

220 CMR 101.00: MASSACHUSETTS NATURAL GAS PIPELINE SAFETY CODE

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101.01: Compliance with MFS Standards

Every gas pipeline facility and liquefied petroleum gas plant in Massachusetts shall be designed, constructed, operated, and maintained, except as otherwise provided in 220 CMR 101.00, in compliance with federal pipeline safety standards as set forth in 49 CFR Part 192: *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards* (MFS Standards). Every liquefied petroleum gas plant shall also be designed, constructed, operated, and maintained according to the requirements of National Fire Protection Association 59 Utility LP-Gas Plant Code (2004) (NFPA 59).

In addition, each operator of pipeline facilities used for the transportation of natural gas or hazardous liquids and each operator of liquefied petroleum gas facilities shall comply with the provisions of 49 CFR Parts 40 and 199.

To the extent that any provision of 220 CMR 101.00 conflicts with any provision of the MFS Standards, the more stringent provision prevails.

101.02: Definitions

Except as otherwise specified in 220 CMR 101.00, all words are as defined in 49 CFR 192.3.

Contractor. A person directly or indirectly contractually engaged with an operator to provide labor, materials, or equipment for the performance of Gas Work. Contractor includes any subcontractor or any third party designated to provide services.

Department. Department of Public Utilities, Commonwealth of Massachusetts.

Division. Pipeline Safety Division of the Department.

Gas Work. Any activity covered by applicable state and federal pipeline safety standards that the Department has the authority to enforce, including but not limited to the following: 220 CMR 99.00: *Procedures for the Determination and Enforcement of Violations of Safety Codes Pertaining to Damage Prevention*, 220 CMR 101.00 through 115.00, all federal pipeline safety standards as set forth in 49 CFR Part 192, and federal safety standards for liquefied natural gas (LNG) as set forth in 49 CFR Part 193.

Hoop Stress. The tensile stress, usually in pounds per square inch gauge (psig), acting on the pipe along the circumferential direction of the pipe wall when the pipe contains gas or liquid under pressure.

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Pressure Limiting Station. Equipment that under abnormal conditions will act to reduce, restrict, or shut off the supply of gas flowing into a system to prevent the gas pressure from exceeding a predetermined value. Pressure Limiting Station includes pipe and auxiliary devices such as valves, control instruments, control lines, the enclosure, and ventilating equipment, installed in accordance with the pertinent requirements of 220 CMR 101.00.

Pressure Regulating Station. Equipment installed for automatically reducing and regulating the gas pressure in the downstream pipeline, main, holder, pressure vessel or compressor station pipe to which it is connected. Pressure Regulating Station includes pipe and auxiliary devices such as valves, control instruments, control lines, the enclosure, and ventilation equipment.

Underground Structure. A manmade facility, the majority or entirety of which is located below grade.

Upgrading. Increasing the Maximum Allowable Operating Pressure (MAOP) of a pipeline in accordance with 49 CFR Part 192, Subpart K.

101.03: Applications for Exceptions and Waivers

(1) Any person engaged in the construction, maintenance, or operation of a natural gas or liquefied petroleum gas facility may make a written request to the Department for an exception to the provisions of 220 CMR 101.00, in whole or in part. The request shall justify why the exception should be granted and shall demonstrate why the exception does not derogate from the safety objectives of 220 CMR 101.00. The request shall include details on the need for the exception, specific information on the circumstances surrounding the exception, the provisions of 220 CMR 101.00 from which exception is sought, and a description of any safety consequences that might result from the exception. Documentation in support of the request shall also be submitted.

The Department may, after consideration and the payment of the appropriate fee, issue a written decision denying the exception or granting the exception as requested or as modified by the Department and subject to conditions. An exception may be granted or denied in writing by the Director of the Division, or by the Director's functional successor in the event of an internal reorganization of the Department. Any person aggrieved by a decision of the Director of the Division may appeal the decision to the Department. Any appeal shall be in writing and shall be made not later than ten business days following issuance of the written decision.

In an emergency, a verbal request for an exception may be granted by the Department or the Director of the Division, provided that the verbal request is subsequently confirmed in writing within seven days of the exception being granted.

(2) Pursuant to 49 U.S.C. 60118(d), the Department may waive compliance with a federal safety standard to which the Department's 49 U.S.C. 60105 certification applies, provided that the Department gives notice of such waiver to the Secretary at least 60 days before the waiver becomes effective.

101.04: Notice of Proposed Construction

(1) Notice of proposed construction shall be filed with the Department at least 14 days prior to the start of any of the following projects:

- (a) All new and replacement pipeline installation projects of 1,000 feet or more in length.
- (b) All new and replacement pipeline installation projects where the pipeline will have an MAOP of 125 psig or more.
- (c) All Upgrading projects.

