commission, by a letter signed by a responsible official of the company, of the extent and circumstances under which it adds supplement and/or substitute gas to the gas usually distributed. If, at any time subsequent to said filing with this commission, a company proposes new or additional sources of supplement and/or substitute gas at existing or new locations, said company shall amend its filing, by a letter signed by a responsible official of the company, to advise this commission of the proposed sources of gas at least 90 days prior to the effective date of said change except that, in instances of sudden emergency where such prior notice of the proposed sources of gas proves impossible, such notice of the proposed sources of gas shall be given to this commission, by a telegram over the name of a responsible official of the company, at the earliest possible date.

#### § 229.41 Non-combustible additives

Where a company proposes the addition of air or any other extraneous non-combustible gas other than water vapor to the gas previously authorized for distribution by this commission, said addition shall not be made without the specific authorization thereof of this commission.

#### § 229.42 Standards of interchangeability

In order to establish the quality and proportions in which any supplement, substitute or diluent gas may be added to the gas usually distributed, each company shall be guided by the relevant effective publications of the American Gas

Association, Bureau of Mines, Institute of Gas Technology and National Bureau of Standards in the design, construction and operation of manufactured gas plants and gas mixing stations and the compositions and proportions of said gases.

#### § 229.43 Verification of interchangeability

To assure that the burning qualities of the distributed gas do not vary sufficiently to adversely affect the safety and/or efficiency of any appliances, each company shall maintain and operate suitable test equipment, during the periods when its manufactured gas plant and/or gas mixing station is operating, to compare the burning qualities of the distributed gas with those of the gas with which its consumers' appliances have been adjusted. The types and adjustments of said test equipment shall be representative of those of its consumers' appliances. The performance of said test equipment shall be observed at frequent intervals whenever supplement, substitute or diluent gas is added to the gas usually distributed and be considered to be indicative of the actual interchangeability of the gases involved. Records shall be kept of the periodic observation of the performance of said test equipment.

#### § 229.50 Number and location

Within 30 days of the effective date hereof, each company shall advise this commission, by a letter signed by a responsible official of the company, of the location of each of the testing stations to be provided, maintained and operated by the company and the source of the gas that each of said testing stations purports to test. If, at any time subsequent to said filing with this commission, a company obtains additional or new sources of gas, said company shall amend its filing at least 90 days prior to the effective date of said change, by a letter signed by a responsible official of the company, to advise this commission of the additional or new sources and the testing stations to be provided, maintained and operated for testing the gas to be obtained therefrom. All testing stations shall meet the following requirements:

(a) Single company testing stations. (1) Where a company purchases or produces gas at one or more locations, testing stations shall be provided, maintained and operated by said company, with one testing station for each separate ultimate source of gas, located between the location of conditioning of said gas and the point of mixture of the gas with gas from any other source. All of the tests required herein shall apply to said testing stations.

(2) Where a company has two or more sources of gas supplying one distribution system, said company may be required to provide and maintain such additional testing stations on its distribution system as may be necessary to enable this commission's staff to verify the quality of the mixture of gases being delivered to consumers' premises.

(b) Joint testing stations. (1) Where a company purchases gas, having a common ultimate source, at one or more locations or where two or more companies obtain their gas supply from one or more common ultimate sources, said companies may provide, maintain and operate joint testing stations, with one such testing station for each separate ultimate source of gas, located prior to the point of mixture of the gas with gas from any other source. All of the tests required herein shall apply to said testing stations.

(2) One or more companies may designate one testing station for each separate ultimate source of gas, provided, maintained and operated by the transmission corporation from which said companies purchase their gas, as a testing station meeting the provisions herein, provided that the gas tested by said testing station is continuously representative of that delivered to said companies, that said testing station is located within the State of New York or 40 miles thereof and that said companies shall assure this commission that said testing station continuously meets the provisions of the rules and regulations herein. All of the tests required herein shall apply to such testing stations.

(c) Underground storage fields. Where a company obtains part of its gas supply from an underground storage field in which the chemical composition of the gas may be so altered as to depart from the standards established herein, the company shall take such remedial measures as may be necessary and shall provide, maintain and operate a testing station for making tests appropriate for the determination of the compliance of said gas with the provisions of the rules and regulations herein.

(d) Small districts. (1) Where a company distributes manufactured gas to 100 or less consumers or natural and/or mixed gas to 1,000 or less consumers, said mixed gas being composed of not less than 70 per cent natural gas as gaged by its thermal content on the basis of the annual gas send-out to the consumers of said gas, said company need not provide the testing stations required herein by subdivisions (a) through (d) of section 229.50.

(2) Where natural gas produced in the State of New York, representing less than 10 percent of the thermal content of the annual gas send-out to the consumers of said gas, feeds into a company's general transmission and distribution system at various isolated locations, said company need not provide a testing station therefor.

(3) Any company exempted by this section from providing a testing station in any district shall provide and maintain suitable sampling facilities to enable the staff of this commission to obtain samples of gas from the system and determine the pressure in said system.

#### § 229.51 Equipment, maintenance and availability

Each company shall provide each of its testing stations required herein by subdivisions (a) through (d) of section 229.50 of this Part with suitable equipment, including apparatus, reagents and facilities for testing gas, together with all necessary accessories and appurtenances, as required herein and maintain said equipment in good condition. The contents of each said testing station shall be subject to acceptance by this commission. Access to each said testing station shall be available at all times to the staff of this commission for the purpose of making gas tests and/or inspections of the testing station.

#### § 229.52 Gas sampling

Where a company makes any of the tests required herein on gas that is sampled at a location other than that of the test, said gas shall be sampled in full compliance with the provisions of the relevant effective code of the American Society for Testing Materials, the presently effective codes being entitled "Standard Method of Sampling Natural Gas (D 1145-53)" and "Standard Method of Sampling Manufactured Gas (D 1247-54)."

#### § 229.60 Records

Each company shall retain all of its records of the tests required herein on suitable forms for a period of not less than two years for examination and inspection by the staff of this commission.

#### § 229.61 Reports

Each company shall file a report for each calendar month with the office of this commission in the City of New York or in the City of Albany not more than 20 days after the expiration of the calendar month including the results of all tests and computations required herein, full relevant information for each testing station required herein, an explanation for each instance of noncompliance with the rules and regulations herein that may have occurred and a statement regarding each relevant emergency that may have occurred. Said report shall be furnished on a form, corresponding to that illustrated in form B and form C, Appendix 7-B of this Title, and provided by the company, be signed by a responsible official of the company.

#### § 229.70 Revision of other publications referred to herein

For the purpose of complying with the rules and regulations herein, each company shall be governed, insofar as the same are herein made applicable, by the provisions of the publications of the American Gas Association, American Petroleum Institute, American Society for Testing Materials, Bureau of Mines, Institute of Gas Technology and National Bureau of Standards referred to herein which were in effect December 31, 1956. Upon the filing by a company of copies of an amended or revised edition of any of said publications with this commission, said amended or revised edition shall replace the edition referred to herein as a standard in the applicability of the rules and regulations herein, effective 90 days after the date of said filing, unless otherwise directed by this commission.