(2) If there are no construction projects in a calendar year meeting the requirements of 220 CMR 101.04(1), then an operator shall file with the Department a notice of proposed construction at least 14 days prior to the start of any project for no fewer than three projects, provided that at least three projects are undertaken.

101.05: Preservation of Records

Nothing contained in 220 CMR 101.00 shall conflict with 220 CMR 75.00: *The Preservation of Records of Electric, Gas, and Water Utilities*.

101.06: Rules or Modifications Related to 49 CFR Part 192

Notwithstanding any provision of the MFS Standards which may allow less stringent requirements, the following additional rules or modifications shall apply.

(1) Class Locations. (MFS Standards § 192.5). For the purpose of 220 CMR 101.00, every gas pipeline facility shall be designed, constructed, tested, operated, and maintained using a Class 3 location as a minimum class location designation.

(2) Overpressure Protection. (MFS Standards §§ 192.195, 192.201, 192.741).

(a) Each operator shall take steps to protect its distribution system from overpressure events. In addition to complying with 49 CFR Part 192, each operator shall implement the following additional requirements within three years of October 11, 2024:

1. Install one of the following:
 - a. a "slam shut" device in the Pressure Regulating Station including in applications where there is only worker-monitor pressure control;
 - b. a third regulator; or
 - c. a full-capacity relief valve immediately downstream of the station only where a "slam shut" or third regulator is not practicable.
2. Install and employ telemetered pressure recordings at each Pressure Limiting Station or Pressure Regulating Station to signal failures immediately to operators at control centers. The telemetering pressure gauge shall be installed as close as practicable to the outlet of each Pressure Limiting Station or Pressure Regulating Station.
3. Completely and accurately locate, map, and document the location of all sensing lines for each Pressure Regulating Station within the system where the sensing line location is not already documented. The mapping shall include, but not be limited to, the line size, depth, length, material, and distance of each line from reference points.
4. Ensure that all underground sensing lines which extend beyond three feet from a Pressure Regulating Station vault or pit are plated to protect from possible damage. The type of additional protection and the location of the additional protection shall be mapped and documented as specified in 220 CMR 101.06(2)(a)3.
5. Ensure that all aboveground sensing lines for Pressure Regulating Stations are secured by the installation of a fence or protective enclosure.
6. Ensure that all overpressure protection is set at or below MAOP of the downstream system, with the exception of the devices mandated by 220 CMR 101.06(2)(a)1., which may be set in accordance with 49 CFR 192.201(a).
7. Establish procedures requiring the isolation of overpressure protection devices if MAOP could be exceeded during maintenance or testing.
8. Ensure that all steel control lines are cathodically protected in compliance with 49 CFR 192.463.
9. Maintain a list of critical valves for the isolation of Pressure Limiting Stations and Pressure Regulating Stations. The list shall be readily available for all personnel that would need to operate these valves. The list shall contain the number of turns needed to operate each valve and the direction the valve must be rotated to close it.
10. Establish a procedure for confirming the operability of critical valves in the operator's system. The procedure shall require that personnel who operate critical valves consult the list of critical valves and that critical valves be checked once every calendar year at intervals not exceeding 15 months.
11. Visually inspect and document Pressure Limiting Stations and Pressure Regulating Stations four times per year at intervals not to exceed four months. This inspection is to verify the physical condition of all equipment and structures.
12. Review and verify that no Pressure Limiting Station or Pressure Regulating Station is operating above 90% of its maximum capacity. Each operator shall contact the Department if any Pressure Limiting Station or Pressure Regulating Station is found to exceed 90% of its maximum capacity.

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13. Establish or update procedures to require that personnel immediately respond to the location of any overpressure protection activation.
 - (b) All maintenance activities on Pressure Limiting Stations and Pressure Regulating Stations shall include the following:
 1. Any underground sensing lines undergoing maintenance shall be relocated to the safety of a Pressure Regulating Station vault or pit. If the relocation of the sensing lines is not practicable, the operator shall repair or replace the leaking segment of a sensing line and ensure that all sensing lines are protected as specified by 220 CMR 101.06(2)(a)4.
 2. If any major maintenance (*i.e.*, station reconfiguration) is to take place, the Pressure Limiting Station or Pressure Regulating Station shall be updated to comply with the requirements of 220 CMR 101.06(2)(a).
 - (c) All future construction activities for new Pressure Regulating Stations shall comply with all existing guidelines and shall:
 1. Be designed with two regulators in series utilizing a "control" or "working" regulator and a "monitor" (wide-open or working monitor) regulator for the first level of overpressure protection;
 2. Include a second level of overpressure protection such as a "slam shut" or additional "monitor" regulator;
 3. Include a filter or strainer installed upstream of each individual pressure limiting or pressure regulating pipe run;
 4. Be designed and installed with adequate redundancy to protect against a single failure;
 5. Be designed in a manner that limits sensing lines from extending beyond three feet from a Pressure Regulating Station vault or pit;
 6. Be designed to ensure all regulator atmospheric vent lines terminate aboveground and are rain and insect resistant;
 7. For aboveground Pressure Regulating Stations located inside of buildings, include a gas sensor that monitors for general leaks that alerts the operator's control centers; and
 8. Include a telemetering pressure gauge installed as close as practicable to the outlet of each Pressure Regulating Station.
- (3) Welders and Welding Operators Qualified Pursuant to 49 CFR 192.227(a). (MFS Standards § 192.229(c)).
- (a) Requalification of Welders. At least twice each calendar year, at intervals not exceeding 7½ months, each welder who is qualified in accordance with 49 CFR 192.227(a) shall make one production weld or test weld and have it successfully tested in accordance with API 1104, "Qualification of Welders" and "Acceptance Standards for Nondestructive Testing," as incorporated by reference in 49 CFR Part 192.
 - (b) Records. Each operator shall keep records showing that each welder has:
 1. Qualified with the process and the procedure to be used;
 2. Used the process within the last six calendar months; and
 3. Had at least one production weld or test weld successfully tested in accordance with 220 CMR 101.06(3)(a).
- (4) Inspection and Test of Welds. (MFS Standards §§ 192.241, 192.243).
- (a) Notwithstanding the requirements of 220 CMR 101.06(4)(b), not less than 10% of the welds randomly sampled over the length of at least three of the installations of which notice of construction is required under 220 CMR 101.04 shall be radiographically examined and made available to the Department. If fewer than three installation projects are undertaken by any operator, at least 10% of the welds shall be radiographically examined and available to the Department.
 - (b) The Department may, at any time, visually inspect any welding and, if it is considered faulty, order the operator to subject the weld to a destructive test as outlined in MFS Standards, Appendix C, paragraph I or to a radiographic examination.

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- (5) Protection from Hazards. (MFS Standards § 192.317).
- (a) The method of protecting all new pipeline on trestles and bridges (including culverts at least ten feet in length) shall be subject to the pre-approval of the Department. For each such bridge crossing, the operator shall submit a written request for approval and a detailed installation plan to the Department that includes the following items:
1. The proposed nominal pipe diameter, wall thickness, (minimum wall thickness 0.237"), and the Specified Minimum Yield Strength (SMYS).
 2. The maximum operating pressure of the pipeline and the test pressure. The maximum operating pressure for new pipelines on bridges shall not exceed 200 psig.
 3. For nominal pipe diameters 12" or greater, a calculation of the hoop stress (H) in accordance with the following formula:

$$H = \frac{PD}{2t}$$

H = Hoop stress in pounds per square inch
P = Maximum Operating Pressure in pounds per square inch gauge
D = The specified outer diameter in inches
t = Specified wall thickness in inches (not less than 0.237").

4. The method of providing for expansion or contraction of the bridge, if necessary.
 5. Pipe support details, number of supports, and distances between supports.
 6. An indication that valves are provided on both sides of the bridge and their approximate location.
 7. The means for shutting off the flow of gas in the pipeline across the bridge.
 8. The corrosion protection provided for the pipeline and metallic supports.
- (b) For bridges under the care and control of the Massachusetts Department of Transportation (MassDOT), the procedure for a MassDOT permit shall be as follows:
1. On new bridges, a preliminary design plan shall be submitted by MassDOT to the pertinent utility company notifying it of the proposed construction and suggested location of pipe on or in the bridge structure. (A copy of this letter shall be forwarded to the Director of the Division).
 2. The utility company shall submit a plan to the Department within 30 days of the receipt of the afore described design plan if any construction is proposed on the particular bridge.
 3. No permit for the installation of gas facilities on bridges shall be considered unless MassDOT has received from the Department a letter approving the design.
 4. All requests for permits for gas facilities on new bridges shall be directed to the Highway and Structures Engineer at the Highway Division of MassDOT.
 5. All requests for new gas facilities on existing bridges shall be directed to the Maintenance Engineer at the Highway Division of MassDOT.

- (6) Cover. (MFS Standards § 192.327).
- (a) Except as provided in 220 CMR 101.06(6)(b), each buried transmission line or main must be installed with a minimum cover from the top of the pipe to the surface of the road as follows:

TABLE I		
Location	Normal Soil	Consolidated Rock
Transmission lines	36"	24"
Mains	24"	24"
Mains installed in highways under MassDOT control	36"	36"

- (b) Where an underground structure prevents the installation of a transmission line or main with the minimum cover, the transmission line or main may be installed with less cover if:
1. The main or transmission line is provided with additional protection to withstand anticipated external loads and adequate measures are taken to prevent damage to the pipe by external forces;
 2. The operator follows written procedures regarding the additional protection;

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3. The operator maintains a map or record of the location and the original depth of cover of the installation for the life of the installation;
4. For mains, the MAOP will produce a stress level of less than 20% of SMYS; and
5. The operator immediately notifies the Department by telephone upon discovery of the structure and submits the following information to the Department for approval prior to completing the installation:
 - a. The location and description of the underground structure;
 - b. Details regarding the installation, including the year of existing installation, the pipeline segment diameter and material, depth of cover, and MAOP;
 - c. The footage of the pipeline segment with less cover;
 - d. The distance between the top of the structure and final grade;
 - e. A profile sketch of the installation;
 - f. The reason for the shallow transmission line or main installation; and
 - g. A statement regarding the measures to be taken to prevent damage to the transmission line or main by external forces.

(7) Meters and Regulators. (MFS Standards § 192.353).

- (a) Meters and regulators shall be installed so as to protect them from anticipated or potential dangers including, but not limited to, vehicles, falling ice and snow, flooding, or corrosion.
- (b) Service Regulators:
 1. An operator may not install or operate a service regulator located within 18 inches to the side or above and below any building opening; three feet in any direction from any exterior defined source of ignition; or five feet in any direction from any forced air intake. Service regulators that utilize overpressure shutoff technology or otherwise effectively eliminate venting gas to atmosphere are exempted from the distance restrictions of 220 CMR 101.06(7)(b)1.
 - a. The distance shall be measured from the vent or source of release (discharge port), not from the physical location of the meter set assembly.
 - b. If the operator learns of a service regulator that fails to meet the minimum distance requirements as set forth in 220 CMR 101.06(7)(b)1., it shall take remedial action within 90 days of discovery.
 2. All service regulator records shall be kept for at least ten years.
 3. Each operator shall develop and implement a service regulator maintenance and inspection program. All service regulators shall be inspected during any activation, reactivation, or statutory meter change under M.G.L. c. 164, § 115A. The maintenance and inspection program shall include procedures to ensure that a lock-up and run test is conducted, and to ensure that the service regulator is maintained in accordance with manufacturer's specifications.

(8) Service Lines - Valve Requirements and Locations. (MFS Standards §§ 192.363, 192.365, 192.383, 192.385).

- (a) Each service line to a school, synagogue, church, mosque, hospital, nursing home, rehabilitation center with overnight patient facilities, theater, arena, or factory shall have a manually operated, underground valve within a covered, durable valve box that allows ready operation of the valve, is supported independently of the service line, and is located in proximity to the source of supply or the property line of the building served.
- (b) Each service line with an outside service riser pipe or meter assembly shall have at least one manually operated, aboveground valve located in a readily accessible location, provided that:
 1. The service line is operated at low pressure; or
 2. The service line contains a properly designed and installed excess flow valve, and the aboveground valve is installed upstream of the service regulator.
- (c) Each service line that does not meet the criteria of 220 CMR 101.06(8)(a) or (b) shall have two manually operated valves located as follows:
 1. One valve at the service riser or meter assembly; and
 2. One underground service line valve within a covered, durable valve box that allows ready operation of the valve, is supported independently of the service line, and is located in proximity to the source of supply or the property line of the building served.

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(d) For any branched service line installed without an excess flow valve, the requirements of 220 CMR 101.06(8)(b) and (c) shall apply to each individual service line.

(e) When the state or a municipality repairs streets, roads, or sidewalks, the operator shall provide for the maintenance and improvement of gate boxes located therein, so that the gate boxes are easily and immediately accessible.

(9) Corrosion Control/Cathodic Protection - Remedial Actions Timeframe. (MFS Standards §§ 192.465(d), 192.457(b)).

(a) Whenever annual electrical testing reveals that the pipeline or segment thereof does not meet adequate cathodic protection criteria, or upon discovery of any deficiencies indicated by monitoring, corrective action must be taken to either:

1. Reestablish cathodic protection to the required level within one calendar year; or
2. Replace the section of pipeline within two calendar years.

Each operator shall document the reason for any remedial actions not taken within the specified timeframe.

(b) Whenever active corrosion is discovered in pipelines installed before August 1, 1971, corrective action must be taken either to:

1. Establish cathodic protection to the required level within one calendar year; or
2. Replace the section of pipeline within two calendar years.

Each operator shall document the reason for any remedial actions not taken within the specified timeframe.

(10) General Pipeline Pressure Test Requirements. (MFS Standards § 192.503).

(a) Each operator shall use a procedure for each pressure test that will ensure discovery of all potentially hazardous leaks in the segment being tested. Pressure loss due to leakage during the test period is not permitted.

(b) Tie-in joints to a pipeline pressurized with gas shall be leak tested at not less than the pipeline's operating pressure (*e.g.*, soap-bubble tested).

(c) The types of tie-in joints that must be tested shall be designated in the operator's written procedures.

(d) The test medium selected by the operator for pressure tests herein shall be air, inert gas, natural gas, or water.

(e) All pressure tests for pipelines shall be measured or recorded by instruments calibrated in accordance with manufacturer's specifications and the records kept for the life of the pipeline segment that was tested.

(f) Each operator shall use a test procedure that will ensure discovery of all potentially hazardous leaks in the segment being tested. However, loss of pressure due to leakage during the test period is not permitted. If feasible, the service line connection to the main must be included in the test. If not feasible, it must be given a leakage test at the operating pressure when placed in service.

(g) Except for tie-in sections, pipelines shall be tested after installation and prior to being placed into service to ensure discovery of all potentially hazardous leaks in the segment being tested.

(h) Pre-tested pipe may be used only on mains, subject to the following conditions:

1. Pre-tested pipe sections shall be no more than 12 feet in length.
2. Pre-tested pipe sections shall be labeled with the date of the pre-test, the pre-test pressure, duration of the pre-test, and the name of the person who conducted the pre-test.
3. A record of the date of the pre-test, the pre-test pressure, duration of the pre-test, the name of the person who conducted the pre-test, the installation date and location shall be kept for the service life of the pipe.
4. The pre-test must have been conducted no earlier than one year prior to the date of installation.
5. The pre-test pressure must be at least 90 psig or 1.5 times the MAOP of the main, whichever is greater.
6. Tie-in joints shall be soap- or leak-tested at the operating pressure of the main.
7. The pipe shall be visually inspected for damage at the time of installation.
8. No intermediate joints are permitted.

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(11) Pressure Test Requirements for Pipelines to Operate at a Hoop Stress of Less than 30% of SMYS and at or above 100 psig. (MFS Standards § 192.507). Except for service lines and plastic pipelines, each segment of a pipeline to be operated at a hoop stress of less than 30% of SMYS and at or above 100 psig must be pressure tested in accordance with the following:

- (a) If a pipeline is being stressed to 20% or more of SMYS during a pressure test using air, inert gas, or natural gas (*i.e.*, pneumatic testing):
 - 1. A leak test shall be made at a pressure between 100 psig and the pressure required to produce a hoop stress of 20% of SMYS; or
 - 2. The pipeline shall be walked to check for leaks while the hoop stress is held at approximately 20% of SMYS.
- (b) If a pipeline is being stressed to 20% or more of SMYS during a pressure test using a liquid (*i.e.*, hydrostatic testing), the provisions in 220 CMR 101.06(11)(a)1. and 101.06(11)(a)2. do not apply.
- (c) The pipeline shall be pressure tested for not less than one hour.

(12) Pressure Test Requirements for Pipelines to Operate below 100 psig. (MFS Standards § 192.509). Except for service lines and plastic pipelines, each segment of a pipeline to be operated below 100 psig must be tested to a pressure of at least 90 psig for not less than one hour.

(13) Pressure Test Requirements for Service Lines. (MFS Standards § 192.511). Except for plastic service lines, all service lines must be pressure tested in accordance with the following:

- (a) Each segment of a service line to operate at not more than 100 psig shall be tested after construction and before being placed into service to at least 90 psig for not less than 15 minutes.
- (b) Each segment of a service line to operate at pressures in excess of 100 psig must be tested in accordance with 49 CFR 192.507 of the MFS Standards.

(14) Pressure Test Requirements for Plastic Pipelines. (MFS Standards § 192.513).

- (a) Plastic pipelines to be operated at an MAOP not greater than 60 psig shall be pressure tested to at least 90 psig.
- (b) Plastic pipelines to be operated at an MAOP greater than 60 psig shall be pressure tested at 1.5 times the MAOP.
- (c) Plastic service lines shall be pressure tested for not less than 15 minutes.
- (d) Plastic mains shall be pressure tested for not less than one hour.

(15) Operating Pressures for Low-pressure Distribution Systems. (MFS Standards § 192.623).

- (a) Maximum Allowable Operating Pressure. The MAOP of low pressure distribution systems shall not exceed 14 inches water column.
- (b) Minimum Operating Pressure. For low-pressure service, the delivery pressure to the customer shall normally not be less than ½ of the standard delivery pressure.

(16) Odorization of Gas. (MFS Standards § 192.625).

- (a) A combustible gas in a distribution line shall have a distinctive odor of sufficient intensity so that a concentration of 0.15% gas in the air is readily perceptible to the normal or average olfactory senses of a person coming from fresh uncontaminated air into a closed room containing one part of the gas in 666 parts of air.
- (b) In the concentrations in which it is used, the odorant in combustible gases must comply with the following:
 - 1. The odorant must not be deleterious to persons, material, or pipe.
 - 2. The products of combustion from the odorant must not be toxic when breathed nor may they be corrosive or harmful to those materials to which the products of combustion will be exposed.
- (c) The odorant may not be soluble in water to an extent greater than 2.5 parts to 100 parts by weight.
- (d) Equipment for odorization must introduce the odorant without wide variations in the level of odorant.

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- (e) Equipment and facilities for handling the odorant shall be located so as to minimize the effect of an escape of odorant.
- (f) Each operator shall conduct monthly sampling of the odorized gas at points it determines, including the extremities of the distribution system, to assure the proper concentration of odorant in accordance with 220 CMR 101.06(16).
- (g) Each operator shall take prompt remedial action to correct conditions that result in detection at concentrations exceeding 0.15% gas in air.
- (h) Equipment and facilities for handling the odorant shall be designed and operated to minimize odorant leaks.

(17) Distribution Systems: Leakage Surveys and Procedures. (MFS Standards § 192.723). Each operator having a gas distribution system shall conduct leakage surveys, as frequently as experience and technology indicates they are necessary, but in no event shall such leakage surveys be less than the following minimum standards:

- (a) Business Districts. A leakage survey with leak detector equipment must be conducted in business districts including tests of the atmosphere in gas, electric, telephone, sewer and water system manholes, at cracks in pavement and sidewalks, and at other locations providing an opportunity for finding gas leaks, at least once each calendar year at intervals not exceeding 15 months. In areas where an effectively prescribed and supervised survey of electric or other manholes and vaults is conducted and offers more frequent coverage than the previous, such a survey procedure may be substituted. Business districts are defined as areas with pavement from building wall to building wall or where the principal commercial activity of the city or town takes place. The operator shall define a business district by maps or other documents.
- (b) Distribution System Areas Not Included in the Principal Business District. Leakage surveys shall be made of the area not included in the principal business district at least once in every consecutive 24-month period.
- (c) Type of Survey. Leakage surveys for 220 CMR 101.06(17)(a) and (b) shall be conducted using one or more of the following:
 - 1. Gas detector surveys using combustible gas indicators, flame ionization equipment, infra-red equipment or other industry accepted testing equipment;
 - 2. Bar tests;
 - 3. Vegetation surveys; or
 - 4. Pressure-drop tests.
- (d) Other Surveys. In addition to the requirements of 220 CMR 101.06(17)(a) and (b), a survey of each school, synagogue, church, mosque, religious temple, hospital, nursing home, rehabilitation center with overnight patient facilities, theater, and arena shall be conducted at intervals not exceeding 15 months, but at least once each calendar year. The survey shall include a test for gas leakage and visual inspection of the operator's gas facilities in the immediate area of the point of entry of each underground service line.
- (e) Hazardous Conditions Repaired. All disclosed conditions of a nature hazardous to persons or property shall be promptly made safe and permanent repairs instituted.
- (f) Leakage Survey Records.
 - 1. Records of the leakage surveys required under 220 CMR 101.06(17) shall be maintained for a period of time not less than seven years.
 - 2. An operator who uses leakage survey records instead of electrical surveys for monitoring corrosion protection, in accordance with 49 CFR 192.456(e), shall retain those leakage survey records for the life of the pipeline.

(18) Pressure Test Requirements for Reinstating Service Lines. (MFS Standards § 192.725).

- (a) Each operator shall make and retain a record of each pressure test required under 49 CFR 192.725 MFS Standards.
- (b) Except as provided in 220 CMR 101.18(c), each service line that is disconnected for abandonment shall be tested from the point of disconnection to the end of the service line in the same manner as a new service line before being reinstated as outlined in 220 CMR 101.06(10) through 101.06(14).

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(c) Each service line temporarily disconnected from the main shall be tested from the point of disconnection to the service line valve at the riser or the meter assembly in the same manner as a new service line, before reconnecting, as outlined in 220 CMR 101.06(10) through 101.06(14). However, if provisions are made to maintain continuous service, such as by installation of a bypass, any part of the original service line used to maintain continuous service need not be tested.

(19) Operator Qualifications. (MFS Standards § 192.805).

- (a) By one year from October 11, 2024, all operator written qualification programs (OQ) shall list all covered tasks and include specific abnormal operating conditions for each task.
- (b) All OQ covered tasks shall be cross-referenced with applicable construction standards or specifications or applicable operation and maintenance activities including emergency response.
- (c) All individuals who perform OQ covered tasks shall be qualified in all the OQ covered tasks that they perform.
- (d) Individuals who are responsible for inspection or supervision of those performing OQ covered tasks shall be qualified in all the OQ covered tasks for which they are responsible.

(20) Identifying Threats and Ranking Risk. (MFS Standards § 192.1007).

- (a) Risk of Overpressurization. Each operator shall consider the single points of failure that could lead to an overpressurization of its distribution system as a threat. Each operator shall review and revise its Distribution Integrity Management Plan (DIMP) accordingly. If each of the single points of failure that could lead to an overpressurization of a distribution system is not considered an existing threat by an operator, justification for the elimination of this threat from consideration shall be documented in the operator's DIMP.
- (b) Risk of Reaching or Exceeding Maximum Capacity. Each operator shall consider the vulnerability of a distribution system to reach or exceed maximum capacity as a whole or in part as a risk. Each operator shall review and revise its DIMP accordingly. If the vulnerability of a distribution system to reach or exceed maximum capacity in whole or in part is not considered a risk by an operator, justification for the elimination of this risk from consideration shall be documented in the operator's DIMP.

(21) Remote Read Meter. When an electronic/encoder receiver transmitter meter or other remote meter read device has been installed with a meter, the operator shall verify the accuracy of the remote read device whenever the meter is removed from service in accordance with M.G.L. c. 164, § 115A.

(22) MAOP. MAOP shall be posted within Pressure Regulating Stations and at service regulators.

(23) Abandonment of Valves. Each operator shall develop and implement procedures to remove or abandon all associated valve boxes in the course of abandoning a main. Abandonment procedures shall include the following:

- (a) Remove valve cover, breaking collar if possible;
- (b) Fill valve box with crushed stone; and
- (c) If valve is located on a paved street, top with concrete or patch.

101.07: Oversight of Contractors

(1) Each Contractor who wishes to be eligible to receive contracts with an operator to perform Gas Work shall be required to register annually with the Department. In a manner specified by the Department, each Contractor shall:

- (a) Certify that the Contractor is in good standing with the Department, including, but not limited to, being in compliance with:
 - 1. the payment of all civil penalties; and
 - 2. all consent order items.

101.07: continued

- (b) Provide confirmation from each operator that the Contractor is in compliance with the following requirements (if applicable):
 - 1. 49 CFR Part 192 subpart N;
 - 2. 49 CFR Part 193 subpart H; and
 - 3. 49 CFR Parts 199 and 40.
 - (c) Comply with any other requirements set forth by the Department.
- (2) Each operator who utilizes a Contractor to perform Gas Work shall:
- (a) Ensure that each Contractor is registered with the Department; and
 - (b) Maintain a ratio of not fewer than one qualified operator inspector to every two Contractor crews within its service territory. This ratio requirement shall apply only to crews of two or more individuals.
- (3) Each operator who utilizes a Contractor to perform Gas Work shall evaluate Contractor qualifications by:
- (a) Ensuring that each Contractor follows the operator's written qualification program;
 - (b) Ensuring that all personnel performing covered tasks are qualified;
 - (c) Maintaining complete and accurate OQ training and certification records for each Contractor; and
 - (d) Reviewing and ensuring compliance with each Contractor's Drug and Alcohol plan.

101.08: Distribution Maps and Records

- (1) Each operator shall establish and maintain maps of the operator's service area which identify the operator's intrastate gas pipeline facilities. Each operator shall establish and follow procedures to ensure that maps and records are:
- (a) Accurate, complete, and identify the location of all active pipes, including but not limited to mains, services, and service stubs;
 - (b) Updated within 60 days of the completion of construction, completion of maintenance, or discovery of a main or service;
 - (c) Kept and maintained at a secure location; and
 - (d) Available to all applicable operating personnel.
- (2) Facilities that are under active construction or maintenance must be identified in the operator's maps and records and be available to operating personnel.
- (3) Each operator shall establish training for all construction and maintenance staff, including Contractors, on its maps and records procedures.
- (4) Each operator shall implement a Quality Assurance and Quality Control program to identify and correct inaccuracies of its maps and records. Each operator shall report the results to the Department annually in a format to be determined by the Department.
- (5) Each operator shall comply with all guidelines set by the Department regarding service quality metrics.

101.09: Additional Reporting Requirements

- (1) Single-feed System. Each operator with a single feed distribution system (*i.e.*, a system with one confirmed source such as a single district regulator supplying gas downstream of the regulator) shall measure the gas pressure in the system at all times over the course of the year and report the results for each calendar year to the Department by no later than March 15th of the following year in a format to be determined by the Department, in accordance with the following:
- (a) Prior to January 1, 2025, an operator may use telemetering or recording pressure gauges as may be required.
 - (b) Beginning January 1, 2025 and thereafter, telemetering shall be the sole method used to measure the gas pressure at all times for each single-feed distribution system.

101.09: continued

- (2) Winter Surveillance and Patrol Procedures. No later than November 1st of each year, each operator shall provide the Department with a copy of its Winter Surveillance and Patrol program/procedures for cast-iron pipelines. In addition, each operator must notify the Department by email when its winter patrols begin and when its winter patrols cease.
- (3) Street Restoration Standards.
 - (a) Each operator shall comply with the “Standards to be Employed by Public Utility Operators When Restoring any of the Streets, Lanes and Highways in Municipalities” (Street Restoration Standards) issued in Street Restoration Standards, D.T.E. 98-22 (1999).
 - (b) No later than May 1st of each year, each operator shall file with the Department, in a format specified by the Department, a written statement or policy designed to ensure that managers, supervisors, and other distribution personnel are aware of and held accountable to the Street Restoration Standards. The statement shall include details and records as specified by the Department.
- (4) Gate Box Reports. (M.G.L. c. 164, § 116B). No later than March 31st of each year, each operator must file an annual report documenting all instances of inadequate notice of paving projects that resulted in gate boxes being paved over during the prior calendar year. The report, in a format to be determined by the Department, must include information, as specified by the Department, on paved-over gate boxes discovered since the prior year’s report.
- (5) Mechanical Fitting Failures. Each operator shall report each mechanical fitting failure that results in the hazardous release of gas no later than 15 days after determining a mechanical fitting failure using a form to be determined by the Department.
- (6) Telephonic Incident Reporting Requirements. Each operator shall notify the Department by telephone of certain specific events, as specified by the Department, in a format approved by the Department. Each operator shall make the notification promptly but no more than two hours following discovery of such events.

101.10: Master Meter System

No operator shall provide gas service to any Master Meter System, as defined in 49 CFR 191.3, constructed after December 31, 2022, without written approval from the Department. The Department may approve such service only if the service is found to be consistent with safe and reliable service requirements and the associated rates and charges for such service are found to be just and reasonable.

101.11: Calibration

- (1) Each operator shall ensure the periodic inspection and calibration of all equipment used in construction, operations, and maintenance activities where improper calibration or failure to inspect could impact the equipment's performance. Equipment calibrations shall be in accordance with the frequencies defined in the manufacturer's procedures and specifications.
- (2) Each operator shall have the means to verify date of calibration and expiration date of all such equipment covered under 220 CMR 101.11(1) in the field upon the request of the Department.
- (3) Calibration procedures shall be included in the Operating and Maintenance manual and readily available in the field or at the work location.

101.12: Directional Drilling

Within one year of October 11, 2024, each operator shall ensure that its written construction procedures include specific provisions for directional drilling and other trenchless technology installation methods that minimize the potential damage to gas pipelines and other underground facilities, including electric, communications, water, sewer, and steam.

101.13: Construction Quality Assurance Plans

Construction quality assurance plans shall be maintained in writing and shall require that:

- (1) Each operator shall inspect any new construction by outside Contractors that is or will be incorporated into the operator's system to verify that the resulting installation meets operator specifications;
- (2) A representative number of field verification audits shall be conducted after field work is completed for specific installation tasks; and
- (3) Performance audits shall be conducted to evaluate a representative sample of various tasks during the actual time that the work is being performed by the employee or Contractor.

101.14: Operator Procedures Manual

Each operator shall incorporate procedures for all requirements of 220 CMR 101.00 into its written procedures under 49 CFR Part 192 as applicable, to ensure compliance with M.G.L. c. 164, § 105A and 220 CMR 101.00.

REGULATORY AUTHORITY

220 CMR 101.00: M.G.L. c. 164, §§ 66, 76, 76C, 105A and 116B